OPPORTUNITY NYC | FAMILY REWARDS

USING INCENTIVES TO CHANGE HOW TEENAGERS SPEND THEIR TIME

The Effects of New York City's Conditional Cash Transfer Program

Pamela Morris
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mdrc
BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

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Funders of the Opportunity NYC–Family Rewards Demonstration

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Overview

This report presents the results of an innovative study designed to provide a more detailed understanding of how parents and their teenage children were affected by the Opportunity NYC-Family Rewards program, a comprehensive conditional cash transfer program. The three-year program, launched by the Center for Economic Opportunity in the Mayor's Office of the City of New York in 2007, offered cash assistance to low-income families to reduce economic hardship. The cash incentives were tied to activities and outcomes in children's education, family preventive health care, and parents' employment, in the hopes of increasing families' "human capital" and reducing their poverty in the long term.

An evaluation by MDRC of the first two years of the Family Rewards program, published in 2010, found that it had positive effects on families' economic well-being and mixed effects on children's education, family health care, and parents' employment. For example, while the program did not affect school outcomes for younger children, it substantially boosted the achievement of a subset of older children who were better prepared for high school when they entered the program in the ninth grade. How the program affected teenagers and their parents is the focus of this study, which has been embedded in MDRCs continuing core evaluation of the program. This report addresses key "pathways" that may underlie any effects of the program on teenagers (such as changes in the way teenagers spent their time) as well as outcomes that were not targeted but that the program may have affected (such as teenagers' mental health, aggressive behavior, or substance use.)

Key Findings

Findings show that the Family Rewards program:

- Changed how teenagers spent their time. For the subgroup of academically proficient teenagers, it increased the proportion of those who engaged primarily in academic activities and reduced the proportion who engaged primarily in social activities;
- Increased parents' spending on school-related and leisure expenses and increased the proportion of parents who saved for their children's future education;
- Had no effects on parents' monitoring of their teenage children's activities or behavior and did not increase parent-teenager conflict or teenagers' depression or anxiety;
- Had no effects on teenagers' sense of academic competence or their engagement in school but substantially reduced their problem behavior, such as aggression and substance use;
- Did not reduce teenagers' intrinsic motivation by paying them rewards for school attendance and academic achievement.

This study of families with teenage children who participated in Family Rewards adds important information that will enhance understanding of the results of the core evaluation of the program. The next report on Family Rewards will examine the results after three years of the program; a final report will include two years of postprogram follow-up.

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Preface

What would happen if parents and their teenage children were offered cash incentives if the children went to school and passed their exams? Would teenagers spend more time on their schoolwork? Would offering incentives lead to tension and conflict between parents and children in an already challenging period in their lives? Would getting a reward for achievement in school reduce students' intrinsic motivation to learn?

Opportunity NYC-Family Rewards was a conditional cash transfer (CCT) program aimed to help families break the cycle of intergenerational poverty. CCT programs provide monetary incentives to families to take certain steps to invest in their own health, education, and economic potential. Inspired by similar initiatives in other countries, particularly Mexico's Oportunidades program, Family Rewards was sponsored by New York City's Center for Economic Opportunity in the Office of Mayor Michael R. Bloomberg and was delivered in six of New York City's highest-poverty communities from 2007 to 2010. MDRC is evaluating the program's effects using a randomized control trial research design. Our 2010 report on the program's early findings found that it increased families' economic well-being and had mixed effects — ranging from no effect to small positive effects — on children's education, family health care, and parents' work and training. Analysis of the longer-term impacts of the program is currently under way.

This particular study answers some intriguing questions about how the incentives played out in the daily lives of teenage children and their parents. The study surveyed a subset of families from the Family Rewards' core sample who had a teenage child and collected information both from parents and teenagers. It examines some key mechanisms that may underlie the program's effects on the targeted educational outcomes, such as whether there were changes in how teenagers spent their after-school and evening time. It also looks at how the program affected outcomes that were not targeted by the program, such as teenagers' aggression and use of drugs and alcohol, and whether the program produced unintended consequences, such as increasing parent-child conflict or teenagers' anxiety or depression.

We found some particularly interesting results. The program increased the proportion of teenagers who spent their time in academically oriented ways, especially among the students who were better prepared for high school when they entered the study — the same group who had better overall academic outcomes as a result of Family Rewards. Unfortunately, there was no similar shift toward spending time on academic activities among less-proficient students. And overall, students did not report being more engaged in school or having a greater sense of efficacy about their academic competence.

In addition, parents were more likely to save for their child's future education and spend more on educational resources. The teens in the program group reported lower levels of aggression and substance use than their peers in the control group, which could bode well for their long-term outcomes. And concerns that the program would cause greater parent-child conflict and anxiety among teenagers or reduce their intrinsic motivation to do well in school were not borne out.

This study makes a valuable contribution to the evaluation by shedding light on the ways in which the program functioned to effect change and suggesting some promising design directions for the next generation of CCT tests.

Gordon L. Berlin
President

Acknowledgments

This report reflects contributions from many organizations and individuals. Most of all, we thank the teenagers and parents in the Opportunity NYC-Family Rewards program and those members of the control group who participated in the larger core study, as well as those who participated in this child and family embedded study. They have allowed us to learn first hand from their experiences. We hope that the lessons from this and future reports will help strengthen future poverty reduction efforts and inform the design and evaluation of future conditional cash transfer programs.

Many staff members at Seedco and the Neighborhood Partner Organizations spent countless hours operating the program and collecting the essential data on families' participation and experiences. At Decision Information Resources, Inc., the survey firm, we'd like to thank Sylvia Epps, who coordinated the survey effort, and the field research team. External support came from Leslyn Hall, who helped design the survey instrument.

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The Authors

Executive Summary

In 2007, the Center for Economic Opportunity (CEO) in the Mayor's Office of the City of New York launched the Opportunity NYC-Family Rewards Demonstration (referred to as Family Rewards in this report), a conditional cash transfer (CCT) program. Family Rewards is based on the rationale of CCT programs such as Mexico's well-known Oportunidades model, but has been adapted in specific ways to meet the needs of families in New York City. CCT programs offer cash assistance to reduce immediate poverty among low-income families, while conditioning that assistance on parents' investment in their children's human capital (for example, adherence to well-baby visits, immunizations, or school attendance) with the goal of breaking the intergenerational cycle of poverty. This report presents the results of an innovative study designed to provide a detailed understanding of the ways in which families and their teenage children were affected by Family Rewards, one of the first comprehensive CCT programs to be tested in a developed country.

Family Rewards offered cash rewards in three key areas thought to be critical to families' short- and long-term success: education, health care, and parents' employment. The program was offered to low-income families with children in the fourth, seventh, or ninth grades in six of the poorest neighborhoods of New York City. Two national, New York-based nonprofit organizations — MDRC, a social policy and education research firm, and Seedco, a workforce and economic development organization — worked in close partnership with CEO to design the demonstration. The three-year program began in September 2007 and ended in August 2010.

MDRC is currently conducting an extensive evaluation of the Family Rewards program. To assess the effects, or "impacts" of the program, parents and their children were offered the opportunity to take advantage of the CCTs for three years as part of the program group, or to be part of a control group that was not offered the CCTs. The focus of the "core study" is on the program's implementation as well as its impacts across a wide range of outcome measures likely to be affected by the program. As described in the first report on interim findings from the core study,[1] most families received reward payments for meeting the conditions the program established, and these payments amounted to a substantial sum. As a result, Family Rewards was found to reduce current poverty and material hardship and produced a range of effects on a variety of outcomes across all three program domains (children's education, family health care, and parents' work and training). While the program did not improve school outcomes overall

[1] James Riccio, Nadine Dechausay, David Greenberg, Cynthia Miller, Zawadi Rucks, and Nandita Verma, *Toward Reduced Poverty Across Generations: Early Findings from New York City's Conditional Cash Transfer Program* (New York: MDRC, 2010).

for elementary or middle school students, it did increase academic outcomes for children who were better prepared for high school when they entered the study in the ninth grade. The children who entered the program in the ninth grade and their parents are the focus of this particular report.

The findings reported in this special "embedded" study add information about families' interactions with the CCT program in key areas by interviewing teenagers and their parents approximately two years after they enrolled in the program. More specifically, this report presents the impacts of the Family Rewards program on (1) the way teenagers spent their time; (2) the way teenagers and parents spent their money; (3) interactions between parents and teenagers; (4) teenagers' academic engagement, motivation, and sense of competence in school; and (5) teenagers' mental health and problem behaviors, such as aggression or substance use. As such, this report presents results on key "mechanisms of action" that may underlie any effects (or, indeed, lack of effects) of the program on targeted outcomes (such as test scores) as well as key outcomes that were not targeted but could be affected nonetheless by the program.

This study found that Family Rewards affected some of the channels by which the program is thought to operate. Most notably, Family Rewards changed how teenagers spent their time, increasing the proportion of teenagers who engaged primarily in academic activities. These impacts on the way teenagers allocated their time were concentrated among those who were more academically prepared for school at the start of the study. This same group of more proficient teenagers had experienced gains in academic outcomes as a result of the program.[2] Family Rewards also changed how teenagers and their parents spent their money. For example, parents enrolled in Family Rewards reported saving more for their children's future education. However, other pathways by which the program was thought to operate — for families (parent-teenager interactions) and for teenagers themselves (school engagement and academic efficacy) — were not affected by the program.

With regard to outcomes not targeted directly by the program, the news was quite positive. First, Family Rewards did not increase parent-teenager conflict or cause anxiety or depression among teenagers — among the potential unintended consequences of the program that were of concern. Second, Family Rewards was found to *reduce* teenagers' aggressive behavior and substance use.

The Family Rewards Program

Family Rewards provided cash payments to families who successfully carried out and documented a number of health, education, and work activities. The program offered a set of 22

[2]Riccio et al. (2010).

different incentives during its first two years and a smaller number in the third year, ranging in value from $20 to $600.[3] These incentives are described in Table ES.1. The incentives encouraged families to meet conditions in three domains: health, education, and work.

- **Health-focused conditions** included maintaining health insurance coverage for parents and their children as well obtaining age-appropriate preventive medical and dental checkups for each family member.
- **Education-focused conditions** included meeting goals for children's attendance in school, achievement levels on standardized tests, and other school progress markers, as well as parents' engagement with their children's education.
- **Workforce-focused conditions,** aimed at parents, included sustaining full-time work and participating in approved education or job training activities.

Every two months, the program verified that families had earned rewards by using a combination of automated data from city agencies and special forms, or "coupons," which the participants completed and submitted directly to the program. Some rewards were offered to the oldest children themselves (rather than to their parents), meaning that these children were in principle more directly exposed to incentives than younger children.

Study Design and Sample

The Family Rewards core evaluation involves approximately 4,800 families and 11,000 children who applied to the program. The program was targeted to families who lived in selected high-poverty community districts and who had incomes at or below 130 percent of the federal poverty level. Eligible families had to have at least one child in the fourth, seventh, or ninth grade. These grades were selected because they are at or near the start of critical transition points in children's educational careers. Once a family volunteered for the study, *all* children in the family who were school age or younger were eligible for the program. Through a lottery-like process, half of the applicant families were selected for Family Rewards and offered the incentives discussed above, and half were assigned to a control group that was not offered the incentives.

This report focuses on a subset of the children in the oldest age cohort (ninth grade at baseline) from the Family Rewards core study sample who were interviewed as part of the core

[3] In Year 3 of the program, some rewards were eliminated in response to preliminary findings, verification difficulties, and the need to ensure that funding could continue for a third year. See Chapter 1 in Riccio et al. (2010), pages 17-27, for a more extensive discussion of the rewards structure and changes that were made to it.

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Table ES.1

Schedule of Rewards

Activity	Reward Amount
Education incentives	
Elementary and middle school students	
Attends 95% of scheduled school days *(discontinued after Year 2)*	$25 per month
Scores at proficiency level (or improves) on annual math and English Language Arts (ELA) tests	
Elementary school students	$300 per math test; $300 per ELA test
Middle school students	$350 per math test; $350 per ELA test
Parent reviews low-stakes interim tests *(discontinued after Year 1)*	$25 for parents to download, print, and review results (up to 5 times per year)
Parent discusses annual math and ELA test results with teachers *(discontinued after Year 2)*	$25 (up to 2 tests per year)
High school students	
Attends 95% of scheduled school days	$50 per month
Accumulates 11 course credits per year	$600
Passes Regents exams	$600 per exam passed (up to 5 exams)
Takes PSAT test	$50 for taking the test (up to 2 times)
Graduates from high school	$400 bonus
All grades	
Parent attends parent-teacher conferences	$25 per conference (up to 2 times per year)
Child obtains library card (*discontinued after Year 2)*	$50 once during program
Health incentives	
Maintaining public or private health insurance *(discontinued after Year 2)*	
For each parent covered	Per month: $20 (public); $50 (private)
If all children are covered	Per month: $20 (public); $50 (private)
Annual medical checkup	$200 per family member (once per year)
Doctor-recommended follow-up visit *(discontinued after Year 2)*	$100 per family member (once per year)
Early-intervention evaluation for child under 30 months old, if advised by pediatrician	$200 per child (once per year)
Preventive dental care (cleaning/checkup)	$100 per family member (once per year for children 1-5 years old; twice per year for family members 6 years of age or older)
Workforce incentives	
Sustained full-time employment	$150 per month
Education and training while employed at least 10 hours per week *(employment requirement discontinued after Year 2)*	Amount varies by length of course, up to a maximum of $3,000 over three years

evaluation follow-up at the 18-month time point. A sample of 716 teenagers and their parents were selected from this group of families, and information was collected as part of this embedded study on 511 of the teenagers — those whose parents agreed to allow them to participate and who completed the survey.

A telephone survey was administered to the teenagers and their parents during the spring of their third year following random assignment (approximately 30 months after they entered the core study). The surveys collected information from teenagers on their spending and saving patterns, time use, level of conflict in discussions of various topics with their parents, various educational processes, mental health, and risky behaviors. The parent surveys collected information from parents on their spending and saving patterns, levels of monitoring their teenager, and level of conflict in discussions of various topics with their teenager.

Analyses presented in the current report focus on the differences between parents and teenagers assigned to the program group and those assigned to the control group in each of the areas of interest discussed above, controlling for a small set of pre-random-assignment characteristics to increase precision.[4]

Impacts of the Family Rewards Program

The evidence emerging from this embedded study is encouraging and shows that some behaviors of parents and children can be changed for the good by the CCT incentives offered by the Family Rewards program. And in cases where concerns were raised that the program might harm families (for example, increase parent-teenager conflict and anxiety on the part of the teenagers or decrease teenagers' intrinsic motivation), there was no evidence that Family Rewards had "unintended consequences." At the same time, a number of plausible processes that could be activated as a result of the program were not affected, highlighting areas that might be directly targeted in future interventions that include CCTs.

Five main conclusions emerge from this study of the Family Rewards program:

- **Family Rewards increased the proportion of teenagers who spent their time predominantly in academic activities.**

[4]A range of baseline covariates were included in all analyses. Covariates included average class size for grade level, ELA pretest score, math pretest score, school district, child gender, child race, special education status, the number of children in the household, whether English was spoken in the home, whether the family was a single-parent or two-parent family, parents' education, parents' employment status, an indicator for if there was no mother in the home, and an indicator for whether random assignment occurred after September 2007.

At the outset of Family Rewards, it was hoped that teenagers would spend more time in school-related activities (such as completing homework assignments and studying) and in achievement-oriented after-school activities (such as tutoring), because the outcomes of such behaviors (that is, test scores) were directly incentivized by the program.

Based on an analysis of teenagers' reported afternoon and evening activities, teenagers were divided into four groups: (1) those who spent their time predominantly in academically oriented activities (such as homework, after-school activities); (2) those who spent their time predominantly in socially oriented activities (such as hanging out with friends or family, talking or texting on the phone; (3) those who spent a large proportion of time watching TV and on the computer; and (4) those who spent the most time in maintenance activities (eating, napping, grooming, commuting) as well as had the highest level of work (chores or work for pay) of all the groups.

As shown in Figure ES.1, Family Rewards did indeed lead to a shift in the way teenagers allocated their time. More specifically, Family Rewards reduced the proportion of teenagers who spent their time predominantly in social activities (from 21 percent in the control group to 15 percent in the program group) and increased the proportion of teenagers who spent their time predominantly in academic activities (from 16 percent in the control group to 24 percent in the program group).[5] Separate analyses not shown here indicate that this finding was especially true for the teenagers who were better prepared for school based on their standardized test scores before random assignment; notably, it is these same teenagers who were found in the core study to demonstrate gains in test scores as a result of the Family Rewards program.

- **Family Rewards increased parents' spending on their teenagers and saving for their teenagers' future education, indicating positive effects on parents' investment in children's human capital.**

By providing cash transfers to families, Family Rewards should have resulted in greater spending and, perhaps, saving within families. However, whether or not those increased resources would be spent in ways that would benefit children's long-term human capital was an open question. Thus, the embedded study was intended to examine the impacts of the Family Rewards program on parents' and teenagers' spending and savings. Results are shown in Table ES.2. Parents in the program group had higher levels of monthly spending on academic activities and supplies (of $31) and on leisure and entertainment (of $27). Notably, Family Rewards also had a positive impact on parents' indicating that they were currently saving for their

[5]As discussed in the report, while Family Rewards did increase the proportion of teens in an academically oriented group, there were no impacts on the average amount of time spent in academic activities across all teenagers.

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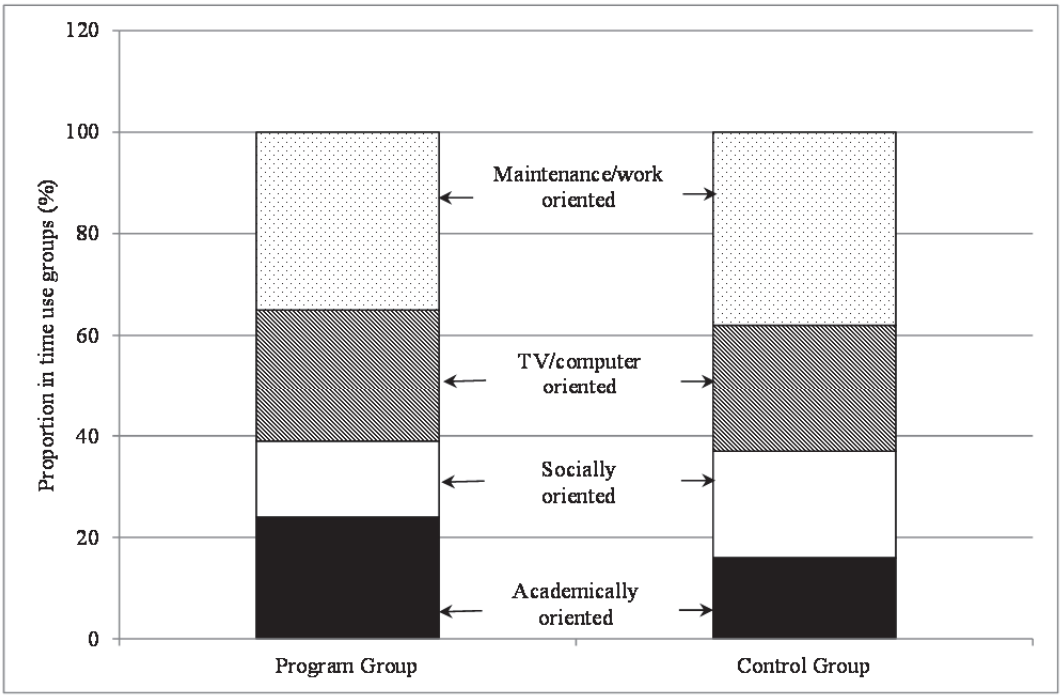
Figure ES.1

Impacts on Teenagers' Membership in Time Use Groups



SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTE: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family and sample members.

teenager's future education, a sizeable 12.6 percentage point increase. Teens in the Family Rewards group spent somewhat less on necessities and leisure activities than control group teens, perhaps because parents were spending more. Notably, these findings should be considered in relation to the timing of the embedded study survey, which was fielded in the late winter and spring, before the large rewards that teenagers could earn were available that year.

- **Family Rewards did not affect interactions between parents and teenagers, for better or for worse.**

Family Rewards was expected to change parent-teenager interactions in a number of ways. On the one hand, rewards might shape families' norms and expectations about children's participation in school and after-school activities, and, as a result, parents might spend more

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Table ES.2

Impacts on Spending and Saving and Parent-Teenager Interactions

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Spending and saving				
Total parent spending in 1 month[a] ($)				
Total spending	695	624	71 *	0.056
Productive spending	156	125	31 ***	0.007
Maintenance spending	434	418	16	0.552
Leisure spending	109	82	27 ***	0.008
Total teenager spending in 1 month[b] ($)				
Total spending	230	301	-72 **	0.019
Productive spending	34	38	-4	0.600
Maintenance spending	162	213	-51 **	0.020
Leisure spending	35	51	-16 *	0.070
Save for child's future education (%)	54.1	41.5	12.6 ***	0.005
Parent-teenager interactions				
Intensity level of family conflict (5 = angry, 1 = calm)				
Parent report	2.0	2.1	0.0	0.832
Teenager report	2.0	2.0	-0.1	0.296
Monitoring/disclosure				
Parental monitoring (5 = high monitoring)	4.3	4.3	0.0	0.928
Teenager disclosure to parent (5 = high disclosure)	3.9	3.8	0.1	0.495
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.
Rounding may cause slight discrepancies in calculating sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to the differences between outcomes for the program and control groups.
The p-value indicates the likelihood that the difference between the program and control group arose by chance.
[a]Spending on different items was reported for varying time periods ranging from 1 to 6 months. All numbers reported in this table are scaled to a 1-month interval. Productive spending = educational and other structured activities and materials; maintenance spending = basic necessities; leisure spending = "fun" money.
[b]Spending on different items was specifically asked about "in the past 4 weeks."

time being involved in and monitoring their children's activities in and out of school. At the same time, designers expressed concern that Family Rewards, by introducing incentives to families, might increase parent-teenager conflict during an already tumultuous period in families' lives. As shown in the bottom panel of Table ES.2, however, neither the expected benefits nor the concerns about the program were borne out. That is, parents were not found to

engage in greater monitoring of their teenager's behavior, as might be expected if Family Rewards was making large changes in how families interacted with their children. Neither was there any indication that Family Rewards increased parent-child conflict.

- **Family Reward did not affect teenagers' approaches to schooling, measures thought to mediate any benefits to teenagers' academic outcomes.**

A central premise of the Family Rewards program was that by offering educational incentives for attendance and achievement outcomes, children's interest in school and their sense of competence in academics would increase. At the same time, designers worried that by providing external rewards for academic achievement, the program could undermine intrinsic motivation. As shown in Table ES.3, students did not report greater engagement in school or a greater sense of efficacy about schoolwork. On the positive side, the provision of rewards did not appear to undermine intrinsic motivation, a central concern about this program at the outset.

- **Family Rewards reduced teenagers' problem behaviors, key outcomes not directly targeted by the intervention. No increases were found in teenagers' depression or anxiety.**

In addition to effects on the key targets of the program, this study was intended to address the possible effects of Family Rewards on teenagers' mental health and problem behaviors. The effects on these nontargeted outcomes are critical to understanding the broader effects of the program. As shown in the bottom panel of Table ES.3, teenagers in the program group reported lower levels of aggression (a 10 percentage point reduction) and lower levels of substance use (an overall reduction of 15 percentage points). They also reported reductions in alcohol and marijuana use of 14 and 7 percentage points, respectively (shown in Chapter 3 of the full report in Table 3.2), compared with their peers in the control group. Unlike the findings on academic outcomes and time use, these findings on substance use do not differ for children who were more or less academically proficient when they entered the study. These findings bode well for teenagers' longer-term outcomes. And as shown in the middle panel of Table ES.3, there are no statistically significant impacts on teenagers' depression and anxiety. Given concerns that parents would put undue pressure on their children and cause increased anxiety, this "null" finding should be seen as good news for the program.

