

# Five-Year Effects of an Anti-Poverty Program on Marriage among Never-Married Mothers

Anna Gassman-Pines  
Hirokazu Yoshikawa

## ABSTRACT

*Using data from an experimental evaluation of the New Hope project, an anti-poverty program that increased employment and income, this study examined the effects of New Hope on entry into marriage among never-married mothers. Among never-married mothers, New Hope significantly increased rates of marriage. Five years after random assignment, 21 percent of women assigned to the New Hope condition were married, compared to 12 percent of those assigned to the control group. The New Hope impact on marriage was robust to variations in model specification. The program also increased income, wage growth, and goal efficacy among never-married mothers, and decreased depression. In non-experimental analyses, income and earnings were associated with higher probability of marriage and material hardship was associated with lower probability of marriage. © 2006 by the Association for Public Policy Analysis and Management*

## INTRODUCTION

Rates of entry into marriage are low and declining among never-married mothers living in poverty. Compared to their higher-income counterparts, low-income individuals are less likely to marry, and they have marriage rates that are declining more rapidly (Edin & Kefalas, 2005; Fields & Casper, 2001; Seefeldt & Smock, 2004). Policymakers and researchers are concerned about this trend, in part, because of research on the associations between marriage and adults' and children's well-being. Research shows that, compared to single adults, both men and women who are married have fewer physical and mental health problems and greater financial well-being (Nock, 1995; Waite & Gallagher, 2000). Research also indicates that children in two-parent families have higher levels of academic achievement and fewer behavior problems than children in single-parent families. Also, children in married two-parent families exhibit fewer behavior problems than children in cohabiting two-parent families (McLanahan & Sandefur, 1994). However, the bulk of research examining the association between marriage and parent and child well-being has been conducted on mixed- or upper-income samples. Only recently have researchers begun to examine marriage among low-income individuals.

While marriage rates are declining among low-income individuals, the symbolic significance of marriage remains strong for low-income mothers as well as the country as a whole (Karney, Garvan, & Thomas, 2003; Smith, 1999). For instance,

Manuscript received December 2004; review completed January 2005; revised manuscript submitted March 2005; revision review complete March 2005; revised manuscript submitted March 2005; accepted March 2005.

one recent study conducted in Florida found that 92% of adults agree or strongly agree that “a happy healthy marriage is one of the most important things in life” (Karney et al., 1999). Despite the disparity in marriage rates between low- and higher-income individuals, low-income adults in one study expressed a stronger preference for being married in the future than higher-income adults (Karney et al., 1999). Similarly, many low-income mothers and fathers expect to cohabit and marry immediately after the birth of a child (Waller, 2004).

If low-income mothers respect and desire marriage, why then are their rates of entry into marriage so low? Qualitative studies help provide an answer to this question. One study found that low-income mothers and fathers have a number of prerequisites for marriage, including financial stability and asset accumulation, as well as interpersonal stability and trust (Gibson, Edin, & McLanahan, 2004). Rather than facilitating marriage, these prerequisites may serve as a barrier because it may be difficult for low-income individuals to satisfy them. Cohabitation, which is more informal than marriage, is not viewed with the same level of importance and thus the prerequisites for marriage do not apply to cohabitation (Gibson et al., 2004). A recent study using qualitative data from the New Hope Ethnographic Study—a randomly-selected subset of the sample of low-income families used in the current study—shows a high level of concordance with Gibson et al.’s findings (Gassman-Pines, Yoshikawa, & Nay, forthcoming). Economic stability was the most commonly cited goal that sample members said they needed to achieve before they could marry. Sample members also talked about wanting an overall sense of stability and a reduction in chaos in their lives before marrying.

If unmarried mothers describe a need for financial stability before marriage, it is important to consider how women’s economic circumstances relate to marriage. Research in economics and sociology has depicted a shift in economic predictors of marriage in recent decades. While men’s earnings always have been a strong predictor of marriage, the association between women’s earnings and marriage seems to be changing. Theoretical work has articulated over time—from the late 1800s through the 1980s—the prediction that the more women earn, the less likely they will be to marry, because they will not need to depend on a male partner for financial support (Becker, 1981; Durkheim, 1960; Parsons, 1949). This theory is based on a specialization model where women are assumed to specialize in care for children and the home and men are assumed to specialize in work outside the home.<sup>1</sup>

A recent review of the literature suggests that the association between women’s earnings and marriage may, in fact, mirror that of men’s earnings (Oppenheimer, 1997). The more women earn, the more likely they may be to marry, possibly because they have more resources to contribute to a potential partnership. Sweeney’s (2002) study using data from the National Longitudinal Surveys of Labor Market Experience supports this recent shift in the association between women’s earnings and marriage. Although for women born in the 1930s and 1940s earnings and marriage were negatively related, these factors were positively related to marriage for women born in the 1950s and 1960s. Other recent studies find either little association between women’s earnings and marriage, or a positive association, with those women who earn more also more likely to marry (Ellwood & Jencks, 2002;

<sup>1</sup> Not all economic theories predict that women’s earnings would be negatively related to marriage. For example, theoretical work on intra-household bargaining might suggest that increases in women’s earnings could be positively related to marriage, because increased earnings would strengthen women’s bargaining positions (Lundberg & Pollack, 1993).

Lichter, McLaughlin, Kephart, & Landry, 1992; Oppenheimer, 1994, 1997; Smock & Manning, 1997; Xie, Raymo, Goyette, & Thornton, 2003).

Given low-income women's desire for financial stability before marriage, what role do policies that increase financial stability play in women's entry into marriage? Could there be a role for anti-poverty policy in marriage promotion? There is little evidence that the 1996 welfare reform, the Personal Responsibility Work Opportunity Reconciliation Act (PRWORA), changed rates of marriage among women on welfare (Blank, 2002; Murray, 2001). Currently, policymakers are addressing this issue by funding marriage promotion programs. These programs consist of three key approaches: providing counseling or training in relationship skills to couples; educating parents about the value of marriage; and altering tax policy to remove financial disincentives to marriage (Dion & Devaney, 2003; U.S. Department of Health and Human Services, 2002). Marriage promotion programs have rarely utilized other economic approaches or tried to alter other aspects of the economic context. For example, marriage promotion efforts have not emphasized programs that might increase financial stability. A key approach may be one that increases both employment and income. The New Hope program was one such program, an anti-poverty program that aimed to increase both employment and income. New Hope operated outside of the welfare system in Milwaukee, Wisconsin, in the mid- and late-1990s. For individuals working full time, New Hope provided earnings supplements, low-cost health insurance, and child-care subsidies. Community service jobs were provided to those unable to find private employment. New Hope was offered to low-income residents of two Milwaukee neighborhoods with high concentrations of poverty. While many of those who volunteered for the New Hope program were welfare recipients, welfare receipt was not a requirement for program participation. Prior experimental evaluations of New Hope have found that the program increased both employment and income, in both the short-term (two years after random assignment) and the long-term (five years after random assignment) and that the program was successful in its key goal of reducing poverty (Bos, Brock, Duncan, Granger, Huston, & McLoyd, 1999; Huston et al., 2003).

