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Maternal education preferences moderate the effects of mandatory employment and education programs on child positive and problem behaviors

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Abstract

Grounded in Person-Environment Fit Theory, this study examined whether low-income mothers' preferences for education moderated the effects of employment- and education-focused welfare programs on children's positive and problem behaviors. The sample included 1,365 families with children between ages 3 and 5 at study entry. Results 5 years after random assignment, when children were ages 8 to 10, indicated that mothers' education preferences did moderate program impacts on teacher-reported child behavior problems and positive behavior. Children whose mothers were assigned to the education program were rated by teachers to have less externalizing behavior and more positive behavior than children whose mothers were assigned to the employment program, but only when mothers had strong preferences for education.

In the last several decades, the United States welfare system has gone through reforms intended to promote economic self-sufficiency, including mandating participation in employment activities and instituting limits on lifetime welfare receipt. Policymakers, program administrators and researchers have been interested in the implications of these reforms both for targeted outcomes, such as the economic well-being of welfare recipients, and for non-targeted outcomes, such as the well-being of their children. Informed by Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1986, 1989), scholars have hypothesized that reforms mandating participation in employment and education activities may affect children's behavioral development through two sets of family-level mechanisms. First, improvements in maternal economic outcomes as a result of program participation are hypothesized to improve mothers' ability to invest financial resources in their children, reducing internalizing and externalizing problem behaviors and increasing positive behavior (Gershoff, Aber, Raver, & Lennon, 2007; Yeung, Linver, & BrooksGunn, 2002). Second, positive changes in maternal economic circumstances may be associated with reductions in family stress and improvements in parental well-being and parenting behaviors, thereby improving children's behavior (Chase-Lansdale et al., 2003; Hamilton, 2000; McGroder, Zaslow, Moore, & LeMenestrel, 2000; McLoyd, 1990; Morris, Huston, Duncan, Crosby, & Bos, 2001).

To explore these hypotheses, researchers have examined the impacts of welfare programs mandating maternal employment or education activities using large-scale random-assignment experiments that occurred in the pre-welfare reform era (Hamilton et al., 2001; McGroder et al., 2000). Founded on the premise that quick entry into employment fosters labor-force attachment, mandatory *employment* programs required welfare recipients to start

working right away, often with only a short period of job search. In contrast, mandatory *education* programs were founded on the premise that welfare recipients need to build educational skills to make gains in employment. They required welfare recipients to engage in education activities, including adult basic education, higher education or job training, before entering the labor force. Both programs were made mandatory by the use of sanctions; families risked losing some or all of their welfare benefit if they failed to meet program requirements.

Evidence from these experiments suggested that both kinds of programs were effective in increasing the activities they mandated (Hamilton, Brock, Farrell, Friedlander, & Harknett, 1997; Hamilton et al., 2001). Compared to a control group subject to existing Aid to Families with Dependent Children (AFDC) rules with no mandates, participants assigned to the employment program were significantly more likely to engage in job search activities and had significantly higher rates of quarterly employment and average yearly earnings. Likewise, participants assigned to the education program had significantly higher rates of participation in basic education and vocational training programs than participants in the control group. In two of the three study sites they also experienced increases in rates of receipt of a high school diploma or GED, and number of hours spent in the classroom. A comparison of the impacts of the two programs suggests that each was most successful in increasing the particular activities it mandated. For example, while participants in the employment program had small increases in basic education and vocational training as compared to the control group, the impacts were significantly larger in the education program. Likewise, participants in the education program experienced small increases in average quarterly employment and average yearly earnings, but impacts on these outcomes were larger for participants assigned to the employment program.

In contrast, effects of the employment and education programs on child positive and problem behaviors were small and inconsistent (Hamilton, 2000; McGroder et al., 2000; Morris et al., 2001). Two years after random assignment, effect sizes for impacts on parent-reported problem and positive behaviors ranged from .02 to .17 (Morris et al., 2001). Moreover, these impacts varied in magnitude and direction across the three sites. In Riverside, the impact of the employment and education programs on problem behaviors were small and non-significant (effect sizes ranged from .02 to .05). In Atlanta, the programs significantly reduced problem behaviors (effect sizes ranged from $-.10$ to $-.15$) but, in Grand Rapids, the programs increased problem behaviors (effect sizes ranged from 0.15 to .17, with only the latter reaching statistical significance). This pattern of effects persisted five years after random assignment for both parent- and teacher-reported behaviors (Hamilton et al., 2001).