The Opportunity NYC Demonstration: Family Rewards

Table ES.3

Impacts on Teenagers' Approaches to Schooling, Mental Health, and Problem Behaviors

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Approaches to schooling				
Think will finish college	85.8	84.3	1.6	0.608
School behavioral engagement	4.3	4.3	0.0	0.557
Academic efficacy	2.9	2.9	0.1	0.252
Motivation to learn (- 7 = extrinsic, 7 = intrinsic)	0.7	0.5	0.2	0.421
Mental health outcomes				
Depression (0 to 13 scale)	1.6	1.5	0.1	0.557
Anxiety (0 to 13 scale)	3.6	4.0	-0.4	0.148
Problem behaviors				
Delinquent behaviors (%)	46.1	52.7	-6.6	0.141
Aggressive behaviors (%)	14.1	24.1	-9.9 ***	0.004
Any substance use in past month (%)	17.5	32.6	-15.2 ***	0.000
Number of friends using substances in past month (1 = none, 2 = a few, 3 = some, 4 = most)	1.81	1.99	-0.19 ***	0.004
Sample size (total = 511)		262	249	

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

Conclusion

Family Rewards can be viewed as "CCT 1.0" in the United States. CCTs in Latin America and elsewhere in the global South have often been based on pilot studies meant to identify obstacles to take-up of health, nutrition and education services and to estimate the size and timing of incentives that would most efficiently and effectively improve use of these services. Because

Family Rewards was designed and implemented under a tight timeline, no such pilot studies were conducted in New York. Hence, the results of the evaluations of Family Rewards, both the core evaluation and this embedded study, can be used to design "CCT 2.0." For these reasons, this study is more of a theory-building and hypothesis-generating study than a theory-confirming, hypothesis-testing study.

As discussed in detail in Riccio et al. (2010), the Family Rewards program had modest impacts on high school students' academic achievement, but only for a portion of the sample (those children who scored at proficiency levels on baseline test scores). The results of this embedded study shed light on some hypotheses to explain why this occured. There were small changes in the amount of time students spent on academic activities in place of social activities, but only for the academically proficient teenagers. There were also changes in the way families allocated their increased financial resources. However, there are no statistically significant impacts on key hypothesized mediators among families, such as parental monitoring. Moreover, key student-level academic processes, such as perceived academic efficacy as well as academic expectations, were unchanged by the program.

These results lead to some suggestions for future work. First, more attention needs to be paid to redesigning incentives that would be effective for nonproficient teenagers. Second, future CCT initiatives in the United States also might consider redesigning incentives to directly target pathways of influence in order to produce larger and more sustained impacts on outcomes. For example, rather than incentivizing academic achievement as measured by standardized tests, rewards could offer students incentives for grade point averages or homework. Or they could encourage students to attend academic tutoring programs or to join academic clubs, which have been shown to improve academic achievement and might change the way students approach schooling more effectively.[6]

It will be critical to examine the effects of the Family Rewards program in the long term. The effects on proficient students' activity participation and on parents' savings for their children's future education, combined with the reductions in teenagers' aggression and substance use, point to potential long-term benefits of the program for teenagers as they move into adulthood. Future reports on this study will present findings on the program's impacts at later points in time — one will examine impacts three years after random assignment, around the time that the program itself was ending, and the final report will examine results over a five-year follow-up period, including two years after the program ended. The postprogram follow-up period will allow the evaluation to determine the long-term implications of the findings from this embedded study.

[6]J. D. Coie and G. Krehbiel, "Effects of Academic Tutoring on the Social Status of Low-Achieving, Socially Rejected Children," (*Child Development* 55:1465-1478 [1984]).

Chapter 1

Introduction

Background

In 2007, the Center for Economic Opportunity (CEO) in the Mayor's Office of the City of New York mounted Opportunity NYC-Family Rewards (referred to as Family Rewards in this report), a conditional cash transfer (CCT) program. Family Rewards was based on the rationale of CCT programs such as Mexico's well-known Oportunidades model but was adapted in specific ways to meet the needs of families in New York City. CCT programs offer cash assistance to reduce immediate poverty among low-income families, while conditioning that assistance on parents' investment in their children's human capital (for example, adherence to well-baby visits, immunizations, or school attendance) with the goal of breaking the intergenerational cycle of poverty. There is evidence that such programs have had some success in developing countries.[1] However, Family Rewards was the first comprehensive CCT initiative implemented and tested in a developed country.

Family Rewards offered cash rewards in three key areas thought to be critical to families' short- and long-term success: children's education, family preventive health care, and parents' work and training. The program targeted low-income families with children in the fourth, seventh, and ninth grades (but all eligible children in the family were enrolled, regardless of their grade level) in six of the poorest neighborhoods of New York City. MDRC, a nonprofit social and education policy research firm, designed and is conducting a rigorous random assignment evaluation of the program, in which parents and their children were offered the opportunity to take advantage of CCTs for three years or to be part of a control group that was not offered CCTs. The three-year program began in September 2007 and ended in August 2010.

This report presents the results of a "child and family embedded study" — that is, a study of teenagers and their parents embedded in the core evaluation being conducted by MDRC. The core evaluation represents an ongoing and comprehensive study of the effects of Family Rewards on families. The focus of the core study is on the program's implementation as well as its effects, or "impacts" across a wide range of outcome measures likely to be affected by the program. Data were gathered from three key sources of information: (1) administrative sources of data (school records, welfare benefits, unemployment insurance records); (2) a survey of parents; and (3) qualitative interviews conducted with parents and their teenage

[1] Fiszbein and Schady (2009).

children participating in the Family Rewards program. Information from the core study has been released in a series of early reports on the project.[2]

As described in the first report on interim findings from the core evaluation,[3] most families received reward payments and a substantial amount of money for meeting the conditions the program established. Rigorous analyses comparing the outcomes of families randomly assigned to the Family Rewards program with those of families assigned to the control group show that Family Rewards reduced current poverty and material hardship. It also produced a range of effects on a variety of outcomes across all three program domains (children's education, family preventive health care, and parents' work and training). Impacts on academic outcomes for children were concentrated among the oldest children — those in ninth grade who are the focus of this report — and among these students, those who were most prepared academically at the start of the study. Analysis of the longer-term effects of the program is currently under way.

Current Study

This embedded study adds information in a number of key areas of families' lives by interviewing the oldest of the focal children — those who were in ninth grade when they entered the Family Rewards core study — as well as their parents, two years after they entered the study. More specifically, this report presents the impacts of the Family Rewards program on (1) the way teenagers spent their time; (2) the way teenagers and parents spent their money; (3) interactions between parents and teenagers; (4) teenagers' academic engagement, motivation, and sense of competence in school; and (5) teenagers' mental health and problem behaviors (such as aggression and substance use). As such, this report presents results on key "mechanisms of action" that may underlie any effects (or indeed, lack of effects) of the program on targeted outcomes (such as test scores) as well as key outcomes that were not targeted but that may be affected nonetheless by this program (such as problem behaviors). Indeed, this study was conceived to test those processes within families and children that might represent key pathways of influence of the program. The hope was that the information from this study might shed light on processes underlying any positive effects of the program as well as potentially countervailing influences that might explain neutral effects on targeted outcomes.

As mentioned above, the core evaluation found impacts on academic outcomes for the ninth-grade children who were most prepared academically at the start of the study.[4] Findings from this embedded study show that Family Rewards affected some but not all of the channels

[2]Riccio et al. (2010); Greenberg, Dechausay, and Fraker (2011).
[3]Riccio et al. (2010).
[4]Riccio et al. (2010).

by which the program is thought to operate. Most notably, Family Rewards changed how teenagers spent their time, increasing the proportion of teenagers who engaged primarily in academic activities. These impacts on time use were especially pronounced for those who were more academically prepared for school at the start of the study. Family Rewards also changed how teenagers and their parents spent their money. For example, parents enrolled in Family Rewards reported saving more for their children's future education. However, other mechanisms by which the program was thought to operate — both for families (parent-teenager interactions) and for teenagers themselves (school engagement and academic efficacy) — were not affected by the program.

With regard to outcomes not targeted directly by the program, the news was quite positive. First, Family Rewards did not adversely affect outcomes such as mental health that were of concern as potential unintended consequences of the program. Second, Family Rewards was found to *reduce* teenagers' aggressive behavior and substance use, which may bode well for their longer-term outcomes.

In the next section of this chapter, the Family Rewards program is placed in the context of research on other CCT programs, more specifically, and financial incentive programs, more broadly. Following this discussion, information is presented on the operation of the Family Rewards program and the interim impacts from the core evaluation, as context for understanding the findings presented here. Turning to the current study, the theory of change underlying this embedded study and an overview of the sampling and analytic approach for the study are presented. Subsequent chapters present findings from this embedded study.

Placing the Family Rewards Program in Context

Comprehensive CCTs have been developed and implemented over the last 15 years, first in Latin America and increasingly in Africa and Asia. In their review of the first wave of well-evaluated CCTs, Fiszbein and Schady (2009) concluded that CCTs can reduce poverty, increase the use of health, nutrition, and education services, and improve health outcomes, especially in early childhood. But there is less evidence that CCTs have an impact on children's learning and academic achievement, despite their positive impacts on school enrollment and attendance.

Comprehensive CCTs are one variant of the broader use of financial incentives to change behavior. Other types of financial incentives designed to change the health, education and/or work behaviors, and outcomes of low-income people also have been evaluated over the last two decades. Considerable variation exists among these nonholistic incentive systems. For example, most target change in only one domain (such as health, education, or work), some use noncash incentives (for example, a time-deferred scholarship), and the value of the incentives can vary widely. And just as the target and design of the incentives vary, so too do the results.

Conceptually, one would not expect domain-specific incentives of less value to have the same impact on behavior and outcomes as incentive systems that target several domains and are of more value. Thus, comprehensive CCTs are expected to have more synergistic effects across several domains of behaviors and outcomes.

This broader literature on the use of financial incentives to motivate change in the health, education, and work behaviors and outcomes of low-income populations can serve as a useful context within which to discuss the design and impact of Opportunity NYC-Family Rewards.

Family Rewards can be viewed as "CCT 1.0" in the United States. CCTs in Latin America and elsewhere in the global South have often been based on pilot studies meant to identify obstacles to take-up of health, nutrition, and education services and to estimate the size and timing of incentives that would most efficiently and effectively improve use of these services. Because Family Rewards was designed and implemented under a tight timeline, no such pilot studies were conducted in New York. Hence, the results of the evaluations of Family Rewards, both the core evaluation and this embedded study, may be used to design "CCT 2.0." Indeed, that is just what is happening. New York City's CEO and MDRC are designing and launching a second-stage version of Family Rewards with funds from the White House's Social Innovation Fund, as part of MDRC's and CEO's Social Innovation Fund Project. For these reasons, this embedded study should be viewed more as a theory-building and hypothesis-generating study than a theory-confirming, hypothesis-testing study. This issue will be discussed further in the conclusion.

The Operation of the Family Rewards Program

The Family Rewards Demonstration provided cash payments to families who successfully carried out and documented a number of health, education, and work activities. The demonstration was one of 40 initiatives sponsored by New York City's CEO, a unit within the Office of Mayor Michael R. Bloomberg that is responsible for testing innovative strategies to reduce the number of New Yorkers who are living in poverty. Its broad origins were in the CCT movement, which has demonstrated success in lower- and middle-income countries in improving human capital and reducing hardship. Two national, New York-based nonprofit organizations — MDRC, a nonpartisan social policy and education research firm, and Seedco, a workforce and economic development organization — worked in close partnership with CEO to design the demonstration. Seedco, together with a small network of local community-based organizations,

operated Family Rewards, while MDRC managed the overall demonstration and is conducting the evaluation. A consortium of private funders supported the project.[5]

Family Rewards offered a set of 22 different incentives during its first two years and a smaller number in the third year, ranging in value from $20 to $600.[6] These incentives are described in Table 1.1. These incentives encouraged families to meet conditions in three domains: education, health, and work. For example, education rewards for younger students involved $25 per month for attending 95 percent of scheduled school days, $25 per conference for one or both parents to attend parent-teacher conferences, and $300 to $350 per exam for passing standardized tests in English Language Arts (ELA) or in math, or for demonstrating improvement in them. For high school students, the rewards were higher. They involved $50 per month for attendance, $600 for accumulating sufficient credits to move into the next grade, $600 for each New York State Regents exam passed (a standardized test tied to graduation), $50 for taking the Preliminary SAT (PSAT), and $400 for graduating from high school. Rewards for health activities included payments for going to the dentist, for annual medical checkups, and for follow-up visits recommended by physicians. Regarding work, under the theory that full-time work was necessary to help families escape from poverty, families were given $150 per month for working at least 30 hours a week for six of eight weeks and a reward for completing training, depending on the duration of the class.

Every two months, Seedco verified that families had earned rewards by using a combination of automated data from city agencies and special forms, or "coupons," which the participants filled out and submitted directly to the program. Operators then initiated a process of transferring payments electronically into participants' bank accounts or into accounts that operate more like gift cards, which were set up depending on the participants' preference when they entered the program. Reward payments were then made, and families could access their money at any time. A significant feature of implementation was that most rewards for the older children went directly into their own accounts, meaning that these children were, in principle, more directly exposed to incentives than younger children (whose parents received rewards for their achievement). This cycle of completing activities, submitting any relevant coupons, verification by program staff, and payment to the participant was repeated every two months.

[5]The funders include Bloomberg Philanthropies, The Rockefeller Foundation, The Starr Foundation, the Open Society Institute, the Robin Hood Foundation, the Tiger Foundation, The Annie E. Casey Foundation, American International Group, the John D. and Catherine T. MacArthur Foundation, and New York Community Trust.

[6]In Year 3 of the program, some rewards were eliminated in response to preliminary findings, verification difficulties, and the need to ensure that funding could continue for a third year. See Chapter 1 in Riccio et al. (2010), pages 17-27, for a more extensive discussion of the rewards structure and changes that were made to it.

The Opportunity NYC Demonstration: Family Rewards

Table 1.1

Schedule of Rewards

Activity	Reward Amount
Education incentives	
Elementary and middle school students	
Attends 95% of scheduled school days *(discontinued after Year 2)*	$25 per month
Scores at proficiency level (or improves) on annual math and English language arts (ELA) tests	
Elementary school students	$300 per math test; $300 per ELA test
Middle school students	$350 per math test; $350 per ELA test
Parent reviews low-stakes interim tests *(discontinued after Year 1)*	$25 for parents to download, print, and review results (up to 5 times per year)
Parent discusses annual math and ELA test results with teachers *(discontinued after Year 2)*	$25 (up to 2 tests per year)
High school students	
Attends 95% of scheduled school days	$50 per month
Accumulates 11 course credits per year	$600
Passes Regents exams	$600 per exam passed (up to 5 exams)
Takes PSAT test	$50 for taking the test (up to 2 times)
Graduates from high school	$400 bonus
All grades	
Parent attends parent-teacher conferences	$25 per conference (up to 2 times per year)
Child obtains library card (*discontinued after Year 2)*	$50 once during program
Health incentives	
Maintaining public or private health insurance *(discontinued after Year 2)*	
For each parent covered	Per month: $20 (public); $50 (private)
If all children are covered	Per month: $20 (public); $50 (private)
Annual medical checkup	$200 per family member (once per year)
Doctor-recommended follow-up visit *(discontinued after Year 2)*	$100 per family member (once per year)
Early-intervention evaluation for child under 30 months old, if advised by pediatrician	$200 per child (once per year)
Preventive dental care (cleaning/checkup)	$100 per family member (once per year for children 1-5 years old; twice per year for family members 6 years of age or older)
Workforce incentives	
Sustained full-time employment	$150 per month
Education and training while employed at least 10 hours per week *(employment requirement discontinued after Year 2)*	Amount varies by length of course, up to a maximum of $3,000 over three years

One notable feature of Family Rewards was its "incentives only" design. As mentioned, the program was designed to test the feasibility of a model that did not rely on services, so as to devote more resources directly to low-income families and to make it potentially possible to replicate the program on a larger scale. After participants were recruited by community-based organizations (known as Neighborhood Partner Organizations, or NPOs), they were asked to return for orientations during which they were introduced to the incentives and assisted in creating new bank accounts or linking existing accounts to program payments. However, after these orientations, the participants had no mandated contact with Family Rewards. They received mailings related to their bimonthly program earnings and were targeted by marketing efforts that highlighted eligible reward activities in materials produced by an advertising agency. They had access to a Web site and received automated and staffed reminder calls. Participants were also invited to attend topical workshops and could call either the NPOs or a centralized "helpline" during extended business hours for help with problems related to payments or for advice about services in the community. However, workshops were generally underattended, and participants used the NPOs infrequently as a referral resource. As a result, participants' contact with the program could be quite limited — it was, in fact, possible for families to receive rewards with little contact.

Core Evaluation: Design and Early Findings

The Family Rewards core evaluation involves approximately 4,800 families and 11,000 children who applied to the program. The program was targeted to families who lived in selected high-poverty community districts and who had incomes at or below 130 percent of the federal poverty level. Eligible families had to have at least one child in the fourth, seventh, or ninth grade. These grades were selected because they are at or near the start of critical transition points in children's educational careers. Once a family volunteered for the study, *all* children in the family who were school age or younger were eligible for the program. Through a lottery-like process, half of the applicant families were selected for Family Rewards and offered the incentives discussed above, and half were assigned to a control group that was not offered the incentives.

Early results reported in March 2010 showed that despite an extraordinarily rapid start-up and early challenges, Family Rewards was operating largely as intended by its second year. Although many families struggled with the complexity of the program, most received a large amount of money for meeting the conditions it established — on average, families received approximately $6,000 during the first two years of the program. During the period covered by the report, Family Rewards reduced poverty and hardship and produced a range of effects on a variety of outcomes related to health care, parents' work and training, and children's education.

Interim impacts of the Family Rewards program from the core study (the estimated difference between those assigned to the program group and those assigned to the control group, controlling for a small set of pre-random-assignment covariates) are summarized in Table 1.2. (See Box 1.1 for information on how to interpret the tables that show estimated program impacts presented throughout this report). As shown in Table 1.2, Family Rewards reduced by nearly 11 percentage points the proportion of families with income at or below the poverty line, reduced by nearly 8 percentage points the proportion of families who reported difficulty making ends meet, and increased by 18 percentage points the proportion of families who reported that their financial situation was better than the previous year.

Family Rewards decreased by about 2 percentage points the proportion of parents who had worked, according to unemployment insurance (UI) records. But it increased by nearly 6 percentage points those who reported working, according to a survey that was conducted at 18 months. No impacts were found on earnings from UI records. The discrepancy between these two assessments may suggest that there was a very small disincentive to work, at least in jobs captured by the UI system, because of the program's additional income support, but also that some Family Rewards participants may have been additionally encouraged to do work that was not captured in the UI records (including self-employment). With regard to health outcomes, Family Rewards produced no effects on some outcomes, especially when base outcomes were very high, and had small to moderate effects on other outcomes. For example, Family Rewards increased by nearly 10 percentage points the proportion of parents who had two dental checkups and reduced by almost 3 percentage points the proportion of children who had a period with no health coverage. It also had positive impacts on parents' self-rated health.

Finally, Family Rewards did not improve school outcomes for elementary or middle school students related to school attendance rates or annual standardized test scores in math and English Language Arts during the first two years of the program. Data from the 18-month parent survey indicate that Family Rewards increased the likelihood that middle school students would be involved in school-related activities, such as programs to help with schoolwork or homework, school clubs, school musical programs, and dance or art lessons (not shown in Table 1.2). However, there is no indication so far that these extra efforts have translated into higher academic achievement for these children.

For the oldest children, however, the impacts of the program are somewhat different than for their younger peers. Although the program had few effects on school outcomes for high school students overall, Family Rewards substantially improved the educational achievement of high school students who scored at or above the basic proficiency level on their eighth-grade standardized tests before random assignment. This group of better-prepared high school students saw almost a 6 percentage point reduction in the proportion of students who repeated the ninth grade, a 15 percentage point increase in the likelihood of having a 95 percent or better

The Opportunity NYC Demonstration: Family Rewards

Table 1.2

Summary of Impacts for the Full Family Rewards Sample

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
18-month survey outcomes				
Selected impacts on material hardship and income				
Food security[a] (1 = low; 4 = high)	3.4	3.2	0.2 ***	0.000
Did not get needed medical care because of cost in past 12 months[b] (%)	6.5	10.4	-3.9 ***	0.000
Family finances are not enough to make ends meet (%)	34.1	41.8	-7.8 ***	0.000
Strongly or somewhat agree that the financial situation is better than last year (%)	62.7	44.5	18.3 ***	0.000
Percentage of families with household income at or below the federal poverty level[c,d] (%)	59.4	70.0	-10.7 ***	0.000
Sample size (total = 2,060)	1,051	1,009		
Selected impacts on employment and earnings				
Ever employed in UI records (%)	56.2	58.5	-2.3 **	0.011
Total earnings in UI records ($)	12,114	12,354	-240	0.284
Currently employed at the time of the survey (%)	59.9	54.3	5.6 ***	0.000
Sample size (total = 4,994)	2,513	2,481		
Selected impacts on health outcomes and job characteristics (%)				
Some or all of respondent's children had a period with no coverage	14.6	17.9	-3.3 **	0.014
Had a health checkup since random assignment	93.2	91.7	1.5	0.128
Had at least two dental checkups since random assignment	67.4	57.9	9.5 ***	0.000
Average self-rated health is excellent	15.8	13.5	2.3 *	0.064
Currently being treated for any medical condition	47.2	44.4	2.8 *	0.092
Sample size (total = 3,082)	1,574	1,508		
Education outcomes				
Impacts on attendance and test scores: 4th-graders (%)				
Attendance rate, Year 2	87.9	88.3	-0.4	0.689
Attendance rate is 95% or higher, Year 2	44.5	41.6	2.9	0.225
Percentage proficient on ELA test, Year 2	67.6	68.1	-0.4	0.828
Percentage proficient on math test, Year 2	80.3	78.6	1.7	0.345
Sample size (total = 1,726)	862	864		
Impacts on attendance and test scores: 7th-graders (%)				
Attendance rate, Year 2	86.4	87.6	-1.2	0.182
Attendance rate is 95% or higher, Year 2	36.6	34.9	1.6	0.472
Percentage proficient on ELA test, Year 2	46.5	46.0	0.5	0.824
Percentage proficient on math test, Year 2	61.9	63.5	-1.6	0.414
Sample size (total = 1,671)	823	848		

(continued)

Table 1.2 (continued)

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Impacts on attendance and test scores: 9th-graders (%)				
Enrolled in 10th grade	70.3	68.8	1.5	0.446
Attendance rate is 95% or higher, Year 2	28.8	23.7	5.2 ***	0.006
Earned at least 22 credits, Years 1 and 2	45.0	44.4	0.6	0.767
Passed at least 2 Regents exams, Years 1 and 2	38.2	37.6	0.7	0.719
Sample size (total = 1,979)	988	991		
9th-graders who scored at or above proficiency level on the annual math test in 8th grade[a] (%)				
Remained in 9th grade, Year 2	3.0	8.8	-5.8 ***	0.003
Attendance rate is 95% or higher, Year 2	51.1	36.2	14.9 ***	0.000
Earned at least 22 credits, Years 1 and 2	72.7	64.5	8.1 **	0.032
Passed at least 2 Regents exams, Years 1 and 2	77.6	71.7	5.9 *	0.098
Sample size (total = 584)	298	286		
9th-graders who scored below proficiency level on the annual math test in 8th grade[e] (%)				
Remained in 9th grade, Year 2	22.1	21.8	0.3	0.916
Attendance rate is 95% or higher, Year 2	21.8	19.3	2.5	0.291
Earned at least 22 credits, Years 1 and 2	38.1	40.1	-2.0	0.492
Passed at least 2 Regents exams, Years 1 and 2	22.9	25.2	-2.3	0.343
Sample size (total = 1,143)	565	578		

SOURCE: MDRC calculations from New York City Department of Education administrative records.

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

Years 1 and 2 cover the 2007-2008 and 2008-2009 school years, respectively.

ELA is the English Language Arts exam; UI is unemployment insurance.

[a]The food security question describes food eaten by the family in the prior month: 1= Often not enough to eat; 2 = Sometimes not enough to eat; 3 = Enough to eat but not always the kinds of food desired; 4 = Enough to eat of the kinds of food desired.

[b]This excludes prescriptions.

[c]Family Rewards payments are based on Seedco's Family Rewards data from Year 2 of the program, which include activities completed in September 2008 through August 2009. The monthly Family Rewards payment amount is calculated by dividing the annual reward amount by 12. The payment data do not include bonus payments that some families received for opening new bank accounts.

[d]Annual household income was calculated by multiplying by 12 the respondent's income in the month prior to the survey interview. For program group members, it includes Family Rewards payments earned during Year 1 (2007-2008) of the program. The federal poverty level was created based on annual income (monthly income multiplied by 12) and the household size at the time of the survey. The poverty threshold was measured according to the 2008 or 2009 Federal Poverty Guidelines, depending on when a respondent was interviewed.

[e]In New York State, students who score at a level of 3 or higher on a 4-point scale are deemed "proficient."