Given that New Hope successfully increased employment and income, might the program also have effects on entry into marriage? The current study examines effects of the New Hope anti-poverty program on marriage five years after random assignment for never-married mothers. In addition to altering employment and income, anti-poverty programs may also affect indicators of mothers' well-being, which in turn may predict entry into marriage. As described above, mothers in the New Hope sample said that financial stability is a goal they would like to meet before getting married. Social psychological theories of goal setting state that meeting a goal in one domain increases individuals' feelings of efficacy in meeting goals in other domains (Bandura, 1997; 2001). Thus, if a program helps women to meet their stated goal of achieving financial stability, the program may also increase their sense of efficacy in meeting other goals. This, in turn, could lead to setting and meeting the goal of getting married.

By increasing employment and income, anti-poverty programs may also decrease depression, parenting stress, and material hardship. Although research has not examined how levels of depression, parenting stress, and material hardship predict entry into marriage, there is a large body of literature examining how these indicators of well-being are related to current marital quality (Fein, Burstein, Fein, & Lindberg, 2003). High levels of depression, parenting stress, and material hardship have all been linked to lower levels of marital satisfaction and adjustment (Conger, Rueter, & Elder, 1999; Cox, Paley, Burchinal, & Payne, 1999; Vinokur, Price, & Caplan, 1996). If these well-being indicators are related to marital satisfaction, they

may also be related to entry into marriage and may help explain the effects of an anti-poverty program on marriage.

A number of experimental tests of different welfare and anti-poverty approaches were conducted in the 1990s. These studies offered opportunities to experimentally examine the effects of different types of policies on marriage among never-married mothers, and the current study should be considered in the context of prior results. Looking at the effects of welfare programs on marriage for all single parents, program effects have been mixed (Fein, London, & Mauldon, 2002). Some programs have increased marriage, others have decreased marriage, and most have not affected marriage rates. A recent meta-analysis used data from 14 experimentally evaluated programs to investigate the short-term effects of different welfare program approaches on marriage (Gennetian & Knox, 2003). Overall, they found that welfare programs did not affect marriage among never-married mothers. When looking separately at different program approaches, only one program approach increased marriage among never-married mothers in the short-term: programs that provided financial incentives to work but did not impose time limits on receiving welfare benefits.<sup>2</sup> On average across those four programs, a statistically significant increase of 3.2 percent in marriage rates was found (Gennetian & Knox, 2003).

That meta-analysis only examined the effects of welfare programs on marriage in the short term, principally two and three years after random assignment. However, changing demographic outcomes may take more time, and effects may not appear in the short term. In addition to examining long-term marriage impacts, results of the current study may also differ from those reported in the meta-analysis because New Hope was provided outside of the welfare system and was therefore not included in that study.

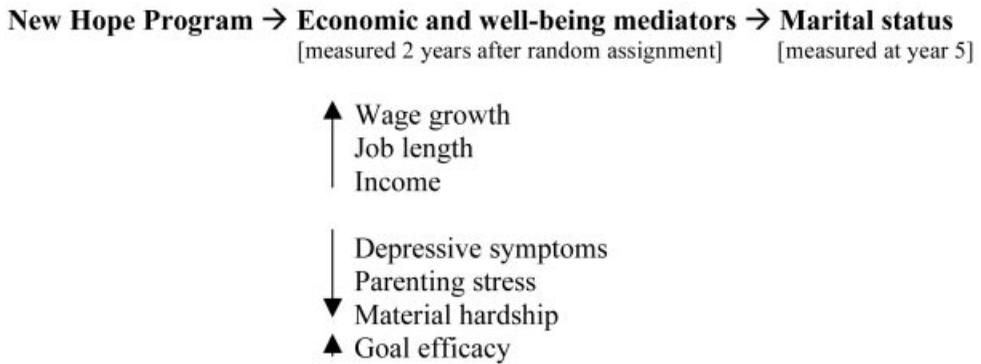
This study examines the long-term effects of a program that increased employment and income on entry into marriage among never-married mothers. It is the first study to present data on the long-term effects of an anti-poverty program on marriage. We focus on never-married mothers because the processes leading to marriage for the first time are likely to differ from the processes leading to remarriage. Figure 1 displays this study's conceptual model. New Hope is posited to have an indirect effect on marriage five years after random assignment via shorter-term changes in employment, income, and well-being. New Hope is expected to increase wage growth, job length, income, and goal efficacy and decrease depressive symptoms, parenting stress, and material hardship. These economic and well-being mediators, in turn, are expected to be related to marriage. This study seeks to answer the following questions:

1. What is the impact of the New Hope program on marriage among never-married mothers five years after random assignment?
2. If a program effect on marriage is found, what factors might explain it? Both economic and well-being mediators will be considered.

## METHOD

### Program

<sup>2</sup> Four programs represented this approach: Full MFIP; MFIP Incentives Only; Full Vermont WRP; and Vermont WRP Incentives Only. For more information on how programs were categorized, see Gennetian and Knox (2003).



**Figure 1.** Conceptual model.

The New Hope Project offered a generous set of work support benefits to low-income residents of two poor neighborhoods in Milwaukee, Wisconsin. The program offered a wage supplement to increase participants' income up to the poverty threshold, affordable health insurance, child-care subsidies, and community service jobs for those unable to find private employment. In order to qualify for the benefits, participants were required to work 30 hours per week.