One possibility for this pattern of findings is that overall program effects may be masking important subgroup differences between families. Recently, findings from other types of experimentally-evaluated welfare and anti-poverty programs have highlighted variation in program impacts for families with differing circumstances (Morris, Bloom, Kemple, & Hendra, 2003; Yoshikawa, Magnuson, Bos, & Hsueh, 2003). For example, Morris et al. found that the effects of a time-limited welfare program on middle-childhood behavior varied by families' initial risk for welfare dependency. Increases in behavior problems were found only for those families with low levels of risk for welfare dependency. Similarly, Yoshikawa et al. found that the economic and behavioral impacts of earnings-supplement policies varied by families' initial risk of being "hard-to-employ." For maternal employment and earnings, the largest increases were found among families who were considered to be moderately or highly hard-to-employ (in quartiles 3 and 4 of the distribution). Only children in families considered moderately hard-to-employ (3rd quartile) showed consistent improvements in behavioral outcomes. Children in highly hard-to-employ families (4th

quartile) actually experienced increases in problem behavior. Despite evidence that the impacts of welfare and anti-poverty policies vary for subgroups of families, little attention has been paid to developing theoretically grounded rationales for focusing on particular subgroups of families who may benefit most from specific policies.

This study seeks to begin filling that gap in the literature by using a Person-Environment Fit (P-E Fit) framework to identify theoretically relevant subgroups of families who may be differentially affected by mandatory welfare programs. Although it has yet to be applied to the study of these programs, P-E Fit Theory (Lewin, 1935; Moos & Lemke, 1983) may provide a useful theoretical framework for conceptualizing how mandatory welfare program impacts on maternal economic circumstances and child behavior might vary along certain key family circumstances. P-E Fit Theory proposes that a match between an individual's preferences and the demands of their environmental setting will lead to more favorable outcomes whereas a mismatch between individual preferences and setting demands will result in less favorable outcomes (Lerner, 1983; Moos, 1984). A number of review articles and meta-analyses have found support for the central tenets of P-E Fit Theory in the workplace (Kristof-Brown, Zimmerman, & Johnson, 2005; Kristof, 1996; Tinsley, 2000; Tranberg, Slane, & Ekeberg, 1993). These studies suggested that a fit between workers' desires and their occupational environments was related to higher job satisfaction and lower absenteeism and turnover. Research in other settings such as elderly housing facilities (Kahana, Lovegreen, Kahana, & Kahana, 2003), college dormitories (Moos, 1984; Moos & Lemke, 1983), and school classrooms (Fraser & Fisher, 1983) also provided support for the notion that a match between individual preferences and setting characteristics results in more positive outcomes.

This study utilized P-E Fit Theory to investigate whether the impacts of mandatory employment and education programs vary by maternal preferences. To explore this possibility, we examined whether a key individual preference for these settings – mother's initial beliefs about the usefulness of education and job training for getting a good job (hereafter labeled “education preferences”) – moderated program impacts on child positive and problem behaviors. Rather than exploring the impacts of each program relative to a control group, we contrasted the education program directly with the employment program. P-E Fit Theory hypothesizes that preferences are most important in settings in which demands are clear and enforced. Because activities in the employment and education program were clearly differentiated and mandated, a direct comparison of outcomes in the employment vs. the education program is the most precise empirical test of the theory. Since participants were randomly assigned to either the employment program, education program or control group, the experimental design is preserved.

We conceptualized strong education preferences to represent a match with the education program and a mismatch with the employment program. Previous research using a P-E Fit framework has found that when individual preferences match the demands of the setting, individuals experience improvements in the domains targeted by that setting (e.g. Fraser & Fisher, 1983) as well as increases in psychological and emotional well-being (Moos & Lemke, 1983). In the case of the welfare programs considered here, the theory would predict that a match between preferences and setting demands would lead to improvements in the programs' proximal targeted outcomes: increases in maternal employment and education, and decreases in welfare receipt. As described above, changes in maternal economic well-being are likely to influence child behavior through changes in family resources and in maternal psychological well-being, parental stress and parenting. Consequently, we predicted that child behaviors would improve when maternal education preferences matched program demands and worsen when maternal education preferences did not match program demands. We also began to explore potential mediating mechanisms, by examining whether

the program's proximal targeted outcomes improved when there was a match between education preferences and program assignment.