Box 1.1

How to Read Impact Tables in This Report

In the context of this evaluation, an "impact" is a measure of the effect of the Family Rewards program, represented by the difference between those teenagers and their parents randomly assigned to the program group, compared with those randomly assigned to the control group. All the tables in this report that show impacts use a similar format, with information provided for families in each of the program and control groups. Because families were assigned randomly either to the program group or to the control group, the effects of the program can be estimated by the difference in outcomes between the two groups. The "Difference" column in the table shows the differences between the two research groups' outcomes — that is, the program's estimated *impacts* on the outcomes. All impacts are calculated controlling for a range of pre-random-assignment characteristics to increase precision of the impact estimates. The p-value shows the probability that this difference, or impact, arose by chance. The number of asterisks indicates whether the impact is statistically significant at the 1 percent (***), 5 percent (**), or 10 percent (*) level. All estimates are regression-adjusted using ordinary least squares, controlling for pre-random-assignment characteristics of families or sample members.

attendance rate (in Year 2), an 8 percentage point increase in the likelihood of staying on track for graduation over the first two years of the program, and an increase of about 6 percentage points in the likelihood of passing at least two Regents exams. By contrast, there are no statistically significant impacts for the group of high school students who scored below proficiency on standardized tests.

These findings represent preliminary results from the core evaluation of Family Rewards. Results from the third to fifth year of follow-up are forthcoming. Because there were stronger positive impacts on educational outcomes for the ninth-graders relative to the other two age groups, the child and family embedded study focused on that age group. The embedded study sought to understand the effects of the program on changes in the family setting as well as a broader set of developmental processes and outcomes for teenagers that may have mediated the program's impacts on educational outcomes or may have contributed to teenagers' well-being more broadly two years into the program.

The Family Rewards Child and Family Embedded Study: Theoretical Framework

Family Rewards is built on the premise that financial incentives can benefit families in two ways: by reducing poverty in the short term by transferring cash to poor families, but also by encouraging behavioral changes among parents and children in ways that may benefit them in

the long run by making those cash payments contingent on the families' participation in a set of key activities. These dual pathways are shown in Figure 1.1, which illustrates the hypothesized pathways of influence of the Family Rewards program. In short, each of the incentive offers (in the three domains of employment and training, education, and health) is thought to induce a small set of incentivized behaviors in the short term (for example, in parents' participation in employment and training, in school attendance and attendance at parent-teacher conferences, and in doctor's and dental visits and the maintenance of health insurance). This embedded study addresses the effects of the Family Rewards program on a set of key mediating processes and outcomes not assessed in the core evaluation that were thought to be key to understanding the impacts for the oldest children.

Changes in these mediating processes in the short term were thought to lead to longer-term gains in outcomes of children, such as their academic achievement and health. Beneficial effects were also thought to occur as a result of the short-term increases in income and reductions in poverty and hardship that families should experience by engaging in the incentivized behaviors and receiving rewards payments. Family Rewards also has the unique feature of providing cash payments for outcomes as well (for example, in children's achievement test scores); as a result, changes in children's academic achievement should further increase income impacts among families. All of these pathways of influence (on incentivized behaviors, family income, and key targeted outcomes for children) are being assessed as part of the core evaluation of the Family Rewards program.

As discussed earlier, this report addresses the effects of Family Rewards on a number of additional mediating processes: (1) teenagers' time use; (2) parents' and teenagers' spending and savings; (3) interactions between parents and teenagers; (4) teenagers' approaches to schooling — their expectations, engagement, efficacy, and motivation; and (5) teenagers' mental health and problem behaviors, key outcomes not directly targeted by the program. These areas are shown in bold in Figure 1.1, as they are the focus of this report. The relations between these outcomes, the Family Rewards program, and those outcomes collected as part of the core evaluation are shown in Figure 1.1 and discussed further below.

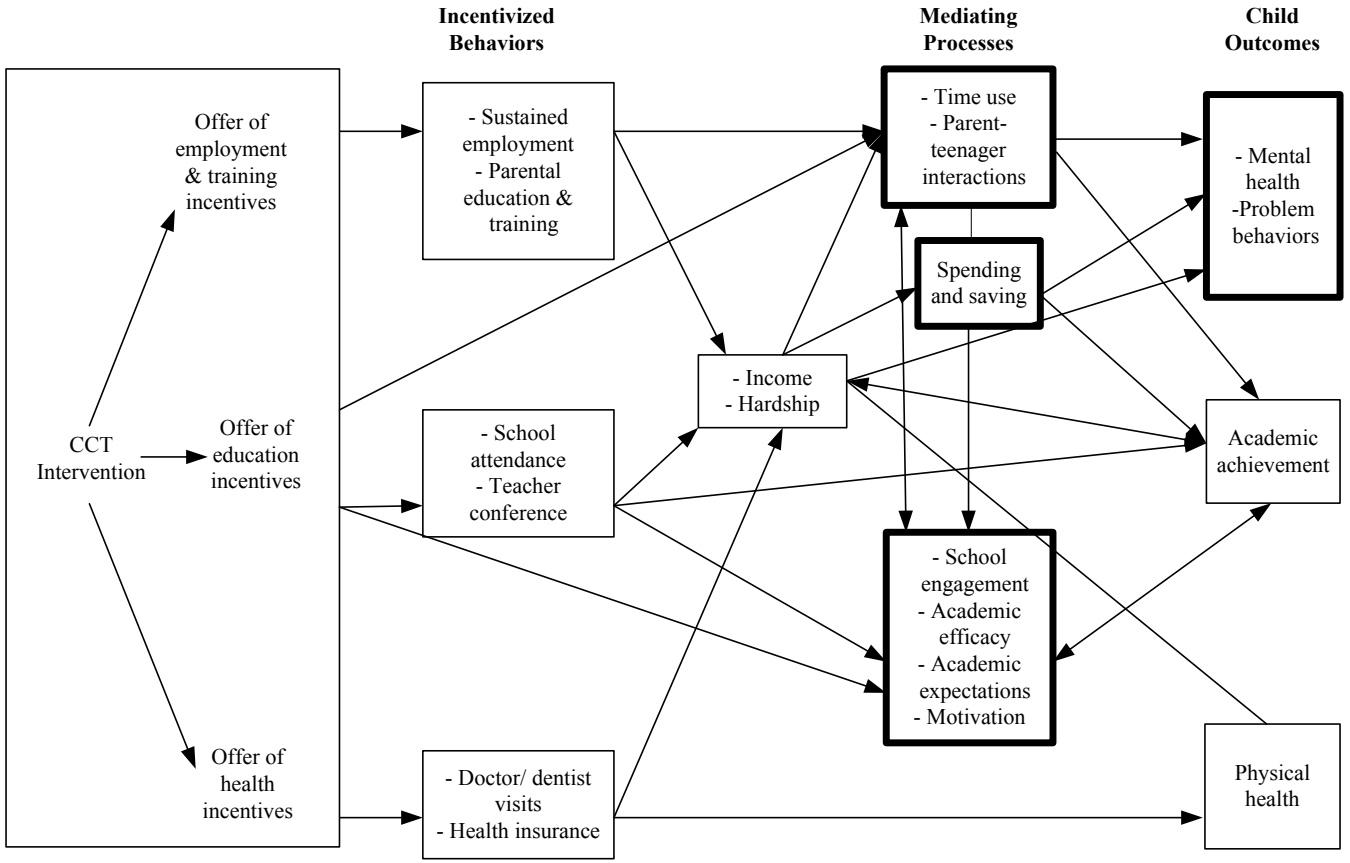
Time Use

One of the key ways that comprehensive CCTs are intended to affect outcomes for the next generation is that, by offering incentives for educational outcomes, they change the daily activities in which teenagers engage. The idea was that by incentivizing educational outcomes, teenagers might spend more time in school-related activities, such as completing homework assignments or studying, and in achievement-oriented after-school activities, such as tutoring. These changes in time use were thought to affect not only their academic achievement, but also their engagement in problem behaviors with peers.

The Opportunity NYC Demonstration: Family Rewards

Figure 1.1

A Heuristic Model for the Child and Family Embedded Study



NOTES: All 3 child outcomes are hypothesized to be associated with one another, but lines indicating these associations are not shown.
Bold boxes indicate mediating processes measured in the Family Rewards Child and Family Embedded Study.

Spending and Saving

The Family Rewards intervention provided families with the offer of cash transfers that should result in a greater level of resources within families. Indeed, the interim results (discussed above and in Riccio et al.[7]) showed that the program successfully increased family income and reduced material hardship. The main goal of the incentives was to encourage parental investments in children's education, by allowing parents to purchase tutoring services, after-school activities, and other academic resources for their children, thus supporting children's academic achievement and long-term academic expectations. However, families might have decided instead to use the rewards to support basic necessities, on the one hand, or leisure and entertainment activities (such as movies) on the other.

Less was hypothesized about how the program might affect teenagers' own spending, although the hope was that the teenagers, like their parents, would invest in their future human capital. Did they spend additional resources on educational items? What about household items (food, clothing)? Or did they spend more on social activities? What does this tell us about how the increased resources might have benefited or harmed adolescents?

Parent-Teenager Interactions

The offer of incentives through Family Rewards was expected to affect interactions between teenagers and their parents. More specifically, Family Rewards was expected to shape the climate of the family with regard to norms and expectations about children's participation in school and after-school activities and the value of school success and schoolwork. These changed norms and expectations might result in parents' increased monitoring of their children's activities. Notably, changes in parental expectations and pressure could also act as a double-edged sword and erode the potential positive effects that higher parental and family expectations and aspirations for their children's academic success might have on children's well-being. As such, these changed norms might also increase conflict between parents and their adolescent children.

Teenagers' Approaches to School

Family Rewards incentives — by offering educational incentives and through changes in family interactions — were also thought to change teenagers' approach to schooling (that is, their academic expectations, school engagement, academic efficacy, and motivations). For example, it was thought that program-driven changes in parents' encouragement of educational

[7]Riccio et al. (2010).

attainment (and parental socialization of such values) would shape children's own perceptions of the value of educational achievement and engagement. By offering incentives for educational outcomes, it was thought that Family Rewards might encourage teenagers to be more interested in their learning and have higher expectations for their academic outcomes. These might all be reinforced if school attendance and greater time spent on schoolwork "paid off" in terms of better academic outcomes.

In the area of motivation, cash incentives have received considerable scrutiny, because of concerns that such rewards might potentially have negative effects on children's motivation to learn.[8] However, it is not clear whether these findings would carry over to real-world field settings, especially where the challenges of living in impoverished communities might impinge on students' levels of intrinsic motivation, resulting in lower levels of intrinsic motivation from the outset.[9] In fact, the designers of Family Rewards hoped that the offer of incentives would not discourage intrinsic motivation.

Teenagers' Mental Health and Problem Behaviors

In addition to effects on the key targets of the program, research has rarely explored the effects of programs like Family Rewards on children's mental health and problem behaviors. However, such a program might indeed have implications for such outcomes. For example, the greater income and resources generated by Family Rewards might well affect outcomes such as teenagers' mental health and problem behaviors as well as the targeted outcomes of the program.[10] Moreover, effects on delinquency could be influenced by changes in teenagers' time use, as more time spent on academics might reduce time spent on risk-taking behaviors. At the same time, negative effects could also occur if teenagers spent their money engaging in risky behaviors and/or if the program heightened parents' expectations at the cost of teenagers' mental health.

Sample for the Current Study

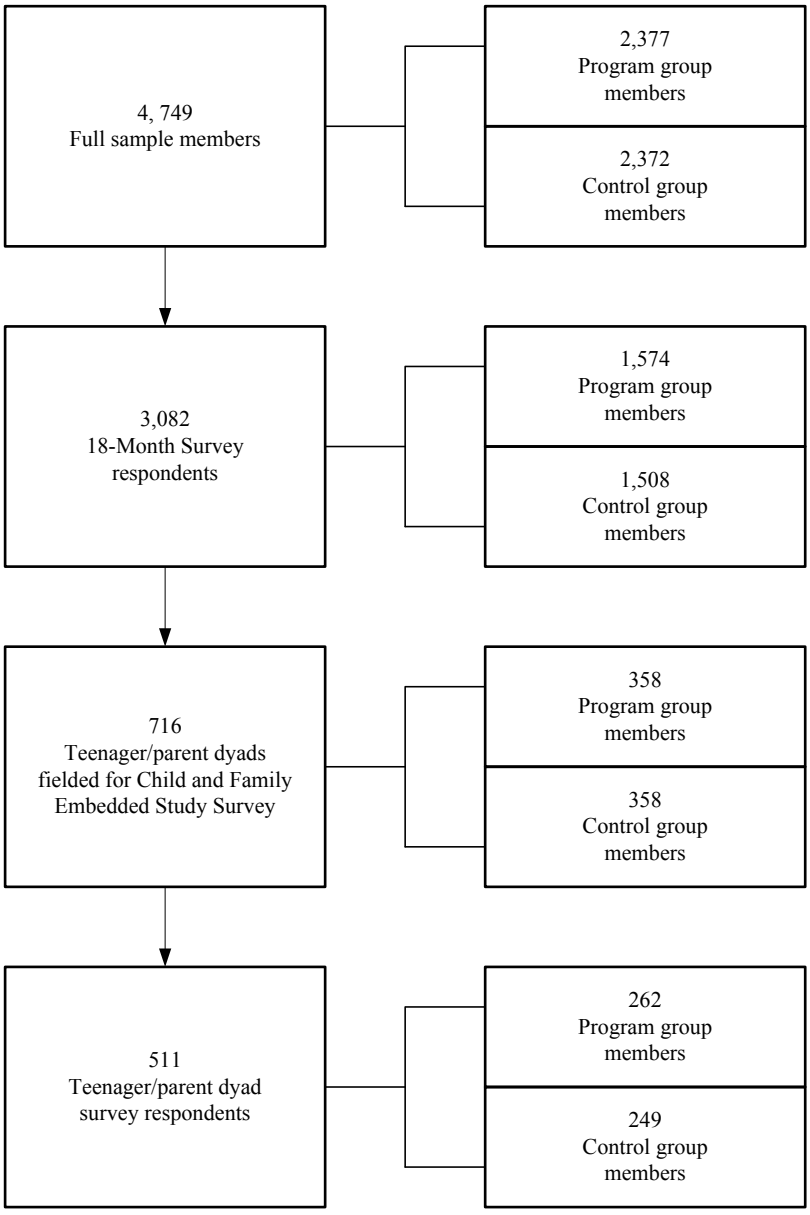
This report focuses on a subset of the children in the oldest age cohort (ninth grade at baseline) from the Family Rewards core study sample who were interviewed as part of the core evaluation follow-up at the 18-month time point (see Figure 1.2). As discussed earlier, nearly 4,800 families were randomly assigned to the core evaluation. A little more than 3,000 of these families were selected and interviewed at the 18-month point for a follow-up survey as part of

[8]Deci (1971).
[9]Eccles and Wigfield (2002).
[10]Costello, Compton, Keeler, and Angold (2003).

The Opportunity NYC Demonstration: Family Rewards

Figure 1.2

Family Rewards Child and Family Embedded Study Sample Selection Process



NOTE: Two teenager respondents are excluded from the Child Survey respondent sample because their parents did not complete the Parent Survey.

the core evaluation. A sample of 716 teenagers and their parents were selected from this group of families. Information was collected as part of this embedded child and family study on 511 of them, representing an effective response rate of 72 percent (77 percent of parents were contacted and gave consent for their children to participate; of these, 93 percent of children consented to participate and complete a survey). The embedded study sample was purposely selected to oversample teenagers with high levels of prebaseline math proficiency because of the larger impacts found on children who were proficient in math in the core study (to ensure a 50-50 split by baseline math proficiency).[11]

A telephone survey was administered to the 511 teenagers and their parents during the spring of their third year following random assignment (approximately 30 months after they entered the core study). The survey collected information from teenagers on their spending and saving patterns, time use, level of conflict in discussions of various topics with their parents, various educational processes, mental health, and risky behaviors. The parent survey collected information from parents on their spending and saving patterns, levels of monitoring their teenager, and level of conflict in discussions of various topics with their teenager. Sources, psychometric properties, and item-level detail for all measures collected on these surveys are provided in Appendix D.

Table 1.3 shows the baseline characteristics of these 511 parents and teenagers. As can be seen in the table, the sample is comprised of largely single parents in households with incomes below 130 percent of the federal poverty line. A large proportion of families rely on public benefits, although about half were working full time. The parents in the sample are black and Hispanic; more than four-fifths are U.S. citizens. In terms of characteristics of high school students, nearly all attended public schools, and 13 percent were enrolled in special education. Only a little over a third of the students were found to meet learning standards for proficiency in two core subject areas: English Language Arts (ELA) and math.

Analyses comparing the embedded study sample of parents and teenagers with the core study sample are presented in Appendix E. These analyses show that the two samples did not differ in important ways, with a few exceptions. Moreover, analyses comparing the results for educational outcomes of this embedded study sample show similarity between the findings from the core study and those in this sample, with limited impacts on educational outcomes for the full group of teenagers and positive impacts for those who scored at or above the basic proficiency level on their eighth-grade standardized math tests (although impacts on educational

[11]In addition, since the core study sample was slightly unbalanced between program and control groups on parents' baseline employment (see Riccio et al., 2010), stratification on parents' baseline employment status was conducted to ensure better balance on this pre-random-assignment characteristic in the embedded study sample. Note that in both the core and embedded studies, impact analyses control for this baseline characteristic.

The Opportunity NYC Demonstration: Family Rewards

Table 1.3

Characteristics of Families at the Time of Random Assignment, by Research Group for the Embedded Study Sample

Characteristic	Program Group	Control Group	
Family characteristics			
One-parent families (%)	79.8	83.1	
Average number of children in household	2.4	2.4	
Primary language spoken at home is English (%)	78.6	84.3	*
Living in public housing (%)	29.0	33.9	
Receiving TANF or Safety Net Assistance (%)	22.7	22.3	
Receiving food stamps (%)	60.0	59.4	
At least one adult covered by public health insurance (%)	68.0	69.6	
Earnings above 130% of federal poverty level (%)	16.3	12.6	
Parent characteristics			
Female (%)	95.8	92.8	
Race/ethnicity (%)			
Hispanic/Latino	45.0	40.2	
Black, non-Hispanic/Latino	53.8	57.7	
Other	1.2	2.0	
Age (%)			
19-34 years	13.7	16.9	
35-44 years	48.1	53.4	
45-54 years	30.5	23.3	
55 years or more	7.6	6.4	
U.S. citizen (%)			
By birth	68.7	71.5	
By naturalization	14.9	15.3	
Legal permanent resident	16.4	13.3	
Education, highest degree or diploma earned (%)			
Less than high school diploma/GED	37.5	42.0	*
High school diploma/GED	20.7	25.9	*
More than high school diploma/GED	41.8	32.1	*
Currently working full time (%)	49.6	49.0	

(continued)

Table 1.3 (continued)

Characteristic	Program Group	Control Group
Teenager characteristics		
Born in the U.S. (%)	89.7	92.3
Female (%)	53.8	54.0
Average age (years)	13.9	14.0
Race/ethnicity (%)		
Hispanic/Latino	44.4	37.7
Black, non-Hispanic/Latino	52.5	59.4
Other	3.1	2.9
Type of school attended in the past year (%)		
Public or charter school	99.2	98.4 [ ]
Private or parochial school	0.8	1.6 [ ]
Enrolled in special education in the past year (%)	13.4	13.0
Enrolled as English Language Learner in the past year (%)	11.2	11.7
Meets English Language Arts learning standards (%)	37.1	33.6
Meets math learning standards (%)	40.5	37.3
Sample size (total = 511)	262	249

SOURCE: MDRC calculations using data from Baseline Information Forms.

NOTES: Statistical significance levels are indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

In order to assess differences in characteristics across research groups, chi-square tests were used for categorical variables, and t-tests were used for continuous variables.

Brackets ([ ]) around significance levels indicate that the chi-square tests for statistical significance are not valid because sample sizes within categories are too small.

Rounding may cause slight discrepancies in calculating sums.

Sample sizes may vary because of missing values.

Public health insurance measures in this table exclude child information.

outcomes are slightly larger for the embedded study sample of proficient children). Most importantly for the impact analyses presented in this report, there were very few differences between program and control group respondents in measured baseline characteristics for either parents or teenagers, indicating that the internal validity of the impact analyses was maintained in this subsample of the core study sample.

Analyses for the Current Study

Analyses presented in the current report focus on the differences between parents and teenagers assigned to the program group and those assigned to the control group in each of the areas of

interest discussed above, controlling for a small set of pre-random-assignment characteristics to increase precision.[12] As a result, analyses do not formally test the conceptual model presented in Figure 1.1. A better representation of the analytic framework for the results presented in this report is Figure 1.3. (Impacts on outcomes presented in the current report on the embedded study are shown in bold-lined boxes; those impacts presented in reports from the core study are shown in the lighter-lined boxes of the same figure, where each line represents an impact analysis that was conducted on a different set of outcomes.) What this figure highlights is that relationships *between* impacts are not tested in this report. For example, analyses *are* conducted to test whether the Family Rewards program produced differences between program and control groups in teenagers' time use *and* whether the program also produced differences between program and control groups in teenagers' problem behaviors; however, analyses are *not* conducted of whether those two impacts are related *to each other*. The design of this study allows for the strongest causal statements to be made about the first set of analyses, in that any differences between program and control groups can be confidently attributed to the Family Rewards program. Since the same confidence cannot be applied to relations between outcomes in the conceptual model, those are not the focus of this report. At the same time, the discussion does address the pattern of impacts across hypothesized mediators and outcomes as a means to begin to build a theory of change for the Family Rewards program that can be tested in future work.

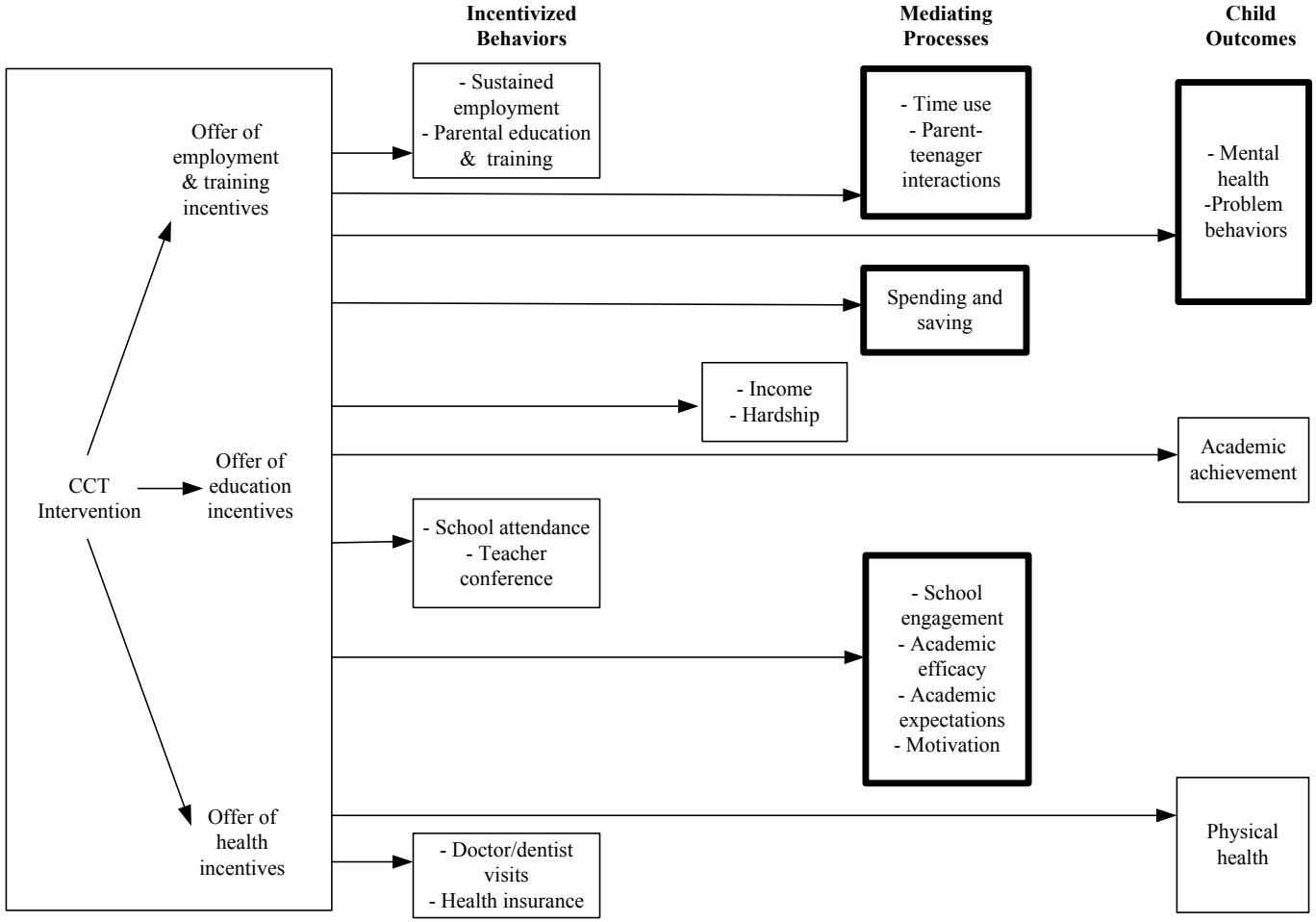
Organization of This Report

This report presents findings on the impacts of Family Rewards on parents and their teenagers, well into their experience in the program (in the spring of their third school year in the program). Chapter 2 presents impacts on parents' and teenagers' spending as a result of the program, as well as on two aspects of family processes — teenagers' time use and interactions between parents and teenagers. Chapter 3 reports impacts of Family Rewards on outcomes for the teenagers: their approaches to schooling (academic expectations, school engagement, academic efficacy, and motivation) as well as mental health and behavioral outcomes. Finally, Chapter 4 summarizes the findings and offers concluding thoughts about the implications of these findings for CCT interventions more broadly.