New Hope was a voluntary program. Participants had to meet four criteria: 1) live in one of the two targeted neighborhoods, 2) be 18 or older, 3) have an income at or below 150 percent of the federal poverty line, and 4) be willing and available to work 30 hours or more per week. Every person who volunteered to participate was randomly assigned to either the program or a control group. New Hope enrolled and randomly assigned participants between August 1994 and December 1995. Only those assigned to the program group could receive New Hope benefits. Members of the control group could receive other benefits or services in the community if they chose. The main government services available to control group members changed throughout the course of the study period. At the beginning of enrollment, control group members were eligible, depending on their income level, for Aid to Families with Dependent Children (AFDC), which at that time was governed by the Family Support Act of 1988. In March 1996, Wisconsin began an initial reform of its welfare program, in advance of the national welfare reform PRWORA. The welfare program implemented in 1996 focused on discouraging applicants from going on the welfare rolls by having them meet with a financial planning resource specialist before applying for benefits and requiring them to participate in employment-related services for the month when their eligibility was processed. Those who joined the rolls were required to work for 30–35 hours per week and were subject to heavy sanctions for non-compliance. In October 1996, time limits were introduced, limiting lifetime welfare receipt to 60 months. In the fall of 1997, Wisconsin began implementing its Temporary Assistance to Needy Families (TANF) program, Wisconsin Works (W-2). W-2 was very similar to its predecessor, requiring recipients to work in order to keep their benefits and imposing a 60-month lifetime limit on benefit receipt.

While it is difficult to determine whether the sample who volunteered for New Hope are representative of those eligible for the program, analyses by Brock, Doolittle, Fellerath, and Wiseman (1997) indicate that those who volunteered for New

Hope shared similarities and differences with those who were eligible for the program. By conducting a neighborhood survey, Brock et al. found that a similar proportion of volunteers and eligibles had full-time work experience, were receiving AFDC, and had a high school diploma. However, there were differences between the volunteers and the eligibles. Volunteers were slightly older than eligibles, were more likely to hold a technical, associate (or 2-year) degree, and were less likely to be African American and more likely to be white. As Brock and colleagues summarize, “it appears that the recruitment process for New Hope did produce a subset of the eligible population that is similar to persons identified in the [neighborhood survey] as eligible and interested in the program” (p. 127).

### Study Sample

The sample for this study includes all women who reported at baseline that they had never been married (N = 406). Descriptive information about the sample appears in Table 1. The sample was primarily African American and Latino, most sample members were receiving some type of government assistance at random assignment, and about two-thirds of the sample had a high school diploma or GED. Two years after random assignment, all sample members with a child between the ages of one and ten were selected to be surveyed. Sample members were surveyed again five years after random assignment. The survey took place in the respondents' homes or, if people had moved more than 50 miles from Milwaukee, by telephone. Parents were given \$35 for completing the survey. Analyses examining New Hope's impact on entry into marriage among never-married mothers is based on those women who responded to the 5-year survey (N = 337; 83% of those randomly assigned). Analyses examining potential mediators of the New Hope impact on marriage are further limited to those who also answered the two-year survey (N = 299; 74% of those randomly assigned). Attrition analyses showed few differences among those retained and those who were not on baseline characteristics and no differences in predictors of attrition by experimental condition.

### Measures

*Marital status at year 5.* In each survey, respondents were asked about their marital status in the month before the interview. From these questions, the outcome variable—married at the 5-year follow-up—was created. Respondents who indicated that they were married and living with their spouse or married and living apart from their spouse were considered to be married.

If respondents indicated that they were not married, they were asked whether they were currently living with a boyfriend/girlfriend or partner. Those who responded yes to this question were considered to be in an unmarried cohabiting relationship.

*Employment and income during years 1 and 2.* Data on wage growth and job length were collected through the 2-year survey. In the 2-year survey, respondents were asked about each job they had held over the two years after random assignment. For each job, respondents provided start and end dates, hours worked per week, and hourly wage at the start and end of the job. From this information two independent variables were created: *average job length in months* and *wage growth* over the two-year period. Wage growth was calculated by subtracting the starting hourly wage at the start of the first job from the ending hourly wage at the current or most recent job.

**Table 1.** Baseline characteristics.

	Percent (%)
Cohabiting	7.6
Age – mean(SD)	26.9 (5.6)
Race/ethnicity	
Black	62.5
Latino	24.1
White	11.0
Other	2.4
Number of children in the household	
One	30.8
Two	30.8
Three or more	38.5
Age of youngest child less than 2	54.8
Ever worked full time	83.9
Currently receiving government assistance	84.9
Has a high school diploma/GED	61.2
Has access to a car	38.6
Earnings in prior year	
\$0	38.1
\$1 to \$4,999	42.8
\$5,000 or more	19.4
<i>N</i>	406

Data on income were collected through administrative records. Quarterly earnings were collected from the Wisconsin state unemployment insurance system. Monthly welfare and food stamp income was collected through the state welfare and food stamp systems. Information about New Hope earnings supplement income was collected through New Hope administrative records. Data on use of the Earned Income Tax Credit were collected through the Wisconsin tax system. Information on all income sources was summed to create the independent variable *annual total income* over the two-year period. This measure is the average of total income in year 1 and total income in year 2. Measures of annual income from each individual source—*earnings, welfare, Food Stamps, earnings supplements*—were also created, representing average annual income received from each source across years 1 and 2.

*Well-being at year 2.* Four well-being measures were taken from the 2-year survey. *Goal efficacy* was measured by the State Hope Scale (Snyder et al., 1996) ( $\alpha = .82$ ). The scale's six items are listed in Appendix A. Response categories on a four-point scale ranged from *strongly disagree* to *strongly agree*. *Depressive symptoms* were measured with the Centers for Epidemiological Studies Depression Scale (CESD) ( $\alpha = .90$ )—the sum of 20 self-reported items about the last week, scored on a 0 (*rarely or none of the time*) to 3 (*most or all of the time*) point scale. Items included “I felt lonely” and “I had crying spells.” Studies have shown moderate correlations

between the CESD and clinical assessments of depression (see Radloff, 1977). *Parenting stress* was measured using a three-item scale ( $\alpha = .59$ ). Items appear in Appendix A. Response categories on a five-point scale ranged from *not at all true* to *very true*. To measure *material hardship*, respondents reported whether six different events had occurred in the last year. Events are listed in Appendix A. The number of events that occurred was summed.