Method

Study Design

The mandatory employment and education programs under study operated as part of the National Evaluation of Welfare-to-Work Strategies (NEWWS), an evaluation of aspects of the 1988 Family Support Act. In three of the seven NEWWS sites – Atlanta, GA; Grand Rapids, MI; Riverside, CA – these two welfare programs were implemented and tested via random assignment. In the employment program, caseworkers emphasized immediate employment and encouraged participants to take any job that was available. In the education program, caseworkers emphasized and encouraged educational activities prior to employment. Education program participants were provided with considerably more flexibility than employment program participants: they could meet program requirements by participating in a variety of educational activities, including adult basic education, job training, vocational training and college coursework. In both conditions, the respective activities were made mandatory via sanctions (i.e., reductions in welfare for non-participation in targeted activities). Although sanction rates varied by site, between 9 and 42 percent of families were sanctioned in the first two years of follow up (Hamilton et al., 1997).

In addition to random assignment to the two programs, individuals were also randomly assigned to a third (control) condition consisting of existing AFDC rules, with no mandates for activity participation. In the current study, the control group is excluded from analyses and the two program approaches are compared directly to each other. This represents the strictest empirical test of P-E Fit Theory, which would predict differences in outcomes when programs are either in direct affinity or opposition to individual preferences.

Enrollment in NEWWS occurred in 1992 and 1993. Individuals were eligible if they had applied for or were receiving AFDC at the time of enrollment and if they were not exempt from participation due to illness or family burdens. Families with a child between 3 and 5 years at enrollment were chosen for the Child Outcomes Study (COS), and detailed developmental information was collected about one randomly selected 3–5 year old per family. Participant baseline data was collected prior to random assignment, and follow-up surveys by participants and children's teachers were conducted 2 and 5 years after random assignment (for further details, see McGroder et al., 2000 and Hamilton et al., 2001). This study focuses on data from the 5-year follow-up, when focal children were between 8 and 10 years old.

Sample

The sample for this study consists of 1,365 families: 604 randomly assigned to the employment program and 761 randomly assigned to the education program. Table 1 presents sample characteristics at baseline. The sample was relatively disadvantaged: three-fourths were long-term welfare recipients (lifetime welfare receipt of two years or longer); about half had a high school diploma; and about half had given birth for the first time as teenagers.

Measures

Descriptive statistics and correlations for main study measures are presented in Table 2.

Education preferences at baseline—Education preferences were measured using the average of two items ($r = .35$) that asked about mother's beliefs about the usefulness of

education and job training for getting a good job. These items were chosen because of their close conceptual relation to the stated goals of the education program vs. the employment program. On a 4-point scale from *disagree a lot* to *agree a lot*, individuals indicated their agreement with the following: “Going to a school that teaches basic reading and math would help me get a good job” and “Going to a job training program would help me get a good job.”

Child behaviors 5 years after random assignment—Mothers and teachers reported on children's behaviors using modified versions of the Social Skills Rating System (Gresham & Elliott, 1990). Mothers reported on children's behavior at home and teachers reported on children's behavior at school, on a 4-point scale ranging from *never* to *very often*. Both mothers and teachers reported on children's externalizing and internalizing behavior problems, and positive behaviors. Teachers also reported on children's school engagement. The externalizing subscale tapped acting out behaviors such as arguing and having temper tantrums (e.g., “Argues with others”) and included six items for parents ($\alpha = .78$) and five items for teachers ($\alpha = .89$). The internalizing subscale tapped withdrawn behaviors such as crying and seeming sad (e.g., “Appears lonely”) and included eight items for parents ($\alpha = .66$) and six items for teachers ($\alpha = .73$). The positive behavior scale tapped behaviors related to assertion, self-control and cooperation (e.g., “Easily joins others in ongoing play”) and included 33 items for mothers ($\alpha = .82$) and 24 items for teachers ($\alpha = .89$). School engagement was measured using an 11-item scale ($\alpha = .92$), including “This student shows eagerness to learn new things.” Because the teacher-reported positive behavior and school engagement scales were highly correlated ($r = .80$), they were combined into a single score representing teacher-reported positive behavior in school. As shown in Table 2, correlations between the externalizing, internalizing and positive behavior subscales were small to moderate within and across reporters.