[12] A range of baseline covariates were included in all analyses. Covariates included average class size for grade level, ELA pretest score, math pretest score, school district, child gender, child race, special education status, the number of children in the household, whether English was spoken in the home, if the family was a single-parent or two-parent family, parents' education, parents' employment status, an indicator for if there was no mother in the home, and an indicator for whether random assignment occurred after September 2007.

Figure 1.3

Tested Impacts in the Core Study and the Child and Family Embedded Study



NOTES: All 3 child outcomes are hypothesized to be associated with one another, but lines indicating these associations are not shown.
Bold boxes indicate mediating processes measured in the Family Rewards Child and Family Embedded Study

Chapter 2

The Impact of Family Rewards on Time Use, Spending and Saving, and Parent-Teenager Interactions

This chapter presents impact findings of Family Rewards on teenagers' time use, on parents and teenagers' spending and savings, and on interactions between parents and teenagers. Impacts are presented for all parents and their teenage children in the embedded study sample. In addition, impacts are discussed by subgroups based on teenagers' baseline proficiency at the point of random assignment, given that this baseline characteristic shaped program impacts on educational outcomes (see Chapter 1 and Riccio et al.[1]). Results of impact analyses for boys and girls are also discussed briefly (the full set of such subgroup results are presented in Appendix B).

As discussed in Chapter 1, Family Rewards was intended to change the way teenagers spent their time, with the goal of increasing the amount of time they spent on academic activities. Findings show statistically significant program impacts on the proportion of teenagers in different time use groups based on the way they allocated their time, with Family Rewards reducing the proportion of teenagers who spent their time predominantly in social activities and increasing the proportion of teenagers who spent their time predominantly in academic activities. This finding was especially true for the teenagers who were better prepared for school based on their test scores before random assignment. However, when examined activity by activity, there was no difference between the Family Rewards group and the control group in the average amount of time teenagers spent participating in academic activities.

The designers of Family Rewards also thought that increased resources might lead to increased parental investment in activities (such as tutoring) and materials (such as books) that might promote learning. What was far less clear, however, is whether parents would also use the resources to support basic necessities and leisure activities, and, indeed, how teenagers might spend their own earned rewards. In either case, how parents and teenagers spent their resources may provide some insight into the extent to which the program might have encouraged families to invest in teenagers' human capital in ways that could have the longer-term effects on reducing intergenerational poverty, a central goal of conditional cash transfer (CCT) programs. Indeed, the findings discussed in this chapter indicate that Family Rewards did increase the amount of money parents spent on their teenagers (with higher levels of spending by program group parents than control group parents on academic activities and supplies as well as basic necessities) and had a positive impact on parents' saving for their teenager's future

[1]Riccio et al. (2010).

education. Teens in the Family Rewards group spent somewhat less on necessities and leisure activities than control group teens, perhaps because parents were spending more. It is important to remember that the embedded survey was conducted in late winter and spring, before the time when teenagers could earn large rewards (for example, for test scores or Regents exams). A survey fielded in the summer could have yielded somewhat different results on spending.

Finally, Family Rewards was expected to change the way parents and their teenagers interacted with each other, with the hope that parents might monitor more closely their teenager's activities with the introduction of incentives for their child's education. At the same time, there was a concern that the introduction of such incentives might increase parent-teenager conflict, especially regarding the earning and spending of reward payments. In fact, however, neither the benefits to parental monitoring nor the increases in conflict as a result of Family Rewards were observed.

These three sets of results, on teenagers' time use, spending and savings, and parent-teenager interactions, are discussed in more detail in this chapter. These findings set the stage for an exploration of Family Rewards' effects on teenagers' academic processes and other outcomes that are presented in Chapter 3.

Time Use

By incentivizing particular behaviors (for example, school attendance) and the achievement of longer-term outcomes (for example, reading and math achievement scores), Family Rewards was intended to change the daily activities in which the teenagers engaged. For example, it was hoped that children would spend more time in school-related activities, such as completing homework assignments and studying, and in achievement-oriented after-school activities, such as tutoring, because the outcomes of such behaviors (that is, test scores) are directly incentivized by the program. Teenagers' daily activities also might be shaped by changes in parental employment and labor force participation, as children might assume more household and adult-like responsibilities, such as caring for younger siblings, cleaning, shopping, or cooking, when their parents worked. Alternatively, it is possible that teenagers who earned their own money would not need to work for pay as much and thus could focus their efforts on other activities.

As such, this embedded study was designed to examine the impacts of the program on the way teenagers spent their time. To assess this, teenagers responded to a series of questions asking how they spent their time between 2 p.m. and bedtime on a typical weekday. Using these data, two approaches were used to understand the impacts of Family Rewards on teenagers' time use: (1) The first approach assessed time use by assigning teenagers into "time use groups" by relying on a statistical approach called cluster analysis (see Appendix C for technical details). This approach considered *all* activities simultaneously, with groups of teenagers characterized by

distinct "patterns" or profiles of time use based on the way they allocated their time (for example, one group might be characterized by particularly high amounts of time on one activity, say participation in sports, and low amounts on the other activities; another might be characterized by moderate levels of involvement in many activities). One advantage of this approach is that it reflects that the time spent on each of the activities is dependent on others, such that an increased proportion of time spent in one activity would directly lead to a decreased proportion of time spent in other activities. With this approach, impacts of Family Rewards are examined on the *proportion* of teenagers in each of the groups.[2] (2) The second approach assessed time use in a more typical fashion, one activity at a time. In this latter case, the amount of time each teenager spent in each activity was computed based on start and end times for each activity, and impacts are examined on the *average amount of time* spent in such activities.

Notably, both approaches provide unbiased estimates of program impacts but are somewhat different conceptualizations of the same information. In the first case, the analysis will provide information about whether there is an impact on the way teenagers allocated their time across activities; in the second case, the analysis will provide information about whether there is an impact on the *average amount of time* teenagers spent in each activity.

Impacts on Time Use Groups

As discussed above, time use was first assessed using an approach that identified groups of teenagers based on their patterning of activity participation in all activities. This analysis identified four groups of teenagers (see Box 2.1): (1) those who spent their time predominantly in academically oriented activities (homework, after-school activities); (2) those who spent their time predominantly in socially oriented activities (hanging out with friends or family, talking on the phone or texting); (3) those who spent a large proportion of time watching TV and on the computer; and (4) those who spent the most time in maintenance activities (eating, napping, grooming, commuting) and working (doing chores, work for pay).

Figure 2.1 shows the proportion of time spent in each activity for each of these identified time use groups. While individuals within a group will not have identical patterns of time use, their patterns will be more similar to each other than to those of teenagers in the other groups.[3]

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[2]Notably, unlike subgroups, which are based on baseline characteristics of families pre-random-assignment, these "groups" are based on postrandomization patterns, and therefore impacts are examined on the proportion of teenagers in each of the groups.

[3]Notably, there is heterogeneity in teenagers' reported time use even within the "time use groups." But teenagers are classified in one group over another because their activity scores are more similar to other teenagers classified in that group than to those in another group. For example, two teenagers in the socially oriented group will have similar but not identical profiles: One teenager in the socially oriented group may spend 69 percent of his time engaged in social activities, 16 percent in academic activities, 2 percent in

(continued)

Box 2.1

Time Use Groups

Teenagers were divided into groups derived from an analysis of the proportion of time they spent on each of their reported activities from 2 p.m. until they went to bed on a typical weekday. Activities were initially categorized into academics, work, religious activities, social activities, maintenance activities (eating, napping, grooming, commuting), family chores, and time spent on the computer or watching TV for this analysis. Then groups of teenagers were identified based on an approach called cluster analysis. Cluster analysis identifies groups of individuals with similar values across a set of variables. This analysis identified four groups of teenagers:

Academically oriented. On average, this group spent over half of their time engaged in academic activities (50.7 percent), and the rest of their time engaged in TV/computer time (14 percent), maintenance activities (20.7 percent), and social activities (6.2 percent).

Socially oriented. On average, this group spent over half of their time engaged in social activities (that is, hanging out with friends/family, on the phone; 52.6 percent). They spent most of the rest of their time engaged in TV/computer time (15.2 percent), maintenance activities (19 percent), and academics (6.6 percent).

TV/computer oriented. On average, this group spent more than half of their time engaged in watching TV or on the computer (56.7 percent). They spent most of the rest of their time on maintenance activities (17 percent), academics (14.6 percent), and social activities (4.8 percent).

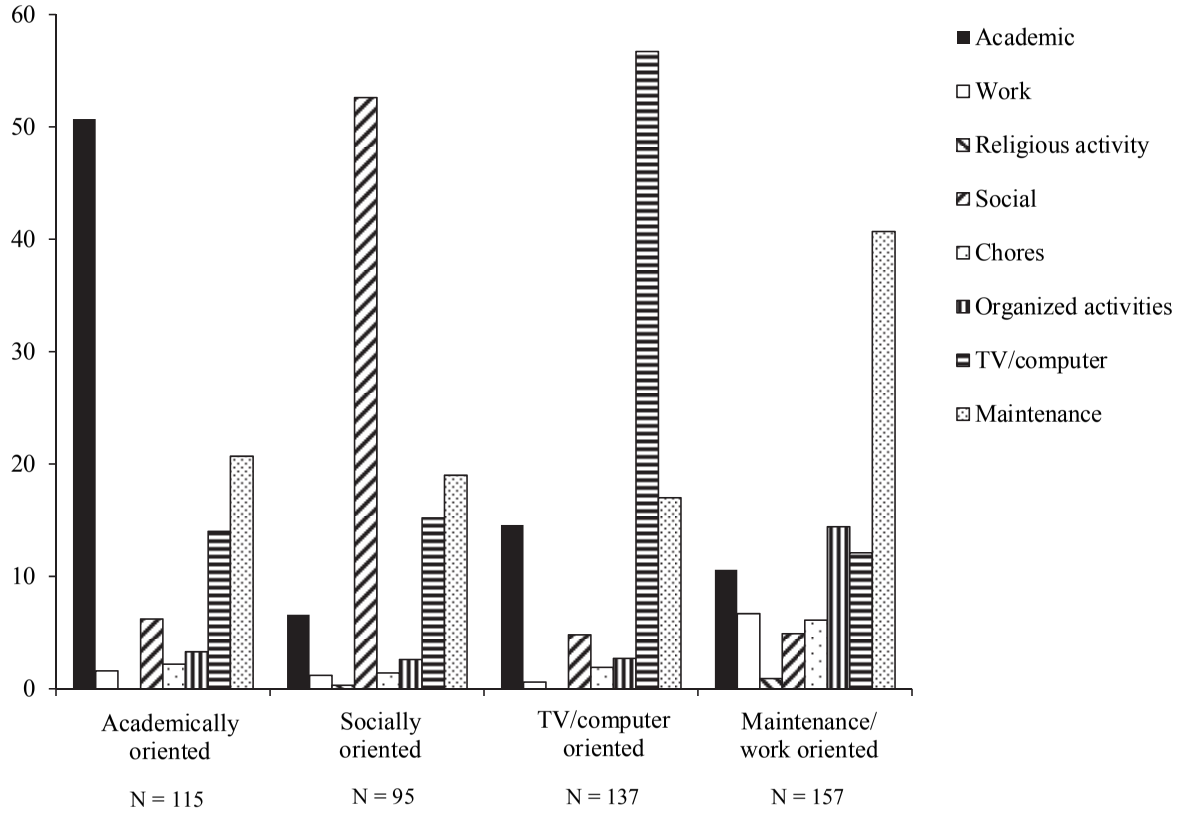
Maintenance/work oriented. On average, this group spent the most time in maintenance activities (40.7 percent) and significantly more time than any others working for pay and doing family chores (nearly 7 percent versus less than 2 percent for working, and about 6 percent versus less than 3 percent for chores). A large part of the rest of their time was equally split between academic activities (10.6 percent), TV/computer time (12.1 percent), and nonacademic organized activities (14.4 percent).

The academically oriented teenagers reported, on average, spending half their time in academic activities, less than 10 percent of their time in social activities, and about 15 to 20 percent of their time watching TV/on the computer or in maintenance activities (such as eating, napping, grooming, commuting). By contrast, the socially oriented teenagers spent

TV/computer time, and the remaining 13 percent in maintenance activities, while another teenager in the group may spend 38 percent of his time on social activities, 15 percent on academics, 16 percent on TV/computer activities, and the remaining 30 percent on maintenance activities. While these two teens do not have identical time use profiles, the *patterns* in the proportion of time they spend in the various activities are similar.

Figure 2.1

Percentage of Time Spent in Each Activity by Time Use Groups for the Full Sample



SOURCE: MDRC calculations from Family Rewards 30-Month Embedded Study Survey.

half their time on social activities, less than 10 percent on academic activities, and, like the academically oriented group, about 15 to 20 percent of their time watching TV/on the computer or in maintenance activities. The TV/computer teens spent half their time watching TV/on the computer and less than 10 percent of their time on all other activities (including educational and social), with the exception of maintenance activities. Finally, the maintenance/work group spent about 40 percent of their time on maintenance activities. While the proportion of their total time spent working and doing chores (both at about 6 percent of their time) did not represent a majority of their time, they did spend a much higher proportion of their time on these activities than any of the other groups (which all were working less than 2 percent of the time and doing chores less than 3 percent). Importantly, the groupings are quite robust to how certain activities are categorized in the analysis (see Appendix C), including, for example, removing time spent on computers from the TV group, since it is difficult to distinguish whether such time is an educational, social, or leisure activity. And, as also discussed in Appendix C, the groups are associated with outcomes in expected ways (that is, the academically oriented group has better academic outcomes than the other three groups; the socially oriented group has higher levels of substance use than the other three groups).

The impact of the Family Rewards program was then examined on the proportion of teenagers in these "time use groups." Results are shown in Figure 2.2.[4] As shown in the figures, about 40 percent of teenagers in the control group were in the maintenance/work time use group, a quarter in the TV/computer time use group, a little more than 20 percent in the social group, and 16 percent in the academically oriented group. Family Rewards reduced the proportion of socially oriented teenagers and increased the proportion of academically oriented teenagers. More specifically, teens in the program group were more likely to be categorized in the academically oriented group compared with the socially oriented group (24 percent of teenagers compared with 15 percent), a pattern that was not observed in the control group.

This same analysis was repeated by teenagers' baseline math proficiency, given that this baseline characteristic shaped program impacts on their educational outcomes (see Chapter 1 and Riccio et al.[5]). Results are presented in Figures 2.3 and 2.4. As shown in the figures, the results observed above for the entire sample are concentrated among those teenagers who were rated as proficient on the math test at the end of eighth grade. More specifically, in the nonproficient subgroup, the patterns of time use across the program and control groups are not different from each other. In the proficient subgroup, however, there are significant program and control group differences. Pair-wise comparisons show that

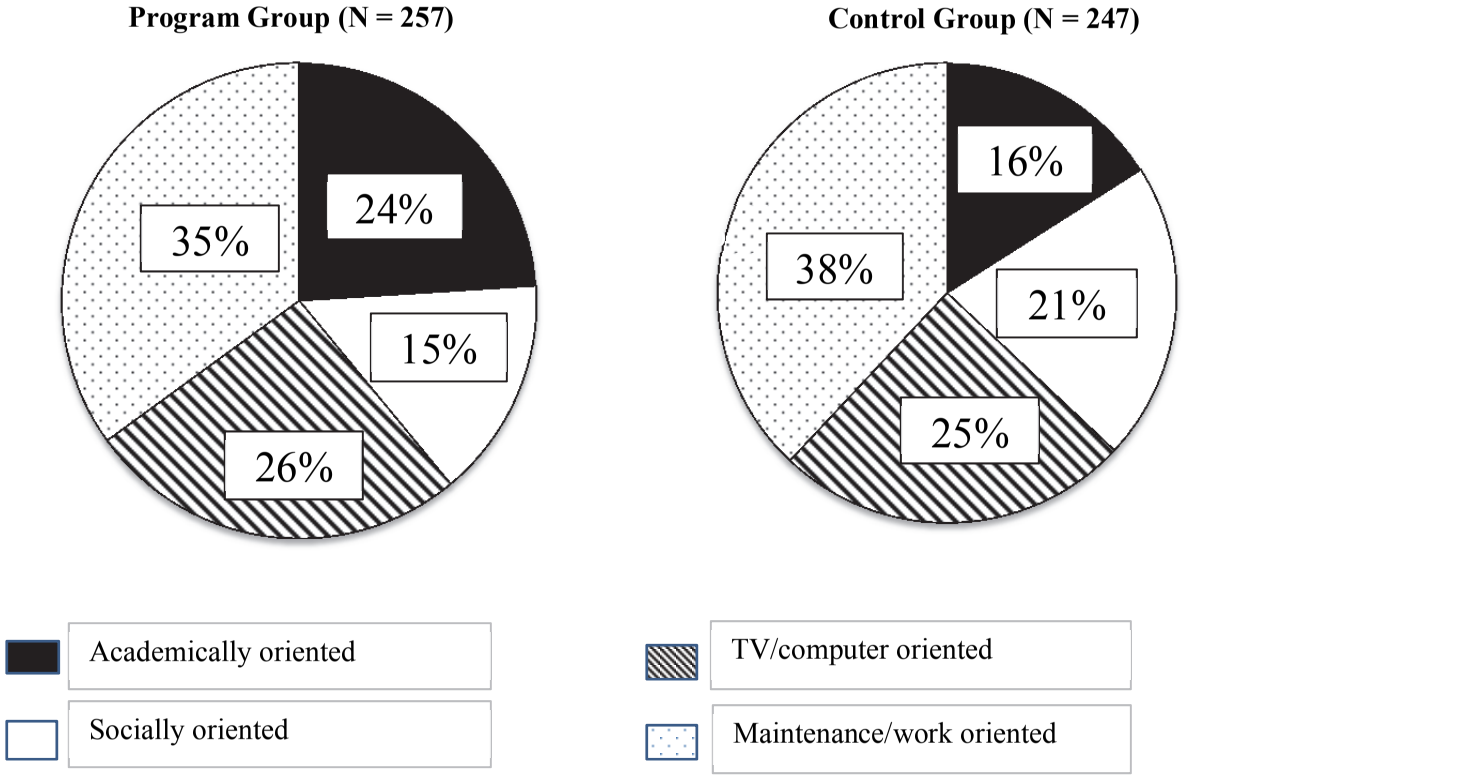
[4]These results were from a multinomial logit analysis with treatment status as an independent variable (along with baseline covariates) and the four groupings as the dependent variable that showed a significant treatment effect on membership in the outcome. Post-hoc comparisons between groups revealed the significant differences reported above.

[5]Riccio et al. (2010).

Figure 2.2

Impacts on Teenagers' Membership in Time Use Groups

Program group teenagers are statistically significantly more likely than control group teenagers to be in the academically oriented group and less likely to be in the socially oriented group.



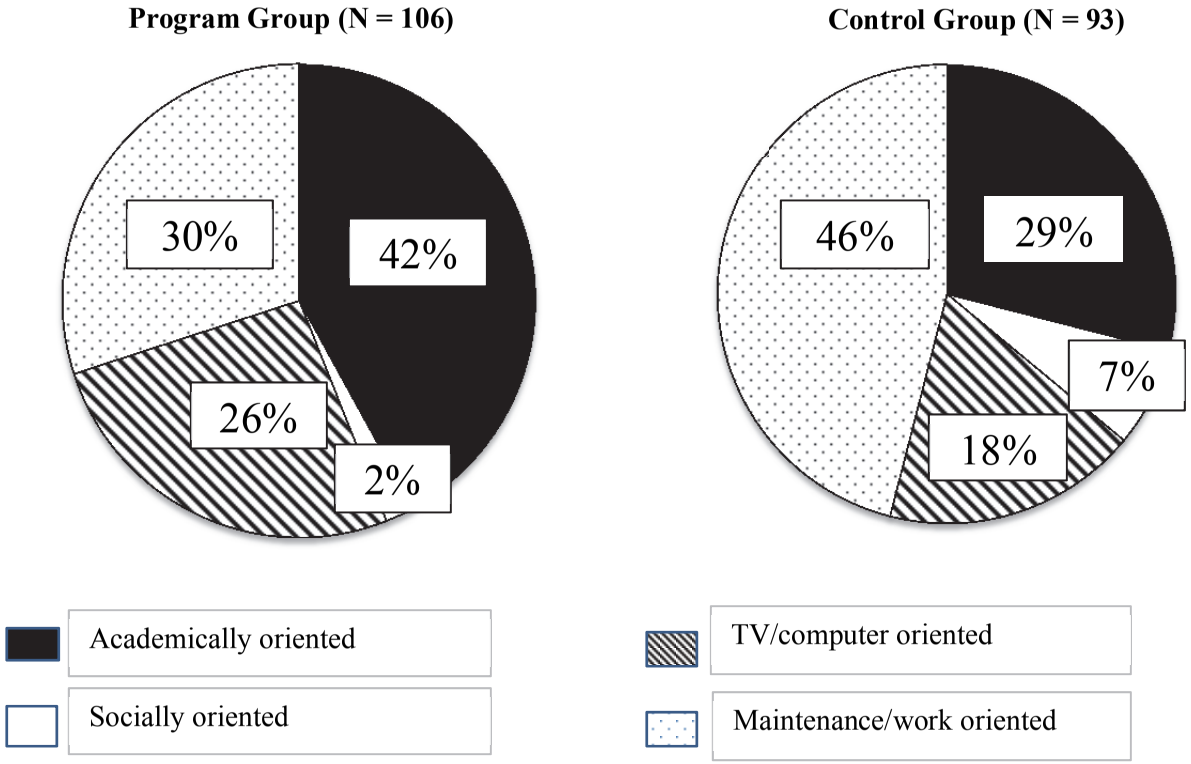
SOURCE: MDRC calculations from Family Rewards 30-Month Embedded Study Survey.

NOTE: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family and sample members.

Figure 2.3

Impacts on Teenagers' Membership in Time Use Groups, Among Those at or Above Proficiency Level on 8th-Grade Math Test

Program group teenagers are statistically significantly more likely than control group teenagers to be in the academically oriented group and less likely to be in either the socially oriented group or the maintenance/work-oriented group.