*Covariates.* A number of baseline covariates were used in all analyses to adjust for potentially confounding factors. Baseline information was collected through surveys administered immediately prior to random assignment. Race/ethnicity was denoted by two dummy variables representing Black and Latino. Household structure was represented by two dummy variables: The first indicated two or more children in the household and the second indicated that the youngest child in the household was less than age two. Six dummy variables capture other respondent characteristics: Respondent was working full time at random assignment; respondent was receiving government assistance (either AFDC, Food Stamps, or SSI) at the time of random assignment; respondent had a high school diploma or GED; respondent had a car; and respondent's earnings in the year prior to random assignment (two dummy variables: \$1 to \$4,999 and \$5,000 and over, with no earnings as the reference category). A continuous measure of respondent age was also included as a covariate. Analyses also adjusted for no work over the 2-year follow-up, using 2-year survey responses.

## RESULTS

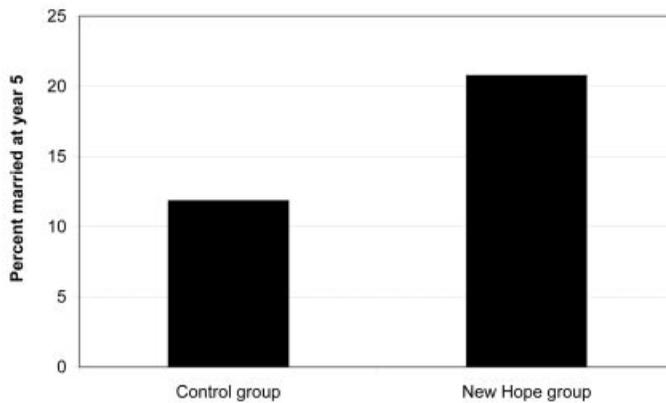
As shown in Table 2, 16.3 percent of never-married women were married at the 5-year follow-up. The majority of these marriages were also co-resident: 13.1 percent of never-married women were married and living with their spouse, while only 3.2 percent were married and living apart from their spouse. An additional 26.7 percent of the never-married sample members were in unmarried cohabiting relationships at the 5-year follow-up. As shown in Table 2, the majority (57 percent) of sample members were neither married nor in an unmarried cohabiting relationship five years after random assignment.

Using logit models, we examined the impact of the New Hope program on marriage at year five (see the panel labeled Model 1 in Table 3). For this analysis, and for all subsequent analyses described in the paper, we set our alpha level to .05 and report any results with  $p$ -values less than .05 as statistically significant. To guard against potential Type II errors, we also report results with  $p$ -values between .05 and .10, designating these results as *marginally significant*. Among never-married mothers, New Hope significantly increased marriage five years after random assignment ( $b = .71$ ;  $SE = .32$ ; odds ratio = 2.04;  $p < .05$ ). The odds ratio indicates that program group members were about two times more likely to marry than control group members. 20.7 percent of program group women were married at year 5, while only 11.8 percent of control group women were married at year 5 (see Figure 2), roughly a nine percent increase. The program had no effect on unmarried cohabitation ( $b = -.36$ ;  $SE = .26$ ; odds ratio = .69; n.s.).

We conducted a number of analyses to test the robustness of the New Hope impact on marriage. First, we examined marriage defined as with or without cohabitation. Although rates of marriage without cohabitation were too low to investigate an impact, we were able to investigate the program impact on married and living together. Changing the definition in this way did not alter the New Hope impact ( $b = .85$ ;  $SE = .42$ ; odds ratio = 2.33;  $p < .05$ ). Second, we examined the impact of

**Table 2.** Five-year marital status of women never-married at baseline.

	Percent (%)
Married	16.3
Living with spouse	13.1
Not living with spouse	3.2
Unmarried cohabiting relationship	26.7
Not married, not unmarried cohabiting	57.0
<i>N</i>	337



**Figure 2.** New hope impact on marriage at Year 5, for never-married women.

New Hope with and without adjusting for baseline covariates. We estimated New Hope impacts with baseline covariates, without baseline covariates, and with different sets of baseline covariates. The New Hope impact was not appreciably different in magnitude across these model specifications.

It is possible that the program’s impact on marriage among never-married mothers simply reflects a program impact on the sample overall and is not specific to the never-married subsample. To address this possibility, we also examined whether New Hope’s impact among never-married women differed from the program’s impact on marriage among ever-married women (ever-married includes those married, divorced, separated, or widowed at baseline). If the program impact is specific to the never-married subsample, we would expect the New Hope impact for that group to be significantly different from the impact on the ever-married subsample. To test the difference between program impacts for these two groups, we ran our logit model predicting marriage at year 5 for all sample members (the never-married sample plus 206 ever-married sample members) and included a program-by-never-married interaction term in the model. Results indicate that the difference in New Hope impacts on marriage for the never-married women and ever-married women was marginally significant ( $b = .74$ ;  $SE = .42$ ; odds ratio = 2.10;  $p < .10$ ). Among the ever-married women, 46.2

percent of the control group was married at year 5 and 43.2 percent of the New Hope group was married at year 5, a 3-percentage-point decrease. The New Hope impact on marriage among never-married sample members, therefore, represents an impact for this group rather than reflecting a program impact on sample members overall.

The never-married group and the ever-married group differed significantly on a number of baseline characteristics. Compared to the ever-married women, the never-married women were younger, earned less in the year prior to random assignment, and were more likely to be black, less likely to be Hispanic, less likely to have more than two children, more likely to have a child under age two, more likely to be receiving public assistance, and less likely to have access to a car. Given the differences between the groups, we sought to determine whether the differences in program impacts on marriage were due to baseline marital status (never married vs. ever married) or to the other baseline characteristics associated with marital status. To examine this, we added to our logit model a series of program-by-baseline characteristics interaction terms. If the differences were due to other baseline characteristics, after adding the additional interaction terms to the model, we would expect the size of the program-by-never-married interaction term to be reduced and the interaction to become non-significant. However, after adding the additional interaction terms to the model, the program-by-never-married interaction term was slightly larger and remained marginally significant ( $b = .95$ ;  $SE = .49$ ; odds ratio = 2.58;  $p = .05$ ).<sup>3</sup> Thus, the differences in impacts on marriage between the never-married and ever-married groups cannot be attributed to the groups' differences in other measured baseline characteristics. This result indicates that the New Hope impact on marriage among never-married women reflects an impact on that group, rather than a group defined by other correlated characteristics, such as age.