Maternal economic outcomes during the 5 years following random assignment

Employment: Employment was derived from states' quarterly earnings reports, with respondents considered employed in any quarter that included a non-zero earnings amount. The measure used in this study is average quarterly employment, or the percentage of quarters that a respondent was employed during the 5 years following random assignment.

Welfare receipt: States' welfare systems reported monthly welfare amounts for each month of the 5 years following random assignment. We summed the monthly welfare receipt amount for each year and then averaged across the 5 years.

Education activities: Participation in education activities was measured from respondent survey reports 5 years after random assignment. The measure is a dichotomous indicator for ever participated in any education activities (adult basic education, GED preparation, ESL courses, or vocational training) during the 5 years following random assignment.

Baseline covariates—To improve precision, all analyses adjusted for a limited set of baseline characteristics assessed prior to random assignment: race and ethnicity; child age; child sex; mother is long-term welfare recipient (defined as two or more years on welfare); mother is currently employed; mother has high school diploma; mother's literacy test score; and site.

Analytic Plan

We conducted OLS regressions predicting each child behavior and targeted mediator from a program indicator variable (1=education program and 0=employment program), the measure

of education preferences, the interaction of program with education preferences, and the baseline covariates. The data were pooled across site (as mentioned above, dummy variables for site were included in all analyses). It should be noted that California regulations required that only recipients deemed in need of education be eligible for the education program. Thus, mothers in that condition in Riverside are more disadvantaged, on average, than those in the other conditions in Riverside, Atlanta and Grand Rapids (see Hamilton et al., 1997 for details).

Only 63% of the sample had teacher-reported data. Although the percentages of parent survey respondents with teacher-reported data did not vary significantly by experimental condition (64% in the employment program and 61% in the education program, $t = 1.01$), missing teacher reports were imputed using PROC MI in SAS. Multiple imputation has been shown to provide less-biased parameter estimates than other procedures (such as listwise deletion, pairwise deletion or imputation of means), even when data are not missing completely at random (Graham, 2009; Schafer, 1997). This procedure results in valid statistical inferences that properly reflect the uncertainty due to missing values. We used a Markov Chain Monte Carlo (MCMC) method for data with arbitrary missing values, which assumes that the data are from a continuous multivariate normal distribution, contain missing values that can occur on any variable, and that data are missing at random. We imputed all missing values and used a single chain to produce ten imputations. PROC MI completed 200 burn-in iterations before the first imputation, and 100 iterations between each imputation. The posterior mode (the parameter estimates that maximize the observed-data posterior density), computed from the EM algorithm, with a noninformative prior was used as the starting values for the MCMC process. Regressions were run separately for each data set produced by PROC MI and parameter estimates were combined using PROC MIANALYZE, which has been shown to produce less biased estimates than other approaches (Schafer, 1997).

Results

Table 3 presents results examining whether mothers' preference for education moderated the effects of program assignment on teacher- and parent-reported child externalizing, internalizing and positive behavior. Maternal education preferences significantly moderated the effect of program assignment on teacher-reported externalizing and positive behavior but not parent-reported behavior.

For illustrative purposes, the pattern of effects on teacher-reported child externalizing and positive behavior is displayed graphically in Figure 1. Consistent with P-E Fit Theory, when mothers were assigned to the employment program, there was a strong relation between mothers' education preferences and children's teacher-reported behavior: as mothers' preferences for education increased, children's teacher-reported externalizing behaviors increased and their positive behavior decreased. In contrast, when mothers were assigned to the education program, there was no relation between their preferences and their children's teacher-reported externalizing or positive behavior, as would have been predicted by P-E Fit Theory. However, when comparing the behavioral outcomes of children whose mothers indicated the same level of education preferences but who were assigned to different programs, differences in teacher-reported child behavior are consistent with P-E Fit Theory. For example, for mothers with education preferences 1 *SD* above the mean, the mean teacher-reported child externalizing behavior score for those assigned to the education program was .06 *SD* lower than those assigned to the employment program and the mean teacher-reported positive behavior was .15 *SD* higher than those assigned to the employment program. Conversely, for mothers with education preferences 1 *SD* below the mean, the mean teacher-reported child externalizing behavior score for those assigned to the education

program was .22 *SD* higher than those assigned to the employment program and the mean teacher-reported positive behavior was .12 lower than those assigned to the employment program.