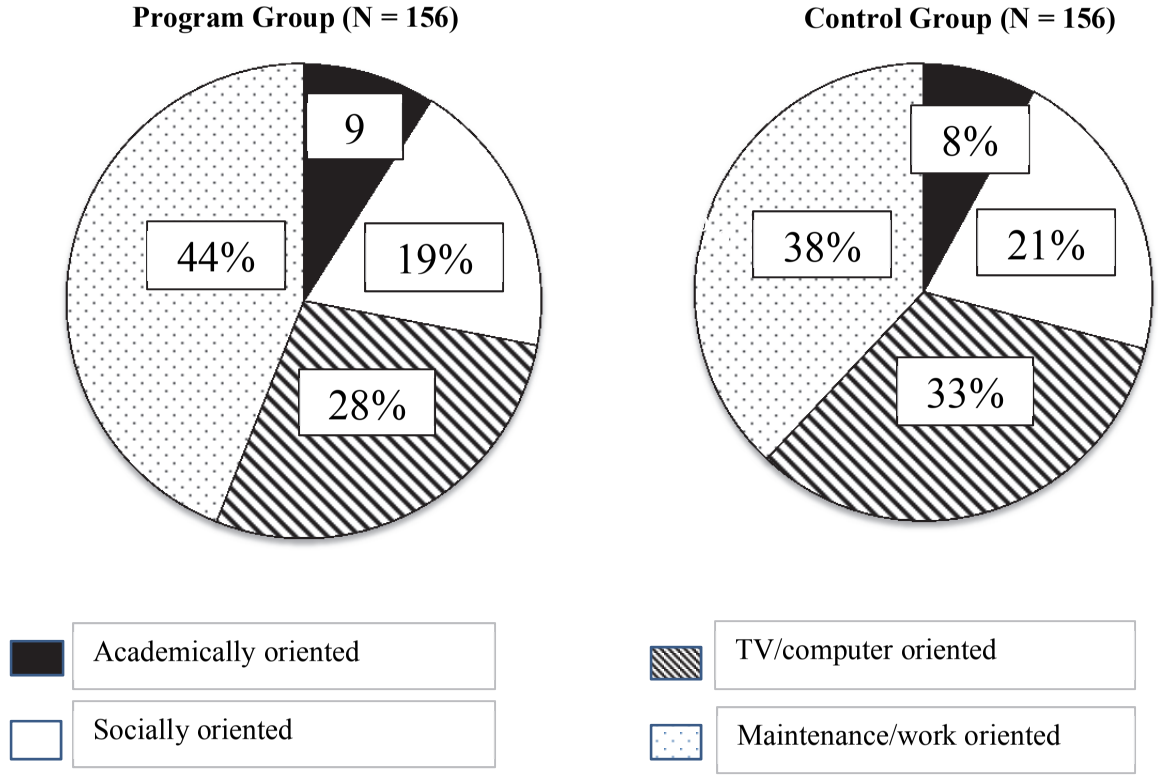
SOURCE: MDRC calculations from Family Rewards 30-Month Embedded Study Survey.

NOTE: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family and sample members.

Figure 2.4

Impacts on Teenagers' Membership in Time Use Groups Among Those Below Proficiency Level on 8th-Grade Math Test

There are no statistically significant differences in the likelihood of being in any activity group between program and control group teenagers.



SOURCE: MDRC calculations from Family Rewards 30-Month Embedded Study Survey.

NOTE: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family and sample members.

program group teenagers in the proficient group are more likely to be in the academically oriented group versus the socially oriented group compared with controls, and also are more likely to be in the academically oriented group versus the maintenance/worker group compared with controls. These impacts are larger than those in the full embedded study sample shown above.

Differences were also explored by gender (see Appendix C). The results observed for the entire sample were concentrated in girls only. More specifically, program group girls are more likely to be in the academically oriented group versus the socially oriented group compared with controls and also are more likely to be in the academically oriented group versus the maintenance/worker group compared with controls. These impacts are larger than those in the full embedded study sample shown above. No differences were found among program and control groups for boys.

Impacts on Individual Activities of Time Use

To complement the above approach with an approach more typically used in impact analysis, program impacts were also assessed by examining the average amount of time spent in each kind of activity for the program and control groups. Unlike the previous approach, this approach considers each activity independently. Teenagers' reported time use was divided into three "kinds" of activities (productive, maintenance, and leisure activities; see Box 2.2). Impacts on these categorized measures of time use are shown in Table 2.1. The length of time spent in each of the three different categories of activities was examined.

There are no statistically significant impacts on teenagers' reports of the way they spent their time on weekday afternoons and evenings when activities are examined individually. When asked about their activities from the after-school hours (2 p.m.) until bedtime, teenagers reported spending on average about two and a half hours a day on productive activities (educational, work, or religious), about two hours on maintenance activities (napping, eating, grooming, commuting) and the most time — three and a half hours — on leisure activities (with friends, watching TV). The amount of time spent on each of these categories was quite similar for teenagers in the program and the control groups.

Table 2.1 also presents data on teenagers' reported time spent with different people (parents, friends) during their participation in the above-mentioned activities. As shown in the table, teenagers spent the most time with their families (about four hours) and, secondly, with peers (about two and a half hours). Family Rewards increased the amount of time teenagers reported spending with their family members by three-fourths of an hour; teenagers in the program group reported spending more time with their family (4.6 hours) than teenagers in the control group (3.9 hours) on a typical weekday. There are no statistically significant differences in the time teenagers spent alone, with peers, with coworkers, or with teachers for the full

Box 2.2

Time Use Measures of Time Spent in Activities

Teenagers reported on what they did, whom they were with, and where they were on a typical weekday beginning at 2 p.m., until they went to bed. Activities were categorized as follows:

Productive activities. Time spent working, in school-related activities (for example, in school, in academic lessons or activities), in religious activities, in unstructured activities, and in arts and cultural activities.

- **Productive educational.** Time spent in class/school, reading, school-work/studying, academic lessons or activities, and clubs or nonacademic activities/lessons
- **Productive work.** Time spent working for pay
- **Productive religious.** Time spent in prayer/worship/meditating/attending church

Maintenance activities. Time spent on eating, personal care, commuting, chores and errands, and resting/napping

Leisure activities. Time spent socializing, watching TV, on the computer, or shopping

sample (although the impact on peers is in the negative direction, consistent with the analyses showing a reduced proportion of socially oriented teenagers in the Family Rewards group).

In addition to the impacts for all teenagers, impacts on average time spent in activities were examined by teenagers' baseline test proficiency (see Table 2.2). There are no statistically significant differences between proficiency groups in the amount of time spent in individual activities. There are, however, some differences in impacts with regard to the individuals teenagers spent their time with, by baseline proficiency groups. Proficient teenagers in the program group spent less time alone than their counterparts in the control group (1.1 versus 1.8 hours on a typical weekday), while there are no significant differences between nonproficient program and control group teenagers. In addition, proficient teenagers in the program group were less likely to spend time with coworkers (0 hours versus 0.2 hours), while there are no significant program impacts among the nonproficient teenagers.

Impacts on time use were examined for boys and girls, and few differences were found (see Appendix Table B.1).

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Table 2.1

Impacts on Hours Spent in Weekday Activities

Outcome	Program Group	Control Group	Difference (Impact)	P-value
Kind of activity				
Productive	2.4	2.4	0.0	0.841
Productive educational	1.6	1.5	0.1	0.678
Productive work	0.2	0.2	0.0	0.922
Productive religious	0.0	0.0	0.0	0.561
Maintenance	2.3	2.1	0.2	0.286
Leisure	3.5	3.5	0.0	0.970
Accompanying individual during activity				
Alone	1.3	1.5	-0.2	0.228
Family	4.6	3.9	0.8 ***	0.008
Peers	2.3	2.6	-0.4	0.123
Coworkers	0.2	0.2	0.0	0.771
Teacher	0.8	0.9	-0.1	0.318
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes vary because of missing values.

Teenagers were asked about a more discrete set of categories for a weekend day. There are no statistically significant differences between teenagers in the program and control groups in the amount of time spent in any of these activities (results shown in Appendix C). The single exception is that teenagers reported spending less time working for pay on the weekend in the Family Rewards group compared with the control group (0.2 hours for program group teenagers compared with 0.4 hours for control group teenagers).

In sum, while there are statistically significant program impacts on the proportion of teenagers in the varying time use groups, there are no statistically significant impacts on the amount of time spent in each activity across all teenagers. However, Family Rewards was found to significantly increase the proportion of time teenagers spent with family, which is quite consistent with the results on time use groups discussed above. These findings are interpreted to

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Table 2.2

Impacts on Hours Spent in Weekday Activities, by Proficiency Level on 8th-Grade Math Test

	Scored at or above proficiency level on annual math test in 8th grade			Scored below proficiency level on annual math test in 8th grade			
Outcome	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	Sig.
Kind of activity							
Productive	2.9	2.9	0.0	2.0	2.0	0.0	
Productive educational	2.2	2.0	0.2	1.2	1.2	0.0	
Productive work	0.1	0.2	-0.1	0.3	0.2	0.1	
Productive religious	0.0	0.1	-0.1	0.0	0.0	0.0	
Maintenance	2.3	2.4	-0.2	2.3	2.0	0.4 *	
Leisure	3.0	3.4	-0.5	3.8	3.5	0.3	
Accompanying individual during activity							
Alone	1.1	1.8	-0.7 **	1.5	1.3	0.1	††
Family	4.8	4.2	0.6	4.5	3.6	0.9 **	
Peers	2.1	2.6	-0.5	2.4	2.6	-0.2	
Coworkers	0.0	0.2	-0.2 *	0.3	0.2	0.1	†
Teacher	1.2	1.2	-0.1	0.6	0.7	-0.1	
Sample size (total = 511)	106	93		156	156		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

mean that (1) Family Rewards has an impact on how teenagers pattern their time use, not on each discrete activity of time use *per se*, and (2) these impacts are observed for the proficient teenagers only. The findings for the proficient teenagers are consistent with the findings from the core report that found impacts on academic outcomes only for this group.[6]

Despite the divergence in findings, it is critical to note that both approaches represent valid estimates of the program's impact, although each answers a slightly different question. Given that, is there an explanation for these seemingly inconsistent findings between the two approaches to examining time use? Several explanations are possible. First, it may be that there was an increase in the amount of time spent on academic activities, but that impact was too small to detect when examined over the entire sample. Indeed, if the impact that was found on time spent in educational activities — 0.1 of an hour, or 6 minutes (see Table 2.1) — was confined to only the 5 percent of the sample of teenagers who shifted from a socially oriented group to an academically oriented group, it would represent 2 hours of increased time for this smaller group. Thus, one explanation may be that there *is* a substantial shift in amount of time spent in activities but that the group affected is too small to observe those impacts when examined over the full sample. Second, it may be that the shift in time use that did occur was not so much related to total time spent in academically oriented activities *per se*, but to the *patterning* of activity participation, or the way they allocated their time across activities. That is, those children who shifted from the socially oriented group to the academically oriented group may have had small shifts in their time spent in several of the activities. These shifts may have been such that they "fit" better with the academically oriented group instead of the socially oriented group, even if the total time spent in academics did not increase substantially relative to what it would have been in the control group. Finally, it may be that the impact on the proportion of teenagers in time use groups is a statistical fluke, and only with replication of these findings in other studies of CCTs can that be determined. Future work will examine each of these possible explanations in greater detail.

However, one way to build confidence in these results is to examine the impacts of Family Rewards on other outcomes that might be related to time use. Doing so can determine if there is at least a consistent "story" of positive program impacts across outcome domains that can lend greater credibility to the findings presented here. The fact that Family Rewards had positive impacts on academic outcomes for the more proficient teenagers in ways that "line up" with the findings reported here on time use groups is noteworthy in this regard. It will also be important to note whether impacts are observed for other outcomes examined later in this chapter and in the next chapter as part of this embedded study that can lend credibility to these findings.

[6]Riccio et al. (2010).

Spending and Saving

Family Rewards has an explicit antipoverty component that should result in a greater level of resources within families and, as a result, greater spending or saving within families. However, whether or not those increased resources would be spent in ways that would benefit children's long-term human capital was an open question. On the one hand, parents might use the increased resources to support their children's academically enriching experiences or to save for future educational opportunities, consistent with the goals of the CCT program. But parents might also decide that these resources needed to be spent on basic necessities (such as food and clothing) or to support leisure activities (such as movies or eating out) that can be difficult to afford for low-income families. In other welfare and antipoverty programs, parents whose income increased spent their money on necessities for their children (child care, food, and clothing).[7] However, parents might be more inclined to spend their resources on their children in the case of Family Rewards, since children "earn" some of the rewards through their own performance on tests or attendance in school.

Given that rewards for certain educational incentives were awarded in part to children, the second question is how teenagers themselves would spend the increased resources they had access to under the program. This information was not collected in the core study; by fielding a survey to these older children themselves, this embedded study provided an opportunity to examine this question directly.

In interpreting these findings, it is critical to be cognizant of the timing of the survey fielding relative to the delivery of reward payments to parents and teens. The interviews took place in the late winter and spring of their third school year in the program (about 30 months following random assignment). During this period, teenagers could be receiving attendance rewards, and parents could be receiving rewards for health-related visits and employment. However, rewards for test scores, which carry some of the highest payment amounts and are paid directly to the teenage children, were not distributed until later in the summer when the test results were released. Therefore, these data provide only a "snapshot" of this particular period during the year of reward receipt and may not reflect how teenagers spent some of the largest reward payment they received. Furthermore, as information was gathered only on certain areas of spending, these data cannot provide a complete accounting of families' full budgets.

Box 2.3 describes the information on spending that was gathered and how it was categorized. Findings on the impact of Family Rewards are presented in Table 2.3.

As shown in Table 2.3, parents reported spending on average more than $600 on their children in a one-month period in these areas (which notably exclude other areas such as hous-

[7]Michalopoulos, Bos, Lalonde, and Verma (2000).

Box 2.3

Measures of Parents' and Teenagers' Spending

Parents and teenagers were asked about spending on a number of items that were thought to comprise the majority of their spending. Spending was asked about in a way that program *and* control group families could answer and, therefore, reflects total dollars spent (irrespective of the source of those dollars), rather than spending from the rewards payments in particular. Participants were asked about their spending using various time periods that encouraged recall of precise information (the previous month for spending on food and clothing that happens frequently; school-year spending for items that are typically purchased in those longer intervals; based on work by Lugo-Gil and Yoshikawa, 2006) and then converted to average monthly spending for all items to "add up" items in common sets of categories.

Spending was categorized into three areas: **productive spending** (that is, on educational and other structured activities and materials), **maintenance spending** (that is, on basic necessities), and **leisure spending** (that is, "fun" money).

Parents' Spending

Productive spending. Spending on books, school-related costs, such as uniforms, out-of-school activities, and games or sporting goods

Maintenance spending. Spending on food, health care (such as prescriptions or co-payments), and clothes or shoes

Leisure spending. Spending on computer, entertainment, DVDs, CDs, or video games

Teenagers' Spending

Productive spending. Spending on school supplies, books or magazines, and after-school activities

Maintenance spending. Spending on household groceries or cleaning supplies, spending on food and clothes

Leisure spending. Spending on music, movies/movie rentals or video games, electronics, and alcohol or cigarettes

ing costs), with approximately two-thirds spent on maintenance items (basic necessities such as food and clothing). Parents reported spending about $100 per month on leisure activities, such as entertainment, and a little more than that on productive activities for their teens (such as books and school activities and expenses).

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Table 2.3

Impacts on Parents' and Teenagers' Spending and Saving

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Parent report				
Total spending in 1 month[a] ($)				
Total spending	695	624	71 *	0.056
Productive spending	156	125	31 ***	0.007
Maintenance spending	434	418	16	0.552
Leisure spending	109	82	27 ***	0.008
Saving and giving				
Save for child's future education (%)	54.1	41.5	12.6 ***	0.005
How often do you set aside money? (1 = never, 5 = every week)	2.1	1.8	0.3 **	0.025
How much money do you set aside? ($)	124	71	54	0.207
Teenager report				
Total spending in 1 month[b] ($)				
Total spending	230	301	-72 **	0.019
Productive spending	34	38	-4	0.600
Maintenance spending	162	213	-51 **	0.020
Leisure spending	35	51	-16 *	0.070
Saving and giving				
Save money (%)	75.8	70.1	5.8	0.156
How much did you save? ($)	89	73	17	0.395
Give money as gift, loan, donation (%)	41.9	42.6	-0.7	0.870
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

[a]Spending on different items was reported for varying time periods ranging from 1 to 6 months. All numbers reported in this table are scaled to a 1-month interval.

[b]Spending on different items was specifically asked about "in the past 4 weeks."

Not surprisingly, given families' increased financial resources, Family Rewards increased the amount of money parents spent on their children. Parents in the program group, relative to those in the control group, reported spending $71 more overall on their teenagers over a one-month period. Levels of spending were higher in the productive category (by $31 per month), which includes spending on books, school-related costs, and games and sporting goods. They were also higher in the leisure category (by $27 per month), which includes spending on entertainment and DVDs, CDs, or video games. Statistically significant impacts on overall spending for maintenance activities are not found. Examining individual items shows significant positive impacts on spending on school activities and games/sporting goods within the larger productive category and on entertainment in the larger leisure category.

As shown in the second panel of impacts, 41.5 percent of parents in the control group reported saving for their teenager's future education, a relatively high proportion of families. Family Rewards has a statistically significant positive impact on this outcome. Parents in the Family Rewards group were about 13 percentage points more likely to be saving for their teenager's future education than parents in the control group (54.1 percent compared with 41.5 percent). They also reported saving more frequently (although the average of 2 on the 5-point scale indicates relatively infrequent saving for most families in both groups). However, parents in the program group did not report putting more money aside than their control group counterparts, on average.

These overall impacts on savings are strong and statistically significant for parents of teenagers who were proficient in math at baseline, but not for the parents of the nonproficient teenagers (see Appendix Table A.1). More specifically, parents of proficient children were 25 percentage points more likely to report saving for their teenager's future educational expenses, while there are no statistically significant impacts for the nonproficient teens. However, impacts on spending are not statistically significantly different across the two groups. With regard to gender subgroups, impacts on savings are much larger and statistically significant for girls and not for boys (see Appendix Table B.2).

As shown in the bottom panel of the table, while there were positive impacts of Family Rewards on parents' reported spending, there were somewhat unexpected *reductions* in children's reported spending as a result of Family Rewards. More specifically, teenagers in the program group reported spending *less* money overall ($72 per month) than their counterparts in the control group, with that reduction concentrated in the maintenance ($51 per month) and leisure ($16 per month) spending categories. Further analyses revealed that this may have been a substitution effect — in which parents' increased spending as a result of the program meant that teenagers did not have to contribute their own resources to family-related expenses, such as food and clothing. The fact that the reduction is concentrated in the maintenance and leisure categories is consistent with this interpretation. At the same time, there were no significant

impacts on teenagers saving or donating money, which would be consistent with this substitution hypothesis.

The fact that there are not *higher* levels of spending or saving among program group members compared with control group members may be because the interviews took place when the rewards teenagers themselves received were quite modest (for example, attendance rewards of $25 per month paid directly to teenagers were available during the period of the interviews but not the larger rewards for credits earned and test score results). The *lower* levels of spending for program group teenagers, despite these modest rewards, may have been the result of program group members' lower likelihood of working for pay (see discussion earlier of time use) and the greater support coming from parents' own contribution to these areas of spending. That said, it was unexpected that this reduction in spending was not accompanied by an increase in savings.

Parent-Teenager Interactions

Family Rewards was thought to change parent-teenager interactions in a number of ways. On the one hand, rewards might shape the climate of the family regarding norms and expectations about children's participation in school and after-school activities, and, as a result of such changes, parents might spend more time being involved in and monitoring their children's activities in and out of school. At the same time, designers expressed concern that Family Rewards, by introducing incentives to families, might increase parent-teenager conflict over time use and money during an already tumultuous period in families' lives. To address these questions, information was collected on measures of parents' monitoring and teenagers' disclosure of their whereabouts and activities as well as parent-teen conflict (see Box 2.4). These findings are presented in Table 2.4.

Parents were asked about how frequently they monitored their teenager's activities and how much they knew about where their teenager was and with whom. In a parallel fashion, children were asked how much they disclosed this same kind of information to their parents. Neither of these measures showed any impacts of the Family Rewards program, although average rates were relatively high for both parents and teenagers (approximately 4 on a 5-point scale), with values on parental monitoring slightly higher than those on teenagers' disclosure.

Teenagers were asked about 13 different topics of potential conflict and, for each, the intensity of the conversation between them and their parents. Impacts were examined on the intensity of the interaction for all topics combined as well as for money-related and school-related topics, in particular, given the focus of the Family Rewards program. As shown in Table 2.4, parents and teens reported low to moderate levels of conflict across the topics (an average

Box 2.4

Measures of Parent-Teenager Interactions

Parental monitoring reflects parents' tracking and surveillance of their child's behavior and activities. Examples of items include: "Do you know what your child does during his/her free time?" "Do you know what your child spends his/her money on?" and "In the last month, has there been a time when you had no idea where your child was at night?"

Teenager disclosure reflects the extent to which teenagers tell their parents about their behaviors and activities. Examples of items include: "Do you talk about how you are doing in the different subjects in school?" "Do you keep much of what you do in your free time secret from your primary caregiver?" and "Do you hide a lot from your primary caregiver about what you do at night/on weekends?"

Family conflict refers to the number of items parents and teenager discuss and the intensity level of these discussions (that is, angry versus calm). High conflict refers to more angry discussions.

score of 2 on a 5-point scale for both teenagers and their parents, where 1 is calm and 5 is angry), with somewhat higher levels of conflict for parents' reports of money-related issues. There are no statistically significant program impacts on any of these measures. While not shown in the table, parents did report discussing *more* money-related issues with their children (2.55 versus 2.37 out of 3 possible money-related issues asked about), as expected due to the offer of rewards, but those discussions were not more intensively negative or conflictual.

Impacts were examined on both of sets of outcomes for the two key subgroups examined throughout this chapter: by teenagers' baseline proficiency and by gender. In both cases, there are no statistically significant differences across these subgroups in impacts on either of these outcomes of parent-teenager interaction (see Appendix Tables A.2 and B.3). In all cases, there are no patterns of statistically significant impacts of the Family Rewards program.

The next chapter turns from impacts on family processes to impacts for the teenagers themselves, focusing on their approaches to schooling, a key possible mechanism for any educational impacts, and their mental health and problem behaviors, key outcomes that might be indirectly affected by the Family Rewards program.

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Table 2.4

Impacts on Parent-Teenager Interactions

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Monitoring/disclosure				
Parental monitoring (5 = high monitoring)	4.3	4.3	0.0	0.928
Teenager disclosure to parent (5 = high disclosure)	3.9	3.8	0.1	0.495
Intensity level of family conflict (5 = angry, 1 = calm)				
Parent report				
Discussion of all issues	2.0	2.1	0.0	0.832
Discussion of money-related issues	1.9	1.9	0.0	0.971
Discussion of school-related issues	2.4	2.3	0.1	0.499
Teenager report				
Discussion of all issues	2.0	2.0	-0.1	0.296
Discussion of money-related issues	1.8	1.9	-0.1	0.520
Discussion of school-related issues	2.1	2.2	-0.2	0.104
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

Chapter 3

The Impact of Family Rewards on Teenagers' Approaches to School and Mental Health and Problem Behaviors

Chapter 3 presents impact findings from this embedded study on teenagers' approaches to schooling and problem behaviors. Specifically, these analyses provide information on the effect of the Family Rewards program on academic processes, as well as on outcomes not directly targeted by the Family Rewards program: mental health outcomes such as depression and anxiety and problem behaviors such as aggression and delinquency and substance use.

A central premise of the Family Rewards program was that by offering educational incentives for attendance and achievement outcomes, increased school attendance and achievement would in turn increase children's interest in school and schoolwork and their sense of academic efficacy. At the same time, designers worried about undermining intrinsic motivation by providing external rewards for academic outcomes. The findings discussed in this chapter show that the program had neither the beneficial effects that were hoped for in terms of academic engagement, efficacy, or expectations nor any harmful effects on teenagers' motivation.

Also discussed in this chapter are the impacts of Family Rewards on outcomes not directly targeted by the program. Arguably, this is one of the most important contributions of this embedded study, as it informs understanding of the full effects on outcomes for teenagers of this holistic CCT program. Here the focus is on teenagers' mental health — where designers were worried about undue pressure on children as a result of the program's incentives — and problem behaviors such as aggression and substance use — where it was less clear whether the program's impacts might be positive or negative. Here the results are unambiguously positive: On outcomes where there were concerns about negative effects (mental health), Family Rewards had no impacts; on outcomes where the expected direction of the impact was not clear (aggression and substance use), there are clear benefits of the program in reducing problem behaviors. While these latter findings require replication, as earlier studies of CCTs did not examine such outcomes, they suggest potentially broader benefits of the Family Rewards program.

Teenagers' Approaches to Schooling

The designers of the Family Rewards program were hopeful that program-driven changes in parents' perceived value of educational attainment and parental socialization of such values might shape their children's own perceptions of the value of educational achievement. By

consequence, Family Rewards could influence teenagers' academic processes, such as choices and decisions about engaging in and persisting in school and schoolwork. Similarly, Family Rewards could heighten teenagers' own expectations about their long-term educational goals. Changes in such important academic processes might also encourage teenagers to work harder in school and score higher on tests, both potentially critical for long-term educational success.