To examine potential mediators of the effect of New Hope on marriage, a set of variables measuring employment and income during years 1 and 2 were added to the logit model predicting marriage at year 5: wage growth; average job length; and annual total income. It should be noted that the associations between the mediators and marriage are non-experimental. Upon addition of these variables to the model (see panel labeled Model 2 in Table 3), the coefficient of the New Hope effect was reduced by 25 percent and became non-significant ( $b = .53$ ;  $SE = .35$ ; odds ratio = 1.70;  $p = .13$ ). When looking individually at the associations between the employment and income variables and marriage, annual total income had the strongest association with marriage. The association between annual total income and marriage at year 5 was marginally significant ( $b = 0.08$ ;  $SE = 0.04$ ; odds ratio = 1.08;  $p < .10$ ). For each annual increase of \$1,000 in total income, women were 1.08 times more likely to be married. None of the other employment and income variables were significantly related to marriage.

Next, a set of well-being measures was added to the logit model predicting marriage at year 5. Four variables were added to the model: goal efficacy; depressive symptoms; parenting stress; and material hardship. While the well-being variables as a set did not appear to further reduce the size of the New Hope effect on marriage (see panel labeled Model 4 in Table 3), material hardship was significantly related to marriage ( $b = -0.33$ ;  $SE = 0.17$ ; odds ratio = 0.72;  $p < .05$ ). The higher the level of material hardship experienced in year 2, the less likely women were to

<sup>3</sup> Only one of the covariate interaction terms—program-by-prior welfare receipt—was marginally significant ( $b = -1.12$ ;  $SE = .58$ ; odds ratio = 0.33;  $p = .05$ ). None of the other covariate interaction terms was statistically significant.

**Table 3.** Summary of logistic regression results predicting married at year five: Economic and well-being mediators.

	Model 1				Model 2				Model 3				Model 4			
	b	SE	Odds ratio	95% CI	b	SE	Odds ratio	95% CI	b	SE	Odds ratio	95% CI	b	SE	Odds ratio	95% CI
New Hope	0.71	0.32	2.04	[1.10 - 3.80] *	0.53	0.35	1.70	[0.85 - 3.40]	0.53	0.36	1.70	[0.84 - 3.44]	0.53	0.36	1.70	[0.84 - 3.44]
Average total income, yrs 1-2 (\$1,000s)					0.08	0.04	1.08	[1.00 - 1.16] †					0.07	0.04	1.07	[0.99 - 1.15]
Wage growth, yrs 1-2					0.08	0.06	1.09	[0.96 - 1.23]					0.07	0.06	1.08	[0.95 - 1.22]
Average job length, yrs 1-2					-0.04	0.03	0.96	[0.91 - 1.02]					-0.04	0.03	0.96	[0.91 - 1.02]
Goal efficacy, yr 2									0.01	0.36	1.01	[0.50 - 2.04]	0.00	0.37	1.00	[0.49 - 2.05]
Depression, yr 2									0.02	0.02	1.02	[0.99 - 1.06]	0.02	0.02	1.02	[0.99 - 1.06]
Parenting stress, yr 2									-0.08	0.25	0.93	[0.57 - 1.52]	-0.10	0.26	0.91	[0.55 - 1.50]
Material hardship, yr 2									-0.36	0.16	0.70	[0.51 - 0.96] *	-0.33	0.17	0.72	[0.52 - 0.99] *
N	337				293				291				290			

† = p < .10; \* = p < .05; \*\* = p < .01; \*\*\* = p < .001

Note: These analyses adjust for the following baseline covariates: race/ethnicity; number of children in the household; age of youngest child; working full time; receiving government assistance; high school diploma/GED; has car; earnings in prior year; age. These analyses also control for not working over the two-year follow up. Sample sizes vary due to missing data.

**Table 4.** Summary of logistic regression results predicting married at year five: Income source mediators

	Model 1			Model 2		
	b	SE	95% CI	b	SE	95% CI
New Hope	0.71	0.32	2.04 [1.09 - 3.79] *	0.47	0.36	1.6 [0.79 - 3.24]
Average job length, yrs 1-2				-0.04	0.03	0.96 [0.90 - 1.02]
Wage growth, yrs 1-2				0.08	0.07	1.09 [0.96 - 1.23]
Average earnings, yrs 1-2 (\$1,000s)				0.07	0.04	1.08 [0.99 - 1.17] †
Average welfare, yrs 1-2 (\$1,000s)				0.09	0.13	1.10 [0.85 - 1.42]
Average food stamps, yrs 1-2 (\$1,000s)				-0.04	0.20	0.96 [0.65 - 1.43]
Average earnings supplements, yrs 1-2 (\$1,000s)				0.20	0.15	1.23 [0.92 - 1.63]
N			337			293

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

Note: These analyses adjust for the following baseline covariates: race/ethnicity; number of children in the household; age of youngest child; working full time; receiving government assistance; high school diploma/GED; has car; earnings in prior year; age. These analyses also control for not working over the two-year follow up.

be married at year 5. Another model tested the well-being measures without the economic measures; only material hardship was significantly related to marriage ( $b = -0.36$ ;  $SE = 0.16$ ; odds ratio = 0.70;  $p < .05$ ) (see panel labeled Model 3 in Table 3).

A separate set of analyses examined sources of income as mediators of the New Hope impact on marriage (Table 4). Again, a set of variables was added to the logit model predicting marriage at year 5. In addition to average job length and wage growth, four income source variables replaced annual total income in the model: annual income from earnings; welfare; Food Stamps; and earnings supplements (including the New Hope supplement and the Earned Income Tax Credit). When this group of variables was added to the model (see panel labeled Model 2 in Table 4), the coefficient of the New Hope effect was reduced by 34 percent and became non-significant ( $b = .47$ ;  $SE = .36$ ; odds ratio = 1.60;  $p = .19$ ). When looking at the individual income sources, the association between annual earnings and marriage at year 5 was marginally significant ( $b = .07$ ;  $SE = .04$ ; odds ratio = 1.08;  $p < .10$ ). For each annual increase of \$1,000 in earnings, women were 1.08 times more likely to be married at year 5.