Although participants were randomly assigned to programs, education preferences were not randomly assigned. As might be expected, education preferences were associated with other baseline characteristics. Results of an OLS regression predicting education preferences from the baseline characteristics indicated that respondents with higher education preferences were less likely to have a high school diploma ($b = -.11$; $SE = .05$; $p = .01$), had fewer barriers to participation ($b = -.03$; $SE = .01$; $p < .001$), lower literacy test scores ($b = -.002$; $SE = .001$; $p < .001$), and were more likely to be Hispanic (vs. White) ($b = .24$; $SE = .09$; $p = .01$). Because of those relations, it is possible that the pattern of effects actually reflected moderation by these other characteristics and not maternal preferences per se. To examine the robustness of our findings to this possibility, we interacted the program assignment variable with each of the baseline characteristics associated with education preferences. We then added the set of program-by-baseline characteristic interaction terms to the models predicting child behaviors. If the pattern of effects was due to the other baseline characteristics, the program-by-preferences interaction terms should become smaller and nonsignificant. Adding the additional interactions did not change the size or significance of the interaction term predicting the teacher-reported externalizing or positive behavior composite score (results available from first author).

Finally, to begin to understand potential mediating mechanisms, we examined maternal preference by program interactions predicting each of the targeted mediators. Results are shown in Table 4. There was a statistically significant interaction of education preferences and program assignment for average quarterly employment. Among those with high levels of education preferences, those assigned to the education program had higher average quarterly employment than those assigned to the employment program. Conversely, among those with low levels of education preferences, those assigned to the education program had much lower average quarterly employment than those assigned to the employment program.

Discussion

Utilizing a P-E Fit Theory framework, this study investigated whether mothers' preferences for education moderated the effects of mandatory employment and education programs on their children. Based on P-E Fit theory, we conceptualized strong education preferences to be in direct affinity with programs mandating education activities and in direct opposition to those mandating employment.

Our findings suggest that a match between maternal preferences and program assignment has important consequences for child behavior and maternal economic well-being. When mothers with strong preferences for education prior to random assignment were assigned to the education program, teachers reported that their children displayed better behavior – fewer externalizing behavior problems and more positive behavior at school – than the children of mothers with strong education preferences who were assigned to the employment program. Similarly, when they expressed a stronger preference for education, mothers who were assigned to the education program had higher levels of employment. Finally, a mismatch between maternal preferences and program assignment resulted in worse child behavior and lower levels of employment. In general, effect sizes for the significant pattern of effects on teacher-reported child behaviors and maternal employment were small, ranging from .06 *SD* to .22 *SD*. These effects sizes are not be surprising given all the potential influences on family economic well-being and child behavior (e.g., Bronfenbrenner, 1986, 1989).

Looking at the pattern of results displayed in Figure 1, it is clear that the differences between the two programs are generated by changes in child behavior for those with varying levels of education preferences who were assigned to the employment program, a somewhat surprising result. Across different levels of education preferences, there was little change in teacher-reported child behavior when mothers were assigned to the education program. However, for those assigned to the employment program, teachers reported worse child behavior as mothers' preference for education increased. One possible explanation for this finding comes from P-E Fit Theory. Some have suggested that the match between individual preferences and setting characteristics may have a larger impact on individual well-being when the demands of the setting are rigid than when they are flexible (Moos, 1981; Quick, Nelson, Quick, & Orman, 2001). Thus, we might expect mother's preferences for education to play a smaller role in child well-being when setting demands are more flexible. Indeed, the education program model was designed to be more accommodating than the employment model (Hamilton et al., 1997). While education was the programmatic emphasis, mothers could meet requirements through a variety of activities ranging in length, intensity and focus and then move into the labor force. This expanded range of options meant that the education program was less rigid and could be tailored to better meet the specific needs and preferences of each participant. In contrast, the employment program was more rigid, with only job search and employment considered as meeting the mandate, leading to a significant mismatch when those with strong preferences for education were assigned to that program. This pattern of results has important implications for current welfare policy, which only allows for participation in employment in order to meet mandates. Given that children's behavior was rated as the least positive when mothers had strong preferences for education but were assigned to the employment group, this "mismatch" of preferences and rigid setting demands may cause unintended negative outcomes for individuals currently in welfare programs.