At the same time, the use of cash incentives in the area of children's academic achievement has been the topic of much controversy, particularly in younger children, because of its potential effects on children's motivation to learn. A long history of lab-based research has suggested that the provision of financial rewards can undermine intrinsic motivation.[1] In short, while extrinsic rewards may increase education-relevant behaviors in the short term, they may reduce intrinsic motivation for learning later, when the extrinsic rewards are withdrawn. In fact, more recent work[2] has suggested a more nuanced view, such that if financial incentives can promote individuals' sense of competence, they can actually support intrinsic motivation. Notably, this research is also based primarily on lab experiments, leaving us with little information about how these processes may operate in real-world settings and, more specifically, for low-income parents and their children receiving a range of incentives in a holistic CCT program.

Given that data were collected for this embedded study while teenagers and their families were still receiving rewards, how might impacts on motivation inform our understanding of the program's long-term consequences? If Family Rewards increased children's intrinsic motivation to learn during this period (or at least did not undermine intrinsic motivation), the short-term benefits of the program on children's education behaviors would be more likely to endure after the program ended. But if the program decreased children's intrinsic motivation, any short-term benefits of the incentives might wash out later when the incentives were withdrawn.

Measures of teenagers' approaches to schooling are shown in Box 3.1, and findings are presented in Table 3.1.

In the first panel of Table 3.1, findings are presented regarding teenagers' academic expectations. Despite parents' greater savings for their children's future education, there are no statistically significant program impacts on teenagers' aspirations and expectations to attend and complete college, perhaps because rates were very high (nearly 91 percent of children expected to attend college and almost 86 percent expected to finish college). Such high rates of expectations regarding college attendance are consistent with findings from other research on adoles-

[1]Deci (1971).
[2]Deci and Ryan (2000).

Box 3.1

Measures of Teenagers' Approaches to Schooling

School engagement reflects engagement in classroom and school activities. High engagement refers to trying hard to do well, paying attention in class, working hard in school, and listening carefully in class.

Academic efficacy reflects students' perceptions of their academic abilities and ability to succeed at challenging academic material.

Motivation reflects the driving force to learn. Three measures of teenagers' motivation were examined in this study:

- **Motivation to learn** refers to whether one is extrinsically or intrinsically motivated to learn; that is, does the student perform academic tasks because of external reinforcements (for example, "I will get in trouble if I don't do it"; "I may get a reward if I do it") or because of an internal drive (for example, "It's important for me to do well in school."). Larger positive scores indicate intrinsic motivation, while larger negative scores indicate extrinsic motivation.
- **Mastery goal orientation** refers to the wish to become proficient in a topic to the best of one's ability.
- **Performance-avoidant goal orientation** refers to behaving in a particular way in order to avoid an undesirable outcome (for example, avoiding the demonstration of incompetence to others).

cent expectations.[3] But research has found a weak relationship between such high expectations and actual college attendance rates for low-income adolescents.[4] In reality, college attendance and graduation rates are quite low; only one in three low-income adolescents actually attends college, and only one in seven actually finishes college.[5]

In the second panel of the table, findings are presented on teenagers' reports about the extent to which they were engaged in school, with items assessing the extent to which they were paying attention in class and working hard. No statistically significant impacts are found on this measure of school engagement. Taken in the context of the findings on attendance reported in Chapter 1 and on time use reported in Chapter 2, it appears that while teenagers were

[3]Kao and Thompson (2003).
[4]Rouse (2004).
[5]Bedsworth, Colby, and Doctor (2006).

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Table 3.1

Impacts on Teenagers' Approaches to Schooling

Outcome	Program Group	Control Group	Difference (Impact)	P-Value
Academic expectations (%)				
Hope to complete some college	89.8	91.7	-2.0	0.431
Think will complete some college	90.5	91.8	-1.3	0.612
Hope to finish college	84.9	85.5	-0.5	0.860
Think will finish college	85.8	84.3	1.6	0.608
School processes				
School behavioral engagement	4.3	4.3	0.0	0.557
Academic efficacy	2.9	2.9	0.1	0.252
Motivation				
Motivation to learn (-7 = extrinsic, 7 = intrinsic)	0.7	0.5	0.2	0.421
Mastery goal orientation	4.5	4.5	0.0	0.789
Performance-avoidance goal orientation	3.1	2.9	0.2	0.146
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

more likely to be attending school and more likely to be "academically oriented" in terms of how they were spending their time after 2 p.m. (more time on schoolwork), teens in the program group were *not* more interested or listening more in school than their control group peers while they were in the classroom. In addition, there are no statistically significant impacts on teens' sense of their own "efficacy" in their academic abilities or their thinking that they could succeed in handling challenging material in the classroom. This is unfortunate, since these processes have been linked in educational research to success in school. Perhaps the lack of effects on

these academic processes explains the relatively modest benefits on educational outcomes of the Family Rewards program. It may be that the provision of rewards needs to be paired with interventions that change the quality of educational experiences to affect the way teenagers *approach* schooling.

The third panel of Table 3.1 shows impacts of Family Rewards on motivational factors. Teenagers were asked about their extent of extrinsic versus intrinsic motivation: There are no statistically significant impacts of the Family Rewards program on this measure. There are also no statistically significant impacts of the Family Rewards program on measures of teenagers' mastery-goal orientation (their motivation to become proficient in a topic) or their performance-avoidant goal orientation (their motivation to do their schoolwork to avoid a particular outcome). The fact that the program did not undermine intrinsic motivation should be viewed quite favorably, especially considering the concern about how the provision of rewards might undermine motivation among already struggling students. At the same time, the fact that intrinsic motivation and teenagers' motivation to become proficient was not increased is in line with the above-mentioned findings on teenagers' engagement and efficacy. Family Rewards did not appear to substantially change the way teens approached schooling, except with regard to how they spent their time (that is, attending school and becoming more academically oriented in how they spent their after-school hours).

Given the greater impacts on educational outcomes (especially test scores) for those teenagers who were better prepared academically for school based on baseline test scores, it might have been expected that Family Rewards would have positive impacts on these measures for those teenagers who scored at proficiency levels in eighth grade. These results are shown in Appendix Table A.3. The findings show that there were no differences in program impacts by baseline proficiency, with few effects for either group. There were also no differences in impacts on these measures for boys and girls (see Appendix B.4).

Teenagers' Mental Health and Problem Behaviors

In addition to effects on the key targets of the program, this study was intended to address the possible effects of programs like Family Rewards on teenagers' mental health and problem behaviors. Understanding the effects on these nontargeted outcomes is critical to understanding the broader effects of the Family Rewards program. The addition of a survey of the teenagers themselves as part of this embedded study was necessary to reliably gather this information, since parents are especially poor reporters of teenagers' behaviors in these areas.

A number of studies have found an association between family income and children's mental health outcomes.[6] Therefore, the fact that Family Rewards increases income within families bodes well for potential reductions in mental health problems. In addition, the literature has found a strong link between academic competence and psychosocial outcomes among teenagers, such that the greater educational benefits of the Family Rewards program could increase self-esteem and reduce mental health and problem behaviors.[7] At the same time, parents in the program group, in an effort to receive the financial incentive rewards, might heighten their expectations for their children's academic achievement and increase parental pressure, at the cost of teenagers' mental health. While the designers of Family Rewards were aware of this concern and attempted to set rewards at levels to avoid such unintended consequences for children, there was little time to test empirically these assumptions before the program began. Therefore, it was important to do so as part of this embedded study.

With regard to problem behaviors, it was similarly unclear whether Family Rewards might have positive or negative effects. On the one hand, the message behind the program is clearly about the value of schoolwork, which might encourage teenagers to spend more time on their homework and other school-related activities rather than spend time engaging in risky behaviors. Yet, with greater resources in hand (in particular because some of the educational rewards were given directly to teenagers), older children might spend their money on the kinds of activities that would increase their engagement in problem behaviors (such as drinking and using drugs), to the detriment of their longer-term outcomes.

For these reasons, this embedded study included key measures of mental health and problem behaviors as reported by the teenagers themselves (described in Box 3.2). Findings on the impact of Family Rewards on these measures are shown in Table 3.2.

As shown in the top panel of Table 3.2, there are no statistically significant impacts of the Family Rewards program on measures of teenagers' depression and anxiety. Given concerns that parents would put undue pressure on their children and increase their children's anxiety, this "null" finding should be seen as good news for the program.

The second panel presents results on problem behaviors. While there are no statistically significant impacts on items reflecting delinquent activity (such as vandalism and theft), teenagers in the Family Rewards program did report lower levels of aggression with peers compared with their control group counterparts (a 10 percentage point reduction). Moreover, there were benefits of the Family Rewards program on reducing teenagers' substance use, as discussed in detail below.

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[6]Costello, Compton, Keeler, and Angold (2003); Gershoff, Aber, and Raver (2005).

[7]Roeser, Eccles, and Strobel (1998); Roeser, Eccles, and Freedman-Doan (1999).

Box 3.2

Measures of Teenagers' Mental Health and Problem Behaviors

Depression and **Anxiety** reflect a teenager's level of each construct on an index from 0-13. Teenagers answered 13 yes/no questions regarding depression, and 13 yes/no questions regarding anxiety; scores were summed. Examples for depression include: "Nothing is fun anymore"; "I feel sad." Examples for anxiety included: "I worry about little things"; "I get nervous."

Delinquent behaviors reflect acts that would be considered a criminal offense if committed by an adult. Items include: "I took something from someone at school that did not belong to me"; "I broke or ruined something on purpose that belonged to the school."

Aggressive behaviors reflect acts intended to cause harm to others. Items include: "Teased students to make them angry"; "Threatened to hurt or hit someone."

Any substance use was assessed with four items about whether or not teenagers smoked cigarettes, drank alcohol, used marijuana, and used hard drugs during the past month.

Peer substance use was assessed with three items about how many friends drank alcohol, used marijuana, and used hard drugs in the past month. A four-point scale was used for all items, with 1 = "none"; 2 = "a few"; 3 = "some"; and 4 = "most."

With regard to teenagers' own use of substances, the rates shown probably reflect an underreporting of use, with only about 7 percent of control group teenagers reporting smoking cigarettes, nearly 27 percent reporting using alcohol, nearly 14 percent reporting using marijuana, and less than 1 percent reporting using hard drugs. Family Rewards resulted in statistically significant *reductions* in teenagers' use of substances, for a number of key substances. Statistically significant impacts are shown in the percentage of teenagers' own use of alcohol (an almost 14 percentage point reduction) and marijuana (a 7 percentage point reduction). No statistically significant impacts are found for the already very low rates of use of cigarettes or hard drugs (although the frequency of cigarette use was significantly reduced in the program group, not shown in table). Qualitative analysis of program group participants reveals that there was some misunderstanding among families that Family Rewards was a program that rewarded "good behavior" generally.[8] This misunderstanding might have led some teenagers to engage in less risky behaviors; some might have found it easier to reduce their problem behaviors than increase their academic achievement.

[8]Greenberg, Dechausay, and Fraker (2011).

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Table 3.2

Impacts on Teenagers' Mental Health and Problem Behaviors

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Mental health outcomes					
Depression (0 to 13 scale)	1.6	1.5	0.1	0.557	0.05
Anxiety (0 to 13 scale)	3.6	4.0	-0.4	0.148	-0.13
Problem behaviors					
Delinquent behaviors (%)	46.1	52.7	-6.6	0.141	-0.13
Aggressive behaviors (%)	14.1	24.1	-9.9 ***	0.004	-0.25
Any substance use in past month (%)	17.5	32.6	-15.2 ***	0.000	-0.35
Ever smoked cigarettes (%)	3.8	6.5	-2.7	0.167	-0.12
Ever drank alcohol (%)	12.9	26.6	-13.6 ***	0.000	-0.34
Ever used marijuana (%)	6.6	13.5	-6.9 **	0.010	-0.23
Ever used hard drugs (%)	0.4	0.4	-0.1	0.911	-0.01
Number of friends using substances in past month (1 = none, 2 = a few, 3 = some, 4 = most)	1.81	1.99	-0.19 ***	0.004	-0.27
Number of friends drinking alcohol	2.19	2.40	-0.21 **	0.022	-0.21
Number of friends using marijuana	2.07	2.34	-0.27 ***	0.007	-0.25
Number of friends using hard drugs	1.18	1.24	-0.05	0.286	-0.10
Sample size (total = 511)	262	249			

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.
Rounding may cause slight discrepancies in calculating sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to the differences between outcomes for the program and control groups.
The p-value indicates the likelihood that the difference between the program and control group arose by chance.

One skeptical interpretation of these results is that teenagers in the program group believed that their behavior, including their use of alcohol and drugs, would affect their program rewards. Therefore, they would be more likely than their control group counterparts to *report* lower levels of such use (even though they might be using such substances as frequently). In this case, the lower rates would be simply a result of a reporting bias, not a "true" benefit of the program on teens' behavior. To investigate this and to examine the impact of Family Rewards on peer influences in their own right, teenagers were also asked about their *peers'* behavior, which may not be subject to the same kind of reporting bias. In the case of these outcomes, Family Rewards was also found to show benefits. Rates for teenagers' peers are (not surprisingly) higher than teens own reported use, at approximately 80 percent, 72 percent, and 18 percent for any friends using alcohol, marijuana, and other drugs, respectively (data not shown). But as

seen in the bottom panel of Table 3.2, teenagers in the program group reported statistically significantly *fewer* friends who used alcohol and marijuana than those in the control group (when asked how many friends used these substances on a scale ranging from none to most). These findings show a consistent pattern of reduction in risky behaviors for the teenagers in the Family Rewards program. This is important, given that these are outcomes that were not directly targeted by the program. Notably, these effects occurred despite the greater resources to which these teenagers had access in the program group, suggesting that the teenagers were not using their increased resources to purchase drugs or alcohol.

These findings are consistent with effects on time use reported in Chapter 2. The program appears to have changed the way teenagers spent their time (that is, there were fewer socially oriented teens), and perhaps as a result, these teenagers were behaving in less aggressive ways with their peers and using substances less. It is probable that the program was not directly affecting teenagers' friends' behaviors. Rather, the program might have been affecting the choice of the peer groups with whom teens were spending their time. As the program began just as the teenagers entered high school, it might have affected the development of peer groups at this important school (and developmental) transition.

Impacts again were examined by teenagers' proficiency status at baseline as well as by gender. Despite the greater educational benefits for the more proficient teenagers, effects on problem behaviors were similar across these subgroups. Moreover, effects on substance use did not vary substantially for boys and girls. Results of both of these subgroups are presented in Appendix Tables A.4 and B.5.

In the next and final chapter, the findings presented in this chapter — neutral effects on academic processes and mental health outcomes and reductions in problem behaviors — are discussed in the context of the other findings of the Family Rewards program. Also, the implications of these findings are discussed for the potential long-term effects of this program on outcomes for teenagers as they move into adulthood.

Chapter 4

Conclusion

Chapter 4 summarizes the key findings of this report on the child and family embedded study of the Family Rewards program. The findings are placed in the global context of holistic conditional cash transfer (CCT) policies that target multiple domains, and the chapter discusses possible next steps for this area of research and intervention.

Key Findings

The evidence emerging from this embedded study is encouraging, showing that some behaviors of parents and children can be changed for the good by the CCT incentives offered by the Family Rewards program. And in cases where concerns were raised that the program could cause increased parent-teenager conflict, increased anxiety on the part of teenagers, and decreased intrinsic motivation for teenagers, there was no evidence that the program had any of these unintended consequences. At the same time, a number of plausible processes that could be activated as a result of the program were not affected, highlighting areas that might be directly targeted in future interventions that include CCTs.

Five main conclusions emerge from this study of the Family Rewards program:

- **Family Rewards increased the proportion of teenagers who were academically oriented in how they spent their time.** Family Rewards did lead to a shift in the way teenagers allocated their time. While there were no overall differences in the average hours they spent engaged in different types of activities (for example, school-related activities, leisure activities, self-care activities), teenagers in the program group were more likely to be categorized as being in an academically oriented group and less likely to be categorized as being in a socially oriented group than the teenagers in the control group, based on the proportion of their time spent in the after-school hours. This finding was concentrated among the teenagers who were academically proficient based on their baseline test scores. This is consistent with findings from the core study that these teenagers improved their educational outcomes as a result of the program.

- **With regard to the way teenagers and their parents spent their money, Family Rewards had modest positive effects in facilitating parents' investment in children's human capital.** Parents were more likely to save for their child's future educational expenses and were more likely to invest fi-

nancial resources in their teenagers (for example, spending on books, magazines, and school activities) as a result of the increase in income. As a result, it appears that teenagers did not have to contribute their own resources to these family-related expenses as extensively and thus reduced their spending relative to their control group peers.

- **Family Rewards did not affect interactions between parents and teenagers, for better or worse.** On the one hand, concerns about greater parent-child conflict were not borne out in the analysis of the effects of the Family Rewards program. But parents were also not found to engage in greater monitoring of their teenager's behavior, as might be expected if Family Rewards was causing large changes in how families interact with their teenagers.

- **Family Reward did not affect the academic processes thought to mediate any benefits to student academic outcomes.** While students were more "academically oriented" in terms of how they spent their after-school time, they did not report greater engagement in school (such as listening in class or paying attention) or a greater sense of efficacy about schoolwork. The time use group findings suggest that they spent more time on schoolwork, even though they were not more interested in their learning while in school. On the positive side, the provision of rewards did not appear to undermine intrinsic motivation, a central concern about this program at the outset.

- **Family Rewards reduced teenagers' problem behaviors, key outcomes not directly targeted by the intervention.** Teenagers in the program group reported lower levels of aggression and lower levels of substance use (alcohol and marijuana use) than their peers in the control group, which could bode well for their long-term outcomes.

Putting the Findings in Context: Research on CCTs

Comprehensive CCTs have been tested in a number of international contexts: in nine Latin American countries and at least 10 others, primarily in South Asia and Africa. Rigorous evaluation studies of CCTs in Mexico,[1] and early reviews of work in Latin America[2] and other parts of the world,[3] have documented improvements in child and adult health,[4] school attend-

[1]Gertler (2004); Skoufias (2005).
[2]Rawlings (2005).
[3]Adato and Bassett (2008).
[4]Rivera et al. (2004).

ance,[5] and, when the transfers are sufficiently high, household poverty and food adequacy. Probably the most influential of these models is Mexico's Oportunidades program. Launched in 1997, this program was designed to promote preventive health activities, nutrition, and school attendance among children. Evaluated with an experimental design, Oportunidades was found to improve nutritional status for young children and to increase enrollment rates at the secondary school level by small amounts. [6] Yet, the Oportunidades program generally did not affect older children's health status or scores on achievement tests.[7]

Recently, a comprehensive review of the design, evaluation, and impact of CCTs in 19 different nations conducted by economists at the World Bank found reductions in poverty and more use of health and education services.[8] However, when it came to what they referred to as "final outcomes," such as child learning and child health status in the long term, mixed impacts were found across the range of CCT initiatives. This inconsistency in key developmental outcomes suggests that the effects of CCTs on their intended aim to improve human capital formation in the long run have yet to be fully identified. Understanding how and why CCTs may be (or may not be) affecting children's mental health, behavior, and academic motivation is a key contribution of this study to the literature and, moreover, is critical to understanding what policy levers may be associated with improving developmental outcomes for at-risk children.

Looking Forward: The Next CCT and Future Findings from Family Rewards

As discussed in detail in Riccio et al.,[9] the Family Rewards program had modest impacts on high school students' academic achievement, but only for a portion of the sample (those children who scored at proficiency levels on baseline test scores). The results of this embedded study shed light on some hypotheses to explain why this may have occured. There were changes in the way families allocated financial resources and small changes in the amount of time students spent on academic activities rather than social activities, but only for the academically proficient teenagers and their parents. There were no statistically significant impacts on key hypothesized mediators among families, such as parental monitoring. Perhaps even more importantly, key student-level academic processes such as perceived academic efficacy as well as academic expectations were unchanged by the program. Perhaps, then, the program did not change enough of the key mediating mechanisms, and as a result, the expected changes in final outcomes were not observed across a larger proportion of the sample.

[5]Schultz (2001).
[6]Schultz (2004).
[7]Behrman, Parker, and Todd (2005); Behrman, Sengupta, and Todd (2000).
[8]Fiszbein and Schady (2009).
[9]Riccio et al. (2010).

These results suggest several directions for future work. First, more attention needs to be paid to redesigning incentives that are effective among teenagers who are not academically proficient. Second, future CCT initiatives in the United States might consider redesigning incentives to directly target these mediating processes in order to produce larger and more sustained impacts on outcomes. For example, rather than incentivizing academic achievement directly, rewards could offer incentives for students to attend academic tutoring programs or to join academic clubs, which have been shown to improve academic achievement and might change the way students approach schooling more effectively.[10] Moreover, CCT programs might be more effective at changing academic processes when paired with programs to improve the quality of the educational experiences of children. Students in the Family Rewards program were attending a mixed group of schools in terms of quality; some of the schools were of relatively low quality. Perhaps the impacts on attendance and in the way students spent their after-school time were not sufficient to change how students approached schooling in the context of the type of school they attended.

It will be critical to examine the effects of the Family Rewards program in the long term. While Family Rewards did not have many of the hoped-for effects on academic processes in terms of the way students approached schooling, it did have positive impacts on students' activity participation (in terms of more teens being in an academically oriented group) and on parents' saving for children's future education. Combined with the reductions in teenagers' aggression and substance use, these outcomes point to potential long-term benefits of the program for these teenagers as they move into adulthood. Fortunately, results from both the core study and the embedded study are being reviewed for implications for the redesign of CCT 2.0 through the new efforts supported by the Social Innovation Fund.

Future reports on this study will present findings on the program's impacts at later points in the program. One will examine impacts three years after random assignment, around the time that the program itself was ending, and the final report will examine results over a five-year follow-up period, including two years after the program ended. The postprogram follow-up period will allow the evaluation to determine the long-term implications of the Family Rewards program and those of the particular findings from this embedded study of teenagers and their parents.

[10]Coie and Krehbiel (1984).

Appendix A

Supplementary Tables for Chapters 2 and 3: Proficiency Subgroup Findings

The Opportunity NYC Demonstration: Family Rewards

Table A.1

Impacts on Parents' and Teenagers' Spending and Saving, by Proficiency Level on 8th-Grade Math Test

	Scored at or above proficiency level on annual math test in 8th grade			Scored below proficiency level on annual math test in 8th grade			
Outcome	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	Sig.
Parent report							
Total spending in 1 month[a] ($)							
Total spending	724	601	124 **	684	630	54	
Productive spending	154	126	28	158	123	35 **	
Leisure spending	104	73	31 **	113	87	26 *	
Maintenance spending	470	403	67	415	421	-6	
Saving and giving							
Save for child's future education (%)	63.3	38.3	25.0 ***	47.9	43.4	4.4	††
How often do you set aside money? (1 = never, 5 = every week)	2.3	1.8	0.5 **	2.0	1.8	0.1	
How much money do you set aside? ($)	99	101	-2	143	49	95	
Anyone help pay expenses for child? (%)	32.3	21.2	11.1 *	0.3	0.2	0.1	
How much help was provided this year? ($)	134	87	47	226	114	112	
Teenager report							
Total spending in 1 month[b] ($)							
Total spending	175	249	-74 **	266	333	-67	
Productive spending	34	30	4	36	39	-3	
Maintenance spending	117	179	-62 ***	190	238	-48	
Leisure spending	24	40	-16	41	57	-16	
Saving and giving							
Save money (%)	74.1	66.1	8.1	77.5	72.1	5.4	
How much did you save? ($)	67	63	4	102	80	22	
Give money as gift, loan, donation? (%)	39.1	47.9	-8.8	44.1	39.2	4.9	
How much did you give? ($)	8	22	-13 ***	20	15	5	††
Sample size (total = 511)	106	93		156	156		

(continued)

Table A.1 (continued)

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

[a]Spending on different items was reported for varying time periods ranging from 1 to 6 months. All numbers reported in this table are scaled to a one-month interval.

[b]Spending on different items was specifically asked about "in the past 4 weeks."