Table 5 shows the impact of the New Hope program on each hypothesized mediator. The impact of New Hope on each mediator was examined using OLS regres-

**Table 5.** New Hope impacts on economic and well-being mediators, for never-married mothers.

	Control group	Program group	Impact	N
Wage growth, yrs 1–2 (\$)	0.78	1.25	0.47 †	283
Average job length, yrs 1–2 (months)	11.5	11.8	0.3	284
Average total income, yrs 1–2 (\$)	13,298	14,299	1,001 †	337
Average earnings, yrs 1–2 (\$)	6,757	7,609	852	337
Average welfare, yrs 1–2 (\$)	3,219	2,925	-294	337
Average food stamps, yrs 1–2 (\$)	2,101	1,992	-109	337
Average supplements, yrs 1–2 (\$)	1220	1773	553 ***	337
Average quarterly employment, yrs 1–2 (%)	69.2	76.9	7.7 *	337
Depressive symptoms, yr 2	18.4	16.1	-2.3 †	295
Goal efficacy, yr 2	2.81	2.92	0.11 †	295
Parenting stress, yr 2	1.95	1.87	-0.08	291
Material hardship, yr 2	1.31	1.26	-0.05	298

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

Note: These analyses adjust for the following baseline covariates: race/ethnicity; number of children in the household; age of youngest child; working full time; receiving government assistance; high school diploma/GED; has car; earnings in prior year; age.

Sample sizes vary due to missing data.

sion, with baseline covariates included in each model. Among never-married mothers, the program significantly increased annual income from earnings supplements ( $b = 553.4$ ;  $SE = 140.2$ ;  $\beta = .20$ ;  $p < .001$ ). At levels of marginal significance, New Hope also increased annual total income in years 1 and 2 ( $b = 1001.7$ ;  $SE = 543.0$ ;  $\beta = .09$ ;  $p < .10$ ), wage growth ( $b = .47$ ;  $SE = .27$ ;  $\beta = .10$ ;  $p < .10$ ) and goal efficacy ( $b = .11$ ;  $SE = .07$ ;  $\beta = .10$ ;  $p < .10$ ), among never-married mothers. Among never-married mothers, New Hope also decreased depression, at a marginally significant level ( $b = -2.27$ ;  $SE = 1.31$ ;  $\beta = -.10$ ;  $p < .10$ ). Program group mothers had about \$1,000 more total annual income and about \$550 more earnings supplement income, on average over the 2-year follow-up, than control group mothers. In terms of wage growth, program group mothers experienced wage growth of almost \$.50 more per hour than control group mothers.

Did the economic effects of the New Hope program precede never-married women's entry into marriage, or did marriage precede changes in income? To answer this question regarding simultaneity, we first examined whether New Hope affected marriage rates at 2 years, and then compared impacts on administrative records-based employment, earnings and income in years 1 and 2 with those in years 3 through 5. As described above, very few of the never-married sample members got married by year 2. There was also no New Hope effect on marriage at this point ( $b = .22$ ;  $SE = .48$ ; odds ratio = 1.25;  $p = .64$ ; 6.3 percent of controls were married while 7.7 percent of program group members were married). In addition to increasing income over years 1 and 2, as reported above, New Hope also significantly increased average quarterly employment ( $b = .08$ ;  $SE = .03$ ;  $\beta = .12$ ;  $p < .05$ ), among never-married women. Over years 3 through 5, when the majority of the marriages occurred, New Hope did not significantly increase employment or earnings but did increase income at a marginally significant level ( $b = 1346$ ;  $SE = 796$ ;  $\beta = .09$ ;  $p < .10$ ). Thus, for never-married mothers, the significant program effect on marriage emerged at five years but not at two years and, New Hope's impact on income was sustained over the five-year follow-up. While some increases in income occurred over years 1 and 2 and before most of the marriages, it is not possible to determine whether the income increases over the last three years of the follow-up preceded marriages, due to lack of data on the exact date of the marriages that occurred between the 2-year and 5-year follow-ups.

## DISCUSSION

The results of this study indicate that the New Hope program significantly increased marriage five years after random assignment, among never-married mothers. Specifically, the marriage rate among New Hope program group members was 9 percentage points higher than the marriage rate among control group members. Twelve percent of controls were married at the five-year follow-up, while 21 percent of New Hope group members were married. The program had no impact on unmarried cohabitation. The program also increased income, wage growth, and goal efficacy among never-married mothers, and decreased depression. Material hardship was significantly negatively related to marriage. The associations between total income and income from earnings and marriage were positive and marginally significant. The New Hope impact on marriage among never-married mothers was robust to variations in model specification, making us more confident that the program impact is not spurious. This study provides evidence that an anti-poverty program that increases employment and income among never-married mothers can affect their entry into marriage.

How does New Hope's effect on marriage differ from those effects found in studies of other anti-poverty programs? In their meta-analysis, Gennetian and Knox (2003) found that, on average, welfare programs that provided earnings supplements but did not include time limits increased marriage among never-married mothers by 3.2 percentage points. However, none of the individual program impacts upon which this meta-analytic average was calculated were statistically significant. Three to three-and-a-half years after random assignment, the four programs included in that study increased marriage between 1.5 and 6.0 percentage points. The New Hope program impact described here was 8.9 percentage points, larger than impacts found in previous studies.

There are a number of potential reasons why the findings presented here differed from those reported in Gennetian and Knox. First, the follow-up lengths were different. Previous research has focused on short-term impacts, but this study examined the long-term impact on marriage. It may be that longer follow-ups are needed to detect effects on demographic outcomes. For example, two years after random assignment, only 7.0 percent of the never-married mothers had gotten married. Given the sample size, statistical power was inadequate to detect a program effect (though the size of the program-control group difference—.4 percentage points higher in the program group—suggests little impact on marriage at that point). Further research should examine the long-term effects of other types of anti-poverty programs on marriage among never-married mothers. Also, unlike the earnings supplement programs in the Gennetian and Knox meta-analysis, which did not include time limits on welfare receipt, the benefits of New Hope were time-limited. When they volunteered, individuals were told that the New Hope benefits would only be available for three years.

Another difference between the research presented here and previous research is that New Hope was provided outside of the welfare system and was voluntary. The community agency that administered the program did outreach in the two target neighborhoods, and individuals volunteered to participate (Brock et al., 1997). In contrast, Gennetian and Knox (2003) only examined programs provided within the welfare system. In general, across their set of programs, every person who came to the welfare office to apply for welfare or to have their case recertified was automatically randomly assigned to the program or control groups. Because the New Hope sample consists solely of volunteers, that sample differs from the samples of welfare recipients included in other studies. The barriers to marriage and the role of policies and programs in reducing those barriers may differ across different samples.

On the other hand, there are similarities between New Hope and the programs examined by Gennetian and Knox (2003). The main similarity is that both the earnings supplement programs examined by Gennetian and Knox and the New Hope program increased employment and income.