Parental goals and preferences are not often investigated as moderators of parent employment or human capital programs, despite the fact that such programs address major life goals of parents in domains of work and learning. The current results provide some preliminary support for utilizing the P-E Fit framework, specifically related to parent preferences, to identify important subgroups of families for whom the effects of welfare programs may differ. In particular, they suggest that future research should further explore education preferences as a potentially important individual-difference factor, especially when it comes to the design and evaluation of anti-poverty programs and policies. Because respondents in the current study were randomly assigned to employment or education programs, and employment and education preferences were assessed prior to random assignment, our results are more robust to selection bias than much of the prior research using P-E Fit Theory.

It is interesting that significant interactions between maternal preferences and program assignment were found when predicting teacher-reported behaviors, but not parent-reported behaviors. This pattern of results is not altogether surprising, given that teachers and parents reported on child behavior in two different contexts. Indeed, research has shown that parent and teacher reports of child behavior do not align strongly (Manz, Fantuzzo, & McDermott, 1999). It is possible that mothers with strong preferences for education who were assigned to mandated education activities placed increased value and emphasis on school for their children. The reinforcement mothers received for their own views on education may have increased their expectations for their children's education, making education more salient within the family and affecting the way children behaved in the school setting. Previous studies have shown that parent expectations play a large role in students' engagement and achievement in school, particularly for low-income samples (Astone & McLanahan, 1991; Halle, Kurtz-Costes, & Mahoney, 1997; Zhan & Sherraden, 2003). An examination of this

potential mediating pathway was outside the scope of the present study, but should be considered in future research.

Some limitations of this study should be mentioned. First, while respondents were randomly assigned to programs, they were not randomly assigned to education preferences. The threat of selection bias is mitigated by the fact that education preferences were collected prior to random assignment. In addition, robustness analyses suggested that other baseline characteristics potentially associated with education preferences were not responsible for the pattern of results. Second, the current study was limited in the measures available to operationalize individual preferences for education and was not able to operationalize preferences for employment. Further research is needed to explore whether the results found here generalize to other preferences. Third, while we have sought to address this concern by conducting a theoretically-driven analysis, estimates of subgroup impacts can have statistical problems, such as reduced power and an increased role of chance in the results (Sleight, 2000). We believe this concern is mitigated by the consistency of results across child outcomes as reported by teachers and maternal economic outcomes gathered from administrative records. Fourth, because multiple imputation introduces uncertainty (Rubin, 1987) and because detecting interactions, in general, is subject to lower power than main-effect analyses (Cohen, Cohen, West, & Aiken, 2002), we did not have enough power to statistically test the indirect pathway linking a match between program assignment and education preferences to child behavior via maternal employment. Although our results suggest that maternal employment may be one pathway through which this effect occurs, future work should explore this and other possible indirect pathways further. Fifth, although the employment and education programs studied here were strongly implemented (Hamilton et al., 1997), it is not known to what extent individual caseworkers made decisions or exceptions based on individuals' preferences. Because of the important role caseworker support has been found to play in welfare recipients' earnings and job transitions over time (Godfrey & Yoshikawa, 2006, in press), future research should examine ways in which caseworkers assess low-income parents' preferences as they deliver programs. Additional research should also consider the current policy climate to understand the interaction among current policy features, such as time limits, and individuals' preferences. Finally, this sample reflects the welfare caseload in the early 1990s and results may not generalize to the current welfare population, which is likely to be more disadvantaged (Miller, 2002).

Despite these limitations, this study provides important initial evidence that maternal education preferences moderate the effects of welfare programs on children's behavior and on mothers' economic well-being. Our results suggest that P-E Fit Theory may indeed be a useful tool for identifying theoretically relevant subgroups of families for whom the effects of welfare and other anti-poverty programs may differ. Researchers should consider using this framework to guide studies of differential impacts of employment and human capital development programs on children in different families.