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Table A.2

Impacts on Parent-Teenager Interactions, by Proficiency Level on 8th-Grade Math Test

Outcome	Scored at or above proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Scored below proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Sig.
Monitoring/disclosure							
Parental monitoring (5 = high monitoring)	4.5	4.4	0.1	4.3	4.3	0.0	
Teenager disclosure (5 = high disclosure)	4.0	4.0	0.0	3.8	3.7	0.0	
Intensity level of family conflict (5 = angry, 1 = calm)							
Parent report							
Discussion of all issues discussed	1.9	1.9	0.0	2.1	2.2	0.0	
Discussion of money-related issues	1.7	1.7	0.0	1.9	2.0	-0.1	
Discussion of school-related issues	2.1	2.1	0.0	2.5	2.5	0.1	
Teenager report							
Discussion of all issues discussed	1.9	2.1	-0.2 *	2.0	2.0	0.0	
Discussion of money-related issues	1.6	2.0	-0.4 **	1.9	1.8	0.1	††
Discussion of school-related issues	2.0	2.3	-0.3 *	2.1	2.2	-0.1	
Sample size (total = 511)	106	93		156	156		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

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Table A.3

Impacts on Teenagers' Approaches to Schooling, by Proficiency Level on 8th-Grade Math Test

Outcome	Scored at or above proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Scored below proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Sig.
Academic expectations (%)							
Hope to complete some college	96.5	96.4	0.1	84.9	89.2	-4.3	
Think will complete some college	97.0	95.8	1.2	85.4	89.9	-4.5	
Hope to finish college	92.7	92.1	0.6	79.4	81.8	-2.4	
Think will finish college	95.3	92.2	3.1	78.9	79.8	-0.8	
School processes							
School behavioral engagement	4.4	4.3	0.0	4.3	4.2	0.0	
Academic efficacy	2.9	3.0	0.0	3.0	2.8	0.1	*
Motivation							
Motivation to learn (7 = intrinsic, -7 = extrinsic)	-0.8	-0.2	-0.6	*	-0.6	-0.7	0.1	
Mastery goal orientation	4.6	4.5	0.1		4.4	4.4	0.0	
Performance-avoidance goal orientation	3.0	2.7	0.3	*	3.2	3.1	0.1	
Sample size (total = 511)	106	93			156	156		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The Opportunity NYC Demonstration: Family Rewards

Table A.4

Impacts on Teenagers' Mental Health and Problem Behaviors, by Proficiency Level on 8th-Grade Math Test

Outcome	Scored at or above proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Scored below proficiency level on annual math test in 8th grade: Program Group	Control Group	Difference (Impact)	Sig.
Mental health outcomes (0 to 13 scale)							
Depression (0 to 13 scale)	1.4	1.1	0.3	1.8	1.8	0.0	
Anxiety (0 to 13 scale)	3.5	4.1	-0.6	3.7	3.9	-0.2	
Problem behaviors							
Delinquent behaviors (%)	43.4	50.6	-7.2	47.5	54.4	-6.9	
Aggressive behaviors (%)	14.0	21.7	-7.6	14.1	25.6	-11.5	**
Any substance use in past month (%)	10.8	29.6	-18.8	21.2	35.2	-14.0	***
Ever smoked cigarettes (%)	1.7	1.3	0.3	4.8	9.9	-5.1	*
Ever drank alcohol (%)	8.1	28.4	-20.3	15.9	25.8	-10.0	**
Ever used marijuana (%)	3.8	8.6	-4.8	8.0	17.1	-9.1	**
Ever used hard drugs (%)	0.0	0.0	0.0	0.6	0.7	-0.1	
Number of friends using substances in past month (1 = none, 2 = a few, 3 = some, 4 = most)	1.8	2.0	-0.2	1.8	2.0	-0.2	***
Number of friends drinking alcohol	2.2	2.4	-0.2	2.2	2.4	-0.3	**
Number of friends using marijuana	2.1	2.4	-0.3	2.1	2.3	-0.3	**
Number of friends using hard drugs	1.2	1.2	-0.1	1.2	1.3	-0.1	
Sample size (total = 511)	106	93		156	156		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

Appendix B

Supplementary Tables for Chapters 2 and 3: Gender Subgroup Findings

The Opportunity NYC Demonstration: Family Rewards

Table B.1

Impact on Hours Spent in Weekday Activities, for Girls and Boys

	Girls			Boys			
Outcome	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	Sig.
Kind of activity							
Productive	2.3	2.4	-0.1	2.4	2.4	-0.1	
Productive educational	1.8	1.7	0.1	1.4	1.4	0.0	
Productive work	0.1	0.3	-0.1	0.3	0.2	0.1	
Productive religious	0.0	0.0	0.0	0.0	0.0	0.0	
Maintenance	2.5	2.4	0.0	2.1	1.8	0.3	
Leisure	3.3	3.0	0.2	3.7	3.9	-0.2	
Accompanying individual during activity							
Alone	1.2	1.3	0.0	1.4	1.7	-0.3	
Family	4.9	4.2	0.7	4.3	3.5	0.8	*
Peers	2.1	2.2	-0.1	2.5	3.1	-0.6	
Coworkers	0.1	0.2	-0.1	0.2	0.2	0.0	
Teacher	0.8	1.0	-0.2	0.9	0.9	-0.1	
Sample size (total = 510)	141	134		121	114		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

One teenager did not report gender. This teenager is not included in these analyses.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The Opportunity NYC Demonstration: Family Rewards

Table B.2

Impacts on Parents' and Teenagers' Spending and Saving, for Girls and Boys

Outcome	Girls				Boys				Sig.
	Program Group	Control Group	Difference (Impact)		Program Group	Control Group	Difference (Impact)		
Parent report									
Total spending in 1 month[a] ($)									
Total spending	712	614	98	**	672	641	32	##	####
Productive spending	165	111	54	***	144	141	3	##	††
Maintenance spending	121	87	34	**	95	77	18	##	####
Leisure spending	429	417	12	#REF!	437	423	14	##	####
Saving and giving									
Save for child's future education (%)	60.2	38.1	22.2	***	45.7	46.3	-0.6	##	††
How often do you set aside money? (1 = never, 5 = every week)	2.3	1.8	0.4	**	1.9	1.9	0.0	##	####
How much money do you set aside? ($)	176	95	81	#REF!	58	53	5	##	####
Anyone help pay expenses for child? (%)	30.8	24.5	6.3	#REF!	27.5	18.2	9.3	*	####
How much help was provided this year? ($)	255	128	127	#REF!	101	54	47	##	####
Teenager report									
Total spending in 1 month[b] ($)									
Total spending	195	295	-100	**	271	307	-36	##	####
Productive spending	29	38	-9	#REF!	36	40	-3	##	####
Maintenance spending	145	205	-60	**	182	222	-40	##	####
Leisure spending	21	52	-31	***	55	45	9	##	††
Saving and giving									
Save money (%)	72.3	67.7	4.6	#REF!	81.0	71.5	9.5	##	####
How much did you save? ($)	61	63	-2	#REF!	123	84	40	##	####
Give money as gift, loan, donation? (%)	44.2	45.3	-1.0	#REF!	39.6	38.7	0.9	##	####
How much did you give? ($)	13	16	-3	#REF!	20	17	3	##	####
Sample size (total = 510)	141	134			121	114			

(continued)

Table B.2 (continued)

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

One teenager did not report gender. This teenager is not included in these analyses.

[a]Spending on different items was reported for varying time periods ranging from 1 to 6 months. All numbers reported in this table are scaled to a 1-month interval.

[b]Spending on different items was specifically asked about "in the past 4 weeks."

The Opportunity NYC Demonstration: Family Rewards

Table B.3

Impacts on Parent-Teenager Interactions, for Girls and Boys

Outcome	Girls			Boys			Sig.
	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	
Monitoring/disclosure							
Parental monitoring (5 = high monitoring)	4.4	4.4	0.0	4.2	4.3	0.0	
Teenager disclosure (5 = high disclosure)	4.0	3.9	0.0	3.7	3.7	0.0	
Intensity level of family conflict (5 = angry, 1 = calm)							
Parent report							
Discussion of all issues discussed	1.9	2.0	0.0	2.2	2.2	0.0	
Discussion of money-related issues	1.8	1.8	0.1	1.9	1.9	0.0	
Discussion of school-related issues	2.1	2.2	-0.1	2.7	2.4	0.2	
Teenager report							
Discussion of all issues discussed	2.0	2.1	-0.1	1.9	1.9	0.1	
Discussion of money-related issues	1.8	2.0	-0.2	1.8	1.6	0.2	††
Discussion of school-related issues	2.1	2.3	-0.3 *	2.1	2.1	0.0	
Sample size (total = 510)	141	134		121	114		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

One teenager did not report gender. This teenager is not included in these analyses.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The Opportunity NYC Demonstration: Family Rewards

Table B.4

Impacts on Teenagers' Approaches to Schooling, for Girls and Boys

Outcome	Girls			Boys			Sig.
	Program Group	Control Group	Difference (Impact)	Program Group	Control Group	Difference (Impact)	
Academic expectations (%)							
Hope to complete some college	92.0	96.4	-4.4	88.2	85.3	2.9	
Think will complete some college	95.6	95.4	0.2	85.1	86.9	-1.8	
Hope to finish college	89.0	91.2	-2.2	80.6	78.3	2.2	
Think will finish college	94.1	88.6	5.5 *	76.8	78.4	-1.7	
School processes							
School behavioral engagement	4.5	4.4	0.1	4.2	4.2	0.0	
Academic efficacy	3.0	2.9	0.0	2.9	2.9	0.0	
Motivation							
Motivation to learn (7 = intrinsic, -7 = extrinsic)	3.0	2.9	0.1	3.2	3.1	0.0	
Mastery goal orientation	4.6	4.5	0.1	4.3	4.4	0.0	
Performance-avoidance goal orientation	3.1	2.8	0.3 *	3.2	3.1	0.0	
Sample size (total = 510)	141	134		121	114		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

One teenager did not report gender. This teenager is not included in these analyses.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

The Opportunity NYC Demonstration: Family Rewards

Table B.5

Impacts on Teenagers' Mental Health and Problem Behaviors, for Girls and Boys

Outcome	Girls: Program Group	Girls: Control Group	Girls: Difference (Impact)	Boys: Program Group	Boys: Control Group	Boys: Difference (Impact)	Sig.
Mental health outcomes							
Depression (0 to 13 scale)	2.0	1.8	0.1	1.3	1.1	0.2	
Anxiety (0 to 13 scale)	4.1	4.5	-0.4	3.1	3.2	-0.2	
Problem behaviors							
Delinquent behaviors (%)	40.6	46.1	-5.5	53.4	59.1	-5.7	
Aggressive behaviors (%)	11.8	18.9	-7.2	16.9	30.4	-13.5 **	
Any substance use in past month (%)	13.6	31.2	-17.7 ***	22.1	33.5	-11.4 *	
Ever smoked cigarettes (%)	2.6	7.0	-4.4 *	5.3	5.8	-0.5	
Ever drank alcohol (%)	11.0	26.5	-15.5 ***	14.4	26.8	-12.3 **	
Ever used marijuana (%)	2.9	14.1	-11.2 ***	11.2	11.8	-0.6	†
Ever used hard drugs (%)	-0.1	0.8	-0.9	0.8	0.0	0.8	
Number of friends using substances in past month (1 = none, 2 = a few, 3 = some, 4 = most)	1.8	2.0	-0.2 **	1.8	1.9	-0.1	
Number of friends drinking alcohol	2.1	2.4	-0.3 **	2.2	2.4	-0.1	
Number of friends using marijuana	2.1	2.4	-0.4 ***	2.1	2.2	-0.1	
Number of friends using hard drugs	1.2	1.3	-0.1	1.2	1.2	0.0	
Sample size (total = 510)	141	134		121	114		

(continued)

Table B.5 (continued)

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Differences across subgroup impacts were tested for statistical significance. Statistical significance levels are indicated as follows: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

One teenager did not report gender. This teenager is not included in these analyses.

A two-tailed t-test was applied to the differences between outcomes for the program and control groups.

Appendix C

Additional Analyses on Measuring Teenagers' Time Use

This appendix includes two additional sets of analyses. The first includes a more detailed explanation of the cluster analysis used to assess teenagers' time use, and the second includes additional analyses on teenagers' weekend time use.

Cluster Analysis

Teenagers were asked about the activities they engaged in beginning at 2 p.m. on a typical weekday until they went to bed. Questions began with: "What were you doing at 2:00 p.m. [YESTERDAY/THURSDAY]?" Activities were coded into one of 23 categories by the interviewer. The interviewer then asked how long the reported activity took, where they were during this activity, and whom they were with (alone, with parents, with friends, with boyfriend/girlfriend, with coworkers, with family members other than parents, with teachers, or with someone else). The interviewer then prompted for the next activity by asking: "What did you do next on [YESTERDAY/THURSDAY]?" and the same series of follow-up questions were asked for this activity. This line of questioning continued until the teenagers reported going to sleep for the night. All activities were later categorized in the following way:

- **Academic activities** (reading, schoolwork/studying; in class/school; academic lessons or activities)
- **Social** (hanging out with friends/family; talking or texting on the phone; having sex)
- **Religious activities** (Praying/worshiping/meditating/attending church)
- **Family chores/work** (doing housework/chores; taking care of children/siblings)
- **Work** (working for pay)
- **Organized activities** (clubs for nonacademic activities/lessons/sport practice)
- **TV/computer** (watching TV or videos; computer/Internet/e-mail)
- **Maintenance** (self-care or grooming; eating or drinking; exercise; preparing meals or snacks; commuting, traveling to and from school or work; napping/resting; relaxing; went to bed; shopping; commuting to other places)

The total time spent in each activity was summed within categories. All variables were standardized to calculate the total time in each activity as a fraction of total time reported on. All variables ranged from 0 to 1.

The cluster analysis was conducted using pooled data across program and control groups; it gives information about postrandomization patterns of time use. The following steps were taken as recommended by Milligan,[1] so the cluster analysis relied on both hierarchical and iterative methods. There is no assumption of normally distributed data or of uncorrelated variables for this clustering method, although all variables do need to have the same range, which was accomplished by scaling each as a proportion of total time awake.

The first step of hierarchical clustering uses Ward's minimum-variance clustering method, which is an agglomerative hierarchical clustering method[2] designed to generate clusters in such a way that the variance within the clusters is minimal. In this method, each individual case begins in its own cluster. The proximity between every possible pair of individuals is calculated using the squared Euclidean distance, in an N-dimensional space, where N is equal to the number of variables on which subjects are clustered; in this case N = 8. The Euclidean distance was calculated by first finding the difference between the scores of every two subjects on each variable included in the cluster analysis, squaring each of the differences, and then summing them all.[3] Ward's method then searches for the two individuals with the smallest squared Euclidean distance, and those cases are then merged to form a new cluster that replaces the two individual ones. It continues to merge cases in this way until the number of requested clusters is reached.[4]

Results from the clusters identified in the hierarchical analysis are then used to inform the starting values for clusters in the iterative solution,[5] using a k-means algorithm for determining cluster membership, which has been proven to produce superior recovery of cluster structures compared with other methods[6] by allowing subjects to change clusters over iterations. The iterative cluster analysis aims to identify the most unique cluster solution by minimizing the distance within clusters and maximizing the distance between clusters.[7] Once the number of clusters was selected based on the hierarchical solution, the iterative analysis was run.

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[1]Milligan (1996).
[2]In SAS, the PROC CLUSTER procedure.
[3]Blashfield (1976).
[4]Blashfield (1976); Borgen and Barnett (1987).
[5]In SAS, the FASTCLUS procedure.
[6]Milligan (1996).
[7]Blashfield (1976).

Identification of Clusters

Figure C.1 presents the mean scores of all activity dimensions for each cluster at each stage. At the two-cluster solution, teenagers were divided primarily by the amount of time they spent in social activities, with Cluster 1-2 spending very little time (6 percent) in social activities and Cluster 2-2 spending over half their time in such activities (53 percent). The nonsocial cluster (1-2) also spent more time in academic activities. At the three-cluster solution, Cluster 1-2 is divided into teenagers who spent a majority of their time engaged in watching TV or on the computer (Cluster 2-3), compared with low levels of TV and computer time (Cluster 1-3). This latter cluster also spent more time in academic and maintenance activities. At the four-cluster solution, Cluster 1-3 is divided into two groups (1-4 and 2-4) of teenagers based on their time spent in academic activities; those who spent less time in academic activities (1-4) had higher levels of organized work and maintenance activities. Each cluster explained an additional 18 percent, 11 percent, and 9 percent, respectively, of the variance in patterns of time use.

The five-cluster solution divided Cluster 1-4 into those who engaged in higher levels of maintenance activities (Cluster 1-5) and those who were engaged in high levels of organized activities (Cluster 2-5). The fifth cluster explained an additional 6 percent of the variation. Because of the very small sample size in Cluster 2-5 and because the differentiation on maintenance was not a central interest with regard to the Family Rewards program, it was decided that the four-cluster solution would be the focus of the impact analyses.

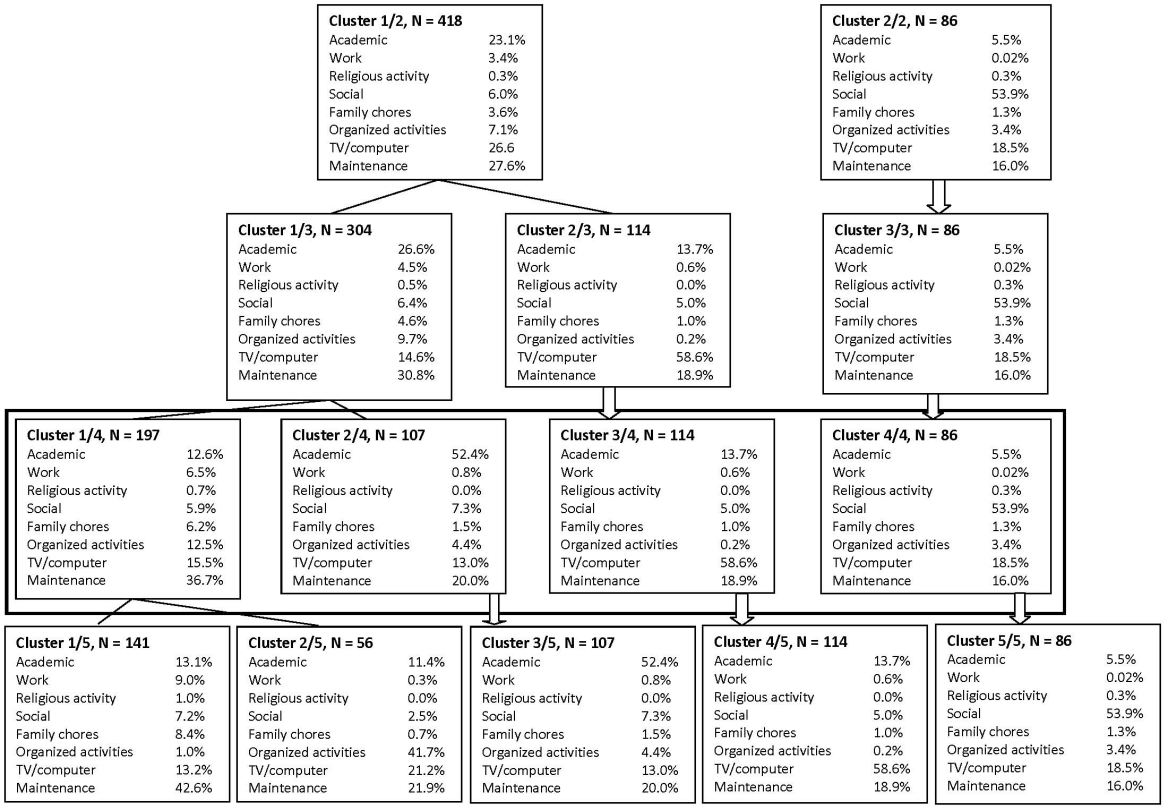
The iterative analysis was conducted with the results from the hierarchical analysis as the cluster seeds. This resulted in four clusters that could be differentiated by their participation in activities[8] (see Table C.1). The first cluster predominantly engaged in maintenance activities (about 41 percent of their time) and engaged in the highest levels of work and family chores and organized activities compared with any other cluster. The second cluster engaged predominantly in academic activities (about 51 percent of their time). The third cluster engaged predominantly in social activities (approximately 53 percent of their time), and the fourth cluster engaged predominantly in watching TV and being on the computer (nearly 57 percent of their time). The levels of the other activities were somewhat similar across the groups. See Table C.1 for a more detailed breakdown of each cluster. The four clusters of teenagers were labeled (1) maintenance and work-oriented, (2) academically oriented, (3) TV/computer-oriented, and (4) socially oriented.

[8]Note that that clusters are presented in a slightly different order in the tables than in Figure C.1.

The Opportunity NYC Demonstration: Family Rewards

Figure C.1

Results of Hierarchical Cluster Analysis: Proportion of Time Spent in Activities (N = 504)



The Opportunity NYC Demonstration: Family Rewards

Table C.1

Proportion of Time Spent in Activities by Time Use Group

Outcome	Maintenance/ Work Oriented		Academically Oriented		TV/Computer Oriented		Socially Oriented	
Proportion of time								
Academic	0.11	(0.11)	**0.51**	(0.17)	0.15	(0.13)	0.07	(0.09)
Work	0.07	(0.19)	0.02	(0.08)	0.01	(0.04)	0.01	(0.08)
Religious activity	0.01	(0.06)	0.00	(0)	0.00	(0)	0.00	(0.03)
Social	0.05	(0.09)	0.06	(0.09)	0.05	(0.09)	**0.53**	(0.16)
Family chores	0.06	(0.17)	0.02	(0.08)	0.02	(0.07)	0.01	(0.05)
Organized activities	0.14	(0.23)	0.03	(0.1)	0.03	(0.08)	0.03	(0.08)
TV/computer	0.12	(0.12)	0.14	(0.13)	**0.57**	(0.16)	0.15	(0.13)
Maintenance	**0.41**	(0.25)	0.21	(0.11)	0.17	(0.11)	0.19	(0.12)
Sample size (total = 504)	157		115		137		95	

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: The table presents time use group means. Standard deviations for each activity are presented in parentheses.

Activities with highest levels are indicated in bold.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes may vary because of missing values.

Sensitivity and Validity Analyses

Three sets of sensitivity and validity analyses were conducted. First, the sensitivity of the clusters to the addition of particular variables was tested. Second, experimental-control differences in cluster identification and in distance from cluster centers were tested to identify whether the clusters better represented the program group or the control group. Finally, the validity of the clusters was tested by examining the association with clusters and outcomes for adolescents. Each of these analyses is discussed in turn below.

Sensitivity to the Inclusion of Particular Variables

While most of the items that comprised the eight categories were face valid and functionally equivalent within categories, there were two exceptions. First, time spent on the computer was categorized together with TV time. Given that time spent on the computer may be productive (for example, doing homework or research on the Internet for a school assignment), nonproductive (playing video games, watching YouTube), or social (e-mailing/chatting with friends), the validity of the cluster structure was tested by separating these two items. Second, the maintenance category was comprised predominantly of self-care and grooming

activities, eating, and napping, but also included time spent in commuting. The validity of the cluster structure was tested by separating these two sets of items.

First, the cluster analysis was run separating TV from computer activities. The four-cluster solution produced fairly similar clusters to the original model. For the TV/computer-oriented cluster, watching TV made up 56 percent of their total time, while time on the computer was only about 6 percent of the total time, suggesting that this cluster is primarily made up of teenagers watching television.

Next, the cluster analysis was run separating time spent in commuting from the rest of the maintenance items. This analysis produced a four-cluster solution similar to the original model. In the "maintenance/work" cluster, commuting accounted for only about 5 percent of that cluster's total time, while napping, resting, eating, and self-care together accounted for 70 percent of the total time. Thus, most of the maintenance time was time spent in other maintenance activities (napping, resting, eating, self-care), rather than commuting.

Cluster Analysis by Experimental Condition

Because time use was measured after random assignment and after the beginning of treatment implementation, the cluster analysis in both the experimental and control groups was run separately to test whether the results of the analysis were similar. If the cluster structure was an artifact of the treatment, one would expect to see different results in the two groups. In both conditions, the final four groups in the iterative solution were similar to those of the main analysis, with one that was predominantly engaged in maintenance activities, a second that was predominantly engaged in academic activities, a third that was predominantly engaged in TV and computer time, and a fourth that was predominantly engaged in social activities. In both conditions within all four clusters, adolescents spent more time in the predominant activity by a factor of two or three from the next highest activity (see Table C.2).

Impacts on Distance from Cluster Centroid

By looking at differences in the average distance from the cluster centroid (that is, cluster center), it is possible to test if the clusters better represent one experimental group over the other. If there is no difference between how far, on average, teenagers are from their cluster center within clusters, one can be confident that each of the clusters represent both groups equally well. These analyses include the same baseline covariates that were included in every model. There were no significant differences between program and control teenagers on average distance from cluster centroid.