What factors might explain the New Hope impact on marriage? The results in this paper suggest that income may be a link between the program and marriage. We caution, however, that the associations found between income and marriage are non-experimental and therefore could be biased due to omitted variables or simultaneity. We considered using instrumental variables techniques to address bias in the association between mediators and marriage. However, this was not possible because the program affected multiple potential mediators and the program assignment variable could only be used to instrument a single mediator, violating the exclusion restriction assumption of instrumental variables analysis (Angrist, Imbens, & Rubin, 1996). While increases in income could help explain how the New Hope program affected

marriage, exactly how increased income might foster marriage is not clear. It may be that women with higher incomes are able to participate in different activities, exposing them to different men who they find more attractive as partners. Or, it may be that increases in income expand women's confidence and self-esteem, making them more attractive partners. Or, it may be that having more financial resources leads to higher relationship quality and, in turn, a greater willingness to marry. Analyses with the New Hope subsample who participated in a longitudinal ethnography indicated that more wage growth was associated with greater improvements in relationship quality between the two- and five-year follow ups (Gassman-Pines et al., forthcoming). However, the mechanisms linking income and marriage deserve further study.

Theorists who have written about the association between women's financial circumstances and their likelihood of marrying have disagreed about the direction of that association. Some propose that women's earnings should be negatively associated with marriage (Becker, 1981), while others argue that women's earnings should be positively associated with marriage (Oppenheimer, 1997; Sweeney, 2002). The results of this study align with the latter: Never-married women's annual income and earnings were positively related to their entry into marriage.

This research could have implications for programs and policy. Currently, experimental evaluations of marriage promotion programs are underway (Hershey, Devaney, Dion, & McConnell, 2004). All the programs will include instruction in relationship skills and some other family support services, which may include help for parenting skills, employment, and/or mental health problems. Some programs may address financial disincentives to marry. None of the experiments as of this writing appear to test programs that increase employment and income as a way of increasing marriage. Similarly, there are no current experiments testing the combination of relationship-focused skills training and financial incentives to work. Future research on the effects of marriage promotion programs could incorporate an examination of programs that increase employment and income alone and/or in combination with other marriage promotion strategies.

Some limitations of this study should be mentioned. First, this study included a relatively small sample of never-married mothers. Second, the current sample was likely less disadvantaged than a typical welfare population, due to New Hope's different eligibility requirements. Third, this study only examined the impacts of a single program. Fourth, the program operated in a single site, Milwaukee, Wisconsin, during a time of great welfare policy change. Future research should seek to replicate the long-term impact findings reported here across different types of programs in multiple sites and with larger samples. Fifth, non-experimental associations between hypothesized explanatory factors like income and earnings with marriage may have been subject to selection bias. Sixth, administrative records were used to measure income and earnings, potentially representing underestimates because informal income sources were not included. If the New Hope program altered the proportion of total income received from formal sources, New Hope impacts on income and earnings could reflect receipt of income from formal sources rather than actual changes in income. Finally, this sample includes only women. Because both women and men must agree to get married, it is also important to examine the men in relationships. To truly understand what leads to marriage, it is important to study couples. Future research on the effects of employment and anti-poverty policies on marriage should include both women and men. Understanding how programs affect couple dynamics will help to elucidate the connections between programs and marriage.

New Hope was an anti-poverty intervention that led to increases in employment and income for never-married women. The program also increased marriage five

years after random assignment. These results represent an initial step in understanding the long-term effects of different anti-poverty approaches on marriage.

## ACKNOWLEDGMENTS

This study was conducted as part of the Next Generation Project, which was supported by grants from the W. T. Grant Foundation, the John D. and Catherine T. MacArthur Foundation, and the David and Lucile Packard Foundation. This study was also supported by two awards made to the first author—a Ruth L. Kirschstein National Research Service Award predoctoral fellowship from the National Institute of Mental Health (F31-MH70128) and an Elizabeth Munsterberg Koppitz Graduate Fellowship from the American Psychology Foundation—and by a W. T. Grant Scholars award to the second author. The authors also acknowledge the support of the New York University Center for Research on Culture, Development and Education, which is funded by the National Science Foundation. We thank J. Lawrence Aber, Kathryn Edin, Lisa Gennetian, Robinson Hollister, Julie Kerksick, Edward Lowe, Sara McLanahan, Cynthia Miller, Rashmita Mistry, and Thomas Weisner for comments on previous versions of this paper.

Correspondence concerning this article should be addressed to Anna Gassman-Pines, Department of Psychology, New York University, 6 Washington Place, New York, New York 10003. E-mail: ag313@nyu.edu

*ANNA GASSMAN-PINES is a doctoral candidate in the Department of Psychology at New York University.*

*HIROKAZU YOSHIKAWA is an Associate Professor of Psychology and Public Policy at New York University.*

## REFERENCES

- Angrist, J.D., Imbens, J.W., & Rubin, D.B. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*, 91, 444–472.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26.
- Becker, G.S. (1981). *A treatise on the family*. Cambridge, MA: Harvard University Press.
- Blank, R.M. (2002). Evaluating welfare reform. *The U.S. Journal of Economic Literature*, 40, 1105–1166.
- Bos, J., Brock, T., Duncan, G.J., Granger, R., Huston, A.C., & McLoyd, V. (1999). *New Hope for people with low incomes. Two-year results of a program to reduce poverty and reform welfare*. New York: MDRC.
- Brock, T., Doolittle, F., Fellerath, V., & Wiseman, M. (1997). *Creating New Hope. Implementation of a program to reduce poverty and reform welfare*. New York: MDRC.
- Conger, R.D., Rueter, M.A., & Elder, G.H., Jr. (1999). Couple resilience to economic pressure. *Journal of Personality and Social Psychology*, 76, 54–71.
- Cox, M.J., Paley, B., Burchinal, M., & Payne, C.C. (1999). Marital perceptions and interactions across the transition to parenthood. *Journal of Marriage and the Family*, 61, 611–625.
- Dion, M.R., & Devaney, B. (2003). *Strengthening relationships and supporting healthy marriage among unwed parents (Building Strong Families Brief No. 1)*. Princeton, NJ: Mathematica Policy Research.