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Externalizing behavior

Positive behavior

Figure 1.
Program Assignment by Education Preference Predicting Teacher-Reported Externalizing Behavior and Positive Behavior

Table 1

Sample Characteristics at Baseline

	Overall sample	Employment program group	Education program group
Any earnings in prior year	30.0	30.4	29.6
Long term welfare recipient	75.0	76.0	74.1
Employed at random assignment	7.7	8.1	7.3
High school diploma	55.1	56.8	53.7
Ever Married	36.8	33.9	39.0
Youngest child less than 3	9.9	11.6	8.5
Teenage parent	48.3	46.7	49.5
Depressive symptoms	8.07 (3.50)	8.05 (3.46)	8.09 (3.54)
Barriers to participation	9.89 (2.91)	9.95 (2.83)	9.84 (2.98)
Number of children	2.24 (1.11)	2.21 (1.08)	2.26 (1.13)
TALS literacy score	277.57 (45.21)	278.66 (47.57)	276.71 (43.25)
Black	60.8	63.0	59.1
Hispanic	13.0	11.6	14.1
Maternal age	28.48 (5.58)	28.20 (5.35)	28.70 (5.74)
Child age	3.86 (0.82)	3.89 (0.81)	3.84 (0.82)
Child sex (male)	49.3	50.8	48.0

N = 1,365

Note: Percentage given for categorical variables; mean (SD) given for continuous variables

Table 2
Descriptive Statistics and Correlations for Program Assignment, Baseline Preferences, Child Behavior Outcomes and Mediators

	Mean	SD	Correlations										
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	
1. Program ^a	0.56	0.50											
2. Baseline education preferences	2.89	0.65	.03										
3. Teacher-reported externalizing behavior	4.00	3.75	.02	.06									
4. Teacher-reported internalizing behavior	5.12	3.30	.04	.02	.32***								
5. Teacher-reported positive behavior	16.88	6.21	.01	-.07	-.60***	-.41***							
6. Parent-reported externalizing behavior	4.55	2.92	-.00	-.03	.25***	.18***	-.26***						
7. Parent-reported internalizing behavior	8.14	3.43	-.02	.00	.16***	.12**	-.22***	.42***					
8. Parent-reported positive behavior	19.68	4.91	.02	.01	.17***	-.06	.23***	-.36***	-.05				
9. Ever participated in education (%)	39.63	48.92	.24***	.07*	-.06	.00	.01	.02	.04	.08**			
10. Average quarterly employment (%)	46.42	33.10	-.06*	-.05	-.04	-.04	.10**	-.12***	-.04	.07*	-.02		
11. Total welfare receipt (%)	13.754	10.769	.11***	.04	.03	.07	-.10**	.08**	.04	-.04	.12***	-.46***	

N = 1,365

^a 1=education program; 0=employment program

* $p < .05$;

**

$p < .01$;

$p < .001$

Table 3

Education Preference and Program Assignment Predicting Child Behavior

Teacher-reported child behaviors

	<u>Externalizing behavior problems</u>		<u>Internalizing behavior problems</u>		<u>Positive behavior</u>	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Education preference × Program ^a	−0.81	0.37 *	−0.21	0.30	1.31	0.60 *
Program ^a	0.29	0.25	0.32	0.24	0.11	0.38
Education preference	0.83	0.27 **	0.26	0.25	−1.49	0.46 **

Parent-reported child behaviors

	<u>Externalizing behavior problems</u>		<u>Internalizing behavior problems</u>		<u>Positive behavior</u>	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Education preference × Program ^a	−0.14	0.25	0.00	0.30	−0.82	0.43
Program ^a	0.13	0.17	−0.06	0.19	0.09	0.27
Education preference	0.05	0.19	0.14	0.22	0.66	0.31 *

N = 1,365

Note: All models adjust for the following covariates: site; race/ethnicity; child age; child gender; mother is currently employed; mother has high school diploma; mother's literacy test score.

^a 1=education program; 0=employment program

* *p* < .05;

** *p* < .01

Table 4

Education Preference and Program Assignment Predicting Mediators

	Ever participate in education, years 1–5 (%)		Average quarterly employment, years 1–5 (%)		Total welfare receipt, years 1–5 (\$)	
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>
Education preference × Program ^a	6.32	4.03	6.26	2.66 [*]	−1,428	796
Program ^a	24.58	2.56 ^{***}	−2.01	1.66	1,575	499 ^{**}
Education preference	2.02	2.95	−3.09	1.95	655	599

N = 1,365

Note: All models adjust for the following covariates: site; race/ethnicity; child age; child gender; mother is long-term welfare recipient; mother is currently employed; mother has high school diploma; mother's literacy test score.

^a1=education program; 0=employment program

^{*}*p* < .05;

^{**}*p* < .01;

^{***}*p* < .001