- Durkheim, E. (1960) [1893]. *The division of labor in society*. Glencoe, IL: Free Press.
- Edin, K., & Kefalas, M. (2005). *Promises I can keep: Why poor women put motherhood before marriage*. Berkeley, CA: The University of California Press.
- Ellwood, D.T., & Jencks, C. (2002). *The growing differences in family structure: What do we know? Where do we look for answers?* Unpublished manuscript.
- Fein, D.J., Burstein, N.R., Fein, G.G., & Lindberg, L.R. (2003). *The determinants of marriage and cohabitation among disadvantaged Americans: Research findings and needs*. Cambridge, MA: Abt Associates Inc.
- Fein, D.J., London, R.A., & Mauldon, J. (2002). *Welfare reform and family formation: Assessing the effects* (Welfare Reform and Family Formation Project Research Brief #1). Bethesda, MD: Abt Associates Inc.
- Fields, J., & Casper, L.M. (2001). *America's families and living arrangements: March 2000*. Current Population Reports, P20-537. U. S. Census Bureau: Washington, DC.
- Gassman-Pines, A., Yoshikawa, H., & Nay, S. (forthcoming). *Can money buy you love? The relationship between dynamic employment characteristics, the New Hope Program, and entry into marriage*. In H. Yoshikawa, T. Weisner, & E. Lowe (Eds.), *Making it work: Low-wage employment, family life and child development*. New York: Russell Sage Foundation.
- Gennetian, L.A., & Knox, V. (2003). *Staying single: The effects of welfare reform policies on marriage and cohabitation* (Next Generation Working Paper Series No. 13). New York: MDRC.
- Gibson, C., Edin, K., & McLanahan, S. (2004). *High hopes but even higher expectations: The retreat from marriage among low-income couples* (Center for Child Wellbeing Working Paper #03-06-FF). Princeton, NJ: Center for Child Wellbeing, Princeton University.
- Hershey, A.M., Devaney, B., Dion, M.R., & McConnell, S. (2004). *Building strong families: Guidelines for developing programs*. Princeton, NJ: Mathematica Policy Research.
- Huston, A.C., Miller, C., Richburg-Hayes, L., Duncan, G.J., Eldred, C.A., Weisner, T.A., et al. (2003). *New Hope for families and children. Five-year results of a program to reduce poverty and reform welfare*. New York: MDRC.
- Karney, B.R., Garvan, C.R., & Thomas, M.S. (2003). *Family formation in Florida: 2003 baseline survey of attitudes, beliefs, and demographics relating to marriage and family formation*. Gainesville, FL: University of Florida.
- Lichter, D.T., McLaughlin, C.D., Kephart, G., & Landry, D. (1992). *Race and the retreat from marriage: A shortage of marriageable men?* *American Sociological Review*, 57, 781–799.
- Lundberg, S., & Pollack, R.A. (1993). *Separate spheres bargaining and the marriage market*. *Journal of Political Economy*, 101, 988–1010.
- McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts? What helps?* Cambridge, MA: Harvard University Press.
- Murray, C. (2001). *Family formation issues and welfare reform*. In R. Haskins & R. Blank (Eds.), *The new world of welfare reform*, pp. 137–160. Washington, DC: Brookings Institution Press.
- Nock, S.L. (1995). *A comparison of marriages and cohabiting relationships*. *Journal of Family Issues*, 16, 53–76.
- Oppenheimer, V.K. (1994). *Women's rising employment and the future of the family in industrial societies*. *Population and Development Review*, 20, 293–342.
- Oppenheimer, V.K. (1997). *Women's employment and the gain to marriage: The specialization and trading model*. *Annual Review of Sociology*, 23, 431–453.
- Parsons, T. (1949). *The social structure of the family*. In R. Anshen (Ed.), *The family: Its function and destiny*, pp. 173–201. New York: Harper & Brothers.
- Radloff, L.S. (1977). *The CES-D scale: A self-report depression scale for research in the general population*. *Journal of Applied Psychological Measures*, 1, 385–401.

- Seefeldt, K.S., & Smock, P.J. (2004). Marriage on the public policy agenda: What do policy makers need to know from research? (National Poverty Center Working Paper Series, #04-2). Ann Arbor, MI: Gerald R. Ford School of Public Policy, University of Michigan.
- Smith, T.W. (1999). The emerging 21st century family (GSS Social Change Report No. 42). Chicago: University of Chicago, National Opinion Research Center.
- Smock, P.J., & Manning, W.D. (1997). Cohabiting partners' economic circumstances and marriage. *Demography*, 34, 331–341.
- Snyder, C.R., Sympson, S.C., Ybasco, F.C., Borders, T.F., Babyak, M.A., & Higgins, R.L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology*, 2, 321–335.
- Sweeney, M. (2002). Two decades of family change: The shifting economic foundations of marriage. *American Sociological Review*, 67, 132–147.
- U.S. Department of Health and Human Services, The Administration for Children and Families (2002). *Strengthening healthy marriages: a compendium of approaches*. Washington, DC: Author.
- Vinokur, A.D., Price, R.H., & Caplan, R.D. (1996). Hard times and hurtful partners: How financial strain affects depression and relationship satisfaction of unemployed persons and their spouses. *Journal of Personality and Social Psychology*, 71, 166–179.
- Waite, L.J., & Gallagher, M. (2000). *The case for marriage: Why married people are happier, healthier, and better off financially*. New York: Doubleday.
- Waller, M. (2001). High hopes: Unmarried parents' expectations about marriage at the time of their child's birth. *Children and Youth Services Review*, 23, 457–484.
- Xie, Y., Raymo, J., Goyette, K., & Thornton, A. (2003). Economic potential and entry in marriage and cohabitation. *Demography*, 40, 351–367.

## APPENDIX A

### Items for State Hope Scale, Parenting Stress Scale and Material Hardship Index

#### *State Hope Scale*

1. If I should find myself in a jam, I could think of many ways to get out of it.
2. At the present time, I am energetically pursuing my goals.
3. There are lots of ways around any problem that I am facing now.
4. Right now, I see myself as being pretty successful.
5. I can think of many ways to reach my current goals.
6. At this time, I am meeting the goals I have set for myself.

#### *Parenting Stress Scale*

1. I find myself giving up more of my life to meet my child's needs than I ever expected.
2. I feel trapped by my responsibilities as a parent.
3. I find that taking care of children is much more work than pleasure.

#### *Material Hardship Index*

In the past 12 months, has there been a time when you and your immediate family:

1. Were without telephone service for any reason?
2. Didn't pay the full amount of rent or mortgage?
3. Were evicted from your home or apartment for not paying rent or mortgage?
4. Had service turned off by the gas or electric company, or the oil company wouldn't deliver oil because payments were not made?
5. Had someone who needed to see a doctor or go to the hospital but didn't go?
6. Had someone who needed to see a dentist but didn't go?