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Table C.2

Proportion of Time Spent in Activities by Time Use Group, by Experimental Condition

Outcome	Program Group				Control Group			
	Maintenance/ Work Oriented	Academically Oriented	TV/Computer Oriented	Socially Oriented	Maintenance/ Work Oriented	Academically Oriented	TV/Computer Oriented	Socially Oriented
Proportion of time (%)								
Academic	9.5	**51.2**	12.8	5.5	11.6	**50.0**	16.7	7.5
Work	7.4	1.3	0.7	1.5	6.2	2.0	0.5	1.0
Religious activity	0.6	0.0	0.0	0.6	1.3	0.0	0.0	0.0
Social	4.8	7.3	5.3	**54.9**	5.0	4.8	4.2	**50.9**
Family chores	6.7	2.8	2.2	2.0	5.6	1.4	1.5	1.1
Organized activities	15.4	2.1	2.1	2.3	13.4	5.1	3.3	2.8
TV/computer	10.7	12.9	**57.5**	13.1	13.4	15.6	**55.8**	16.8
Maintenance	**40.7**	20.9	18.0	17.8	**40.8**	20.4	15.9	19.9

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Activities with highest levels are indicated in bold.
Rounding may cause slight discrepancies in calculating sums and differences.

Cluster Validity Check

To test the convergent validity of the clusters (that is, that cluster membership related to outcomes that it should theoretically be related to), cluster membership was regressed on a variety of academic and behavioral outcomes. Teenagers who spent more time in academics (that is, the academically oriented cluster) were predicted to have better academic outcomes, while teenagers who spent more time in social activities (that is, the socially oriented cluster) were predicted to be more likely to engage in problematic behaviors. In addition, teenagers who spent more time in leisure activities were predicted to spend less time in structured extracurricular activities. Table C.3 confirms these predictions.

Program Impacts Using a Multinomial Logistic Regression

A multinomial logistic regression was conducted to determine whether program status predicted cluster membership, using the "academically oriented" cluster as the reference group. All covariates were included. While in the overall model, program status was not significant ($b = 5.31$, $p = 0.15$), planned pair-wise comparisons of each of the three clusters with the academically oriented cluster revealed that program status was a significant predictor for the socially oriented compared with the academically oriented cluster ($b = -0.68$, $p < .05$). This indicates that Family Rewards increased the proportion of teenagers in an academically oriented group and reduced the proportion in a socially oriented group. Estimates for the other two clusters were in the same direction but are not statistically significant (for the maintenance/work-oriented cluster, $b = -0.43$, $p = 0.104$; for the TV/computer cluster, $b = -0.30$, $p = 0.27$).

Subgroup Impacts by Proficiency and Gender

A multinomial logistic regression was conducted on two sets of subgroups: those that were academically prepared at the start of the study and those that were not (that is, proficient versus nonproficient at baseline), and males and females. The analysis of proficiency subgroups revealed that program impacts found in the overall sample were concentrated among those that were proficient at baseline (see Chapter 2). The coefficient for program status in the model was significant ($b = 9.55$, $p < 0.05$), and planned pair-wise comparisons of each of the three clusters revealed that there were program group differences in cluster membership. Specifically, program status was a significant predictor for the socially oriented cluster compared with the academically oriented cluster ($b = 1.44$, $p < 0.05$), and program status was a significant predictor for the maintenance/work-oriented cluster compared with the academically oriented cluster ($b = 0.76$, $p < 0.10$). This indicates that Family Rewards *increased* the proportion of teenagers in the academically oriented group and *reduced* the proportion in the socially oriented and

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Table C.3

Predictors of Outcomes by Cluster Membership

Outcome	Academic vs. Maintenance/ Work	Academic vs. TV/Computer	Academic vs. Social
Academic outcomes			
Attendance, Year 1	-0.07	-0.06	-0.12 **
Attendance, Year 2	-0.11 *	-0.10 *	-0.17 ***
Took 11 credits, Year 1	0.01	-0.04	-0.04
Took 11 credits, Year 2	-0.02	-0.04	-0.03
Passed 11 credits, Year 1	-0.07	-0.09 *	-0.14 ***
Passed 22 credits, Year 1 to 2	-0.13 **	-0.12 **	-0.22 ***
Passed at least 1 Regents exam, Year 1	-0.04	-0.09 *	-0.11 **
Passed at least 1 Regents exam, Year 2	-0.02	-0.06	-0.08 *
Number of Regents exams passed	-0.03	-0.08 *	-0.11 **
Problem behaviors			
Delinquent behaviors (ever)	0.04	0.04	0.09
Aggressive behaviors (ever)	-0.08	-0.11 *	0.04
Any individual substance use	-0.03	-0.01	0.16 ***
Any peer substance use	0.12 **	0.10 *	0.13 **
Mental health			
Depression/anxiety	-0.03	0.06	0.06
Motivational and behavioral outcomes			
School engagement	-0.11 **	-0.08	-0.15 ***
Academic efficacy	0.10	-0.02	0.04
Frequency of participation in organized activities[a]	-0.15 ***	-0.28 ***	-0.20 ***
Number of organized activities	-0.10 *	-0.25 ***	-0.12 **
Attended program for schoolwork[a]	-0.21 ***	-0.23 ***	-0.17 ***
Sample size (total = 504)			

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
All estimates are standardized regression coefficients.
Activities with highest levels are indicated in bold.
Academics is the reference group.
Covariates and program condition are controlled for in models.
[a]Denotes the average frequency of participation: 1 = never, 2 = less than once a month, 3 = every month, 4 = every week, 5 = every day.

maintenance/work-oriented groups for those teenagers who were proficient at baseline and did not change time use patterns for teenagers who were not proficient at baseline.

The analysis of gender subgroups revealed that program impacts were concentrated in the girls only. While the overall regression was not significant, the coefficient for program status in the model was significant ($b = 6.64$, $p < 0.10$), and planned pair-wise comparisons of each of the three clusters revealed that there were program group differences in cluster membership. Specifically, program status was a significant predictor for the socially oriented compared with the academically oriented cluster ($b = 0.90$, $p < 0.05$), and program status was a significant predictor for the maintenance/work-oriented compared with the academically oriented cluster ($b = 0.75$, $p < 0.05$). This indicates that Family Rewards *increased* the proportion of teenagers in the academically oriented group and *reduced* the proportion in the socially oriented and maintenance/work-oriented groups for girls and did not change time use patterns for boys.

Analysis on Weekend Time Use

To assess weekend time use, a reduced set of questions were asked about participation in and length of time spent in each of a set of prespecified activities. Six questions assessed whether teenagers participated in six activities on the previous weekend day. These activities included working for pay; spending time reading, studying, or receiving academic tutoring; participation in sports, clubs, nonacademic lessons, or religious group activities; doing housework or chores or taking care of siblings and other children in the household; watching TV, playing video games, or playing on the computer; and spending time hanging out with friends and/or family. Teenagers were also asked whether there were any other activities they participated in that were not mentioned; these responses were hand-coded. Responses were then categorized into three overarching categories: productive activities (including the subcategories productive-educational and productive-work), maintenance activities, or leisure activities (see below for definitions). The total time spent (hours) in each category of activities was summed.

Activities were categorized similarly to the variable-centered analysis of weekday time use into **productive** (working for pay; reading, studying, or receiving academic tutoring; participating in sports, clubs, nonacademic lessons [like music]; or religious group activities), **maintenance** (doing housework or chores or taking care of siblings and other children in the household; health-related activities), and **leisure** (watching TV, playing video games, or playing on the computer; hanging out with friends and/or family). Given the goals of the program, for the weekday time use categories, productive activities were separated into two subcategories, which were **productive work** (working for pay) and **productive educational** (reading, studying, or receiving academic tutoring) activities.

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Table C.4

Impacts on Hours Spent in Weekend Activities

Outcome	Program group	Control group	Difference (Impact)	P-value
Productive	2.0	2.0	0.0	0.915
Productive educational	0.2	0.4	-0.2	0.123
Productive work	0.2	0.4	-0.2 *	0.073
Maintenance	1.6	1.6	0.0	0.952
Leisure	6.7	7.0	-0.2	0.641
Sample size (total = 511)	262	249		

SOURCE: MDRC calculations from the Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

Sample sizes vary because of missing values.

Table C.4 shows the program impacts on weekend time use. Compared with time use reported for a typical weekday afternoon (see Chapter 2), teenagers reported spending slightly less time (two hours) on productive activities (although much less time on educationally oriented activities, specifically), slightly less time (about one and a half hours) on maintenance activities, but substantially more time on leisure activities (approximately seven hours). However, there are no statistically significant differences between teenagers in the program and control groups in the amount of time spent in any of these activities. The single exception is that teenagers are reporting spending less time working for pay on the weekend in the Family Rewards group compared with the control group. (0.2 hours for program group teenagers compared with 0.4 hours for control group teenagers).

Appendix D

Description of Outcome Measures Used in the Study

Appendix D describes the measures of family and child processes that were used to assess the impact of Family Rewards on teenagers and families. Results of the impact analysis using these measures are presented in Chapters 2 and 3. Three main areas of family and child processes were measured — teenagers' time use, spending and saving, and parent-teenager interactions; teenagers' approaches to schooling; and teenagers' mental health and behavioral problems. When reported, reliability coefficients are the result of the Cronbach's alpha value for the items in each scale. Alpha values great than 0.70 represent high internal reliability of the scale.

Time Use and Spending and Saving

Time Use

Individual Weekday Activities

Adapted from the American Time-Use Survey,[1] teenagers were asked to report on every activity they participated in between 2 p.m. and bedtime. Teenagers reported on what the activity was as well as how much time was spent in each activity. Activities were categorized into three overarching categories: *productive activities*, which are activities that can provide positive developmental opportunities to youth (for example, working or in academic lessons or activities); *maintenance activities*, which are often obligatory and include activities done for the maintenance and care of the family and oneself (for example napping/resting or doing chores and errands); and *leisure activities*, which include free-time and discretionary activities (for example, socializing or watching TV). Within the category of productive activities, subcategories were included of productive-educational, productive-work, and productive-religious activities. The total time spent (hours) in each of these categories was counted.

Time Use Groups

A cluster analysis was conducted to explore whether Family Rewards changed the overall way teenagers spent their time. Activities were categorized into academic, work, religious, social, family chores, time spent on the computer or watching TV, and maintenance activities. This analysis yielded four "clusters" or "groups" of teenagers in the sample. Cluster 1, the *academic* group, spent over half of their time engaged in academic activities on average, a sizably larger amount than any of the other clusters (compared with 6 to 14 percent). Cluster 2, the *social* group, spent over half of their time engaged in social activities on average, a significantly larger amount than other clusters (compared with 5 to 7 percent). Cluster 3, the *TV/computer* group, spent nearly 60 percent of their time engaged in watching TV or on the

[1]For the American Time-Use Survey, see http://www.bls.gov/tus/.

computer on average (compared with 13 to 19 percent). Finally cluster 4, the *maintenance/work* group spent more time than any others engaged in maintenance activities (for example, self-care, eating, napping, commuting) as well as more time than any others working for pay and doing family chores such as housework and taking care of siblings.[2]

Weekend Time Use

Weekend time use was assessed with six yes/no questions that asked teenagers if they participated in six activities on the previous weekend day. Teenagers were also asked if there were any other activities they participated in that were not mentioned; these responses were hand-coded. Additionally, teenagers were asked how much time they spent in each activity. Responses to the six activities and the open-ended question were then categorized into three overarching categories: productive activities (including the subcategories productive-educational and productive-work), maintenance activities, or leisure activities. The total time spent (hours) in each activity within each category was summed.

Spending

Parents and teenagers were asked about their spending on a variety of items. Spending was coded into three distinct categories, and money spent on each category was summed. *Productive spending* included spending on education-related activities (for example, spending on books, school supplies, or other school-related costs) and sports-related activities (for example, spending on games or sporting goods). *Maintenance spending* included spending on necessities (for example, spending on food, health care, clothes, or shoes). Finally, *leisure spending* included spending on recreational nonnecessities (for example, entertainment, video games, or movies).

Saving

Parents' saving for their child's future education was asked as a single dichotomous question: "Do you set aside money for [FCNAME'S] future education expenses?" Parents answered either yes or no.

[2]See Appendix C for more detail on the creation of these groups.

Family Interactions

Family Conflict

An 11-question scale[3] was used to measure potential sources of conflict between parents and teenagers. Parents and teenagers were each asked to report on all 11 questions whether they (1) discuss the issue and (2) how calm or angry they feel when they discuss the issue (using a 5-point scale where 1 = calm and 5 = angry). Parents and teenagers could receive a score of 0 to 11 for the number of issues discussed, and a score from 1 to 5 for the average rating of conflict. High scores refer to higher conflict during discussions.

Parental Monitoring

A nine-item subscale[4] was used reflecting parents' tracking and surveillance of their teen's behavior and activities (for example, knowing what their teenager does during free time). A four-point response scale was used, with higher scores indicating higher levels of parental monitoring. The scale had a reliability coefficient of 0.71, indicating sufficient internal consistency.

Teenager Disclosure

A five-item subscale[5] was used, reflecting the extent to which teenagers tell their parents about their behavior and activities (for example talking to parents about what you do at night/on weekends). A five-point response scale was used, with higher scores indicating higher levels of disclosure to parents. The scale had a reliability coefficient of 0.66, indicating sufficient internal consistency.

Teenagers' Approaches to Schooling

School Engagement

A four-item scale[6] assessed a teenagers' engagement in classroom and school activities. The four items refer to trying hard to do well, paying attention in class, working hard in school, and listening carefully in class. The scale had a reliability coefficient of 0.75, indicating sufficient internal consistency.

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[3]Adapted from Robin and Foster (1989).
[4]From Stattin and Kerr (2000).
[5]From Stattin and Kerr (2000).
[6]Adapted from Furrer and Skinner (2003).

Academic Efficacy

A four-item scale[7] assessed teenagers' perceptions of their academic abilities and ability to succeed when faced with challenging academic activities. Teenagers were asked about four academic activities (for example, writing a report about a book or passing a final exam at the end of the year). A four-point response scale was used, with 1 = "really easy," 2 = "sort of easy," 3 = "sort of hard," and 4 = "really hard." The scale had a reliability coefficient of 0.52, indicating relatively low but sufficient internal consistency.

Motivation

A 16-item scale assessed the reasons why teens do their schoolwork. Items consisted of four subscale scores of different dimensions of motivation (intrinsic, extrinsic, introjected, and identified). A score was calculated to create the "Relative Autonomy Index," based on a combination of these subscales ranging from negative seven to positive seven.[8] Larger negative scores indicate that teenagers are more extrinsically motivated in doing their schoolwork (for example, "I do homework because I will get in trouble if I don't do it"; "I may get a reward if I do it.") Scores closer to positive seven indicate that teenagers are more intrinsically motivated (for example, "I do homework because it's important for me to do well in school.").

Mastery Goal Orientation

A five-item scale adapted from the Manual for the Patterns of Adaptive Learning Scales,[9] measured the extent to which a teenager learns because of a desire to become proficient in a topic to the best of his or her ability (for example, learning because it is a goal to learn as much as possible or because it is a goal to master a lot of new skills). A five-point response scale indicated higher levels being equivalent to higher levels of a mastery goal orientation (1 = not at all true, 5 = very true). The scale had a reliability coefficient of 0.77, indicating sufficient internal consistency.

Performance-Avoidant Goal Orientation

A four-item scale[10] measured the extent to which a teenager behaves in school in order to avoid an undesirable outcome (for example, avoiding seeming incompetent to others). A five-point response scale indicated higher levels being equivalent to higher levels of a mastery goal

[7]From Seidman et al. (1994).

[8]From Ryan and Connell (1989). For more information, see http://www.psych.rochester.edu/SDT/measures/ SRQ_academic.php.

[9]From Midgley et al. (2000).

[10]From Midgley et al. (2000).

orientation (1 = not at all true, 5 = very true). The scale had a reliability coefficient of 0.72, indicating sufficient internal consistency.

Teenagers' Mental Health and Problem Behaviors

Depression

Thirteen items measuring depressive symptoms were taken from the Behavioral Assessment System for Children.[11] Teenagers answered whether each of the questions were true about them since the beginning of the calendar year (for example, "Nothing is fun anymore"; "I feel sad."). Items were summed to create a scale ranging from zero to 13, with higher scores indicating higher levels of depression. The scale had a reliability coefficient of 0.86, indicating sufficient internal consistency.

Anxiety

Thirteen items measuring symptoms of anxiety were taken from the Behavioral Assessment System for Children.[12] Teenagers answered whether each of the questions were true about them since the beginning of the calendar year (for example, "I worry about little things"; "I get nervous."). Items were summed to create a scale ranging from zero to 13, with higher scores indicating higher levels of anxiety. The scale had a reliability coefficient of 0.80, indicating sufficient internal consistency.

Delinquent Behaviors

Six items[13] were used to measure the frequency of minor delinquent acts (actions considered criminal offenses for adults) committed in "the past couple of weeks" (for example, "taking something from someone at school that didn't belong me," "breaking or ruining something on purpose that belonged to the school"). A four-point response scale was used, with higher scores indicating a higher frequency of committing such acts (1 = "never," 4 = "many times"). Due to a low frequency in reporting of delinquent behaviors, the scale was averaged and then dichotomized to indicate whether a teenager displayed any delinquent activities.

[11]From Reynolds and Kamphaus (1998).
[12]From Reynolds and Kamphaus (1998).
[13]From Loeber and Dishion (1983).

Aggressive Behaviors

Nine items[14] were used to measure the number of times in the past seven days teenagers committed aggressive acts intended to cause harm to others (for example, "teased students to make them angry," "threatened to hurt or hit someone"). A four-point response scale was used, with 0 = "0 times," 1 = "1 time," 2 = "2 times," 3 = "3 times," and 4 = "4 times." Due to a low frequency in reporting of aggressive behaviors, the scale was averaged and then dichotomized to indicate whether a teenager displayed any aggressive acts or displayed no delinquent acts.

Substance Use

Four items about the frequency with which teenagers smoked cigarettes, drank alcohol, used marijuana, and used hard drugs (ecstasy, cocaine, crack, LSD, uppers, or downers) during the past month were adapted from the 18-month youth interview in MDRC's Working toward Wellness evaluation[15] and the interview in MDRC's Supporting Healthy Marriage evaluation.[16] A four-point response scale was used for all items, with 1 = "never," 2 = "only a few times," 3 = "1 or 2 times a week," 4 = "several times a week or more." Due to a low frequency in reporting of substance use, the scale was averaged and then dichotomized to indicate whether a teenager ever used substances or never used substances.

Peer Substance Use

Three items were used, adapted from the 18-month youth interview in MDRC's Working toward Wellness evaluation[17] and the interview in MDRC's Supporting Healthy Marriage evaluation[18] about how many friends drank alcohol, how many friends tried marijuana, and how many friends tried hard drugs in the past month. A four-point scale was used for all items, with 1 = "none," 2 = "a few," 3 = "some," and 4 = "most." Items were averaged and a dichotomized scale was created to indicate whether a teenager had any peers who used substances.

[14]From Orpinas and Frankowski (2001).
[15]From Kim et al. (2010).
[16]From Miller Gaubert et al. (2010).
[17]From Kim et al. (2010).
[18]From Miller Gaubert et al. (2010).

Appendix E

Analysis of Nonresponse Bias in the Child and Family Embedded Study Sample

This embedded study provides information about families in Family Rewards with a ninth-grade child at random assignment on topics such as teenagers' time use, parents' and teenagers' spending and saving, parent-teenager interactions, teenagers' approaches to schooling, and mental health and problem behaviors. As the survey was administered to a subset of the Family Rewards families with a ninth-grade child, it is necessary to assess the reliability of impact results for the survey sample along two dimensions. First, the results for the survey sample may or may not generalize to (or be representative of) the full sample of families with a ninth-grade child, because (1) only a subset of the full Family Rewards sample of families with a ninth-grade child was selected to be interviewed; and (2) parents and teenagers who responded to the survey may be different from those who were chosen for the survey but did not respond. Second, the failure of some families to respond to the survey may compromise the validity of the impact estimates, particularly if response rates differ by research group. This appendix presents a description of the survey fielding effort and assesses the survey in terms of its generalizability to the full sample and its validity for estimating program impacts. Overall, the results suggest that the embedded study survey sample (referred to as the child survey sample) provides valid estimates of the program's effects that can be generalized to the full research sample.

Sample Selection and Survey Administration

From the 1,028 families with a ninth-grade child who had completed the 18-month Family Rewards survey, 903 families had information on parent employment at baseline and data on teenager baseline math proficiency in the school year before they entered the study. From these, 903 families, a subsample of 716 teenagers (and their parents) were selected for interviewing (the fielded sample).

Program group members who responded to the 18-month survey had better initial employment situations than the control group members who responded, so sampling involved stratifying the respondent sample by treatment status and parent employment status at baseline. The study also found better educational gains for teenagers in the program group who were proficient in math in eighth grade. In order to conduct follow-up subgroup analysis from this important finding, the sample was also stratified by whether the teenagers met their eighth-grade math learning standards. Because there were not enough teenagers who were considered proficient in math in eighth grade to stratify the sample with a 50/50 proficient/nonproficient split, the subsample was selected so that the percentage of proficient teenagers was balanced between the program and control groups.

Comparisons Between the Survey Sample and Report Sample

Analyses comparing the selected sample of parents and teenagers with the full Family Rewards sample show that these samples did not differ in important ways, with a few exceptions. Tables E.1 and E.2 show parents' and teenagers' baseline characteristics for the full Family Rewards sample (4,749 families), the 18-month survey respondent sample (3,082 families), the families fielded for the child survey (716 families), and the families that were eligible for the current study but not selected to participate (187 families). The adults not selected for the study were more likely to be U.S. citizens by birth (72 percent) and less likely to be legal permanent residents (12 percent) than those in the full sample (67 percent and 17 percent, respectively, of the full sample). The adults selected for the study were less likely to be Hispanic or Latino and more likely to be black than the full sample. Teenagers selected for the study were less likely than the teenagers in the full Family Rewards sample to be covered by public health insurance. An additional selection criterion established for the purposes of the 18-month survey was that the participating adult in the family either spoke English well or very well or spoke primarily English or Spanish in the home. As a result, parents in the 18-month and the embedded study survey samples, as well as eligible 18-month survey respondents who were not selected for the embedded study, were all more likely to primarily speak English than another language in their homes than parents in the full research sample.

A comparison of the last two columns of Table E.1 shows that parents in the fielded sample differ from parents in the nonfielded sample in a few ways. Because the sample for this embedded study was stratified by baseline employment status, adults not selected for the study had more employment activity prior to and at baseline than the selected adult sample. It follows that they were also more likely to have employer-provided health insurance and less likely to be covered by public health insurance than the selected adult sample. Those not selected for the study were also 5 percentage points more likely to have an account at a bank or credit union (52 percent) than the selected sample (47).

Table E.2 shows similar comparisons of baseline characteristics for the teenagers in these families. Teenagers in the fielded sample had characteristics similar to those of teenagers who were not selected for the study, although the nonfielded sample did exhibit a slightly different ethnic mix than the full Family Rewards sample.

Fielding of the survey began in March 2010 and ended in June 2010. Members of the fielded sample were initially contacted by a letter that introduced the survey and solicited their participation. Teenagers were offered $50 and parents were offered $25 for completing the survey, which was administered by telephone to those who agreed to participate. Respondents were interviewed anywhere between 29 and 35 months after they were randomly assigned.

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Table E.1

Characteristics of Adult Sample at the Time of Random Assignment, by Full, Core Survey Respondent, Child Study, and Not Selected Samples

Characteristic	Full Sample	Core Survey Respondent Sample	Child Study Sample	Not Selected for Child Survey
Female (%)	94.4	95.1	94.3	95.7
Age (%)				
18 to 24 years	0.3	0.3	0.0	0.5
25 to 34 years	28.9	28.4	17.0	17.6
35 to 44 years	45.1	45.3	49.9	48.1
45 to 59 years	22.8	23.0	29.7	32.1
60 years or more	2.9	2.9	3.4	1.6
Average age (years)	40	40	42	42
U.S. citizen[a] (%)	83.1	85.1	84.1	87.7
By birth	67.4	70.7	70.1	71.7
By naturalization	15.7	14.4	14.0	16.0
Legal permanent resident (%)	16.9	14.9	15.9	12.3
Race/ethnicity (%)				
Hispanic/Latino	46.7	43.6	43.5	43.0
White, non-Hispanic/Latino	0.7	0.7	0.4	0.5
Black, non-Hispanic/Latino	51.2	54.8	55.1	56.5
Other, non-Hispanic/Latino	1.4	0.9	1.0	0.0
Education (%)				
GED certificate	11.1	11.5	10.4	14.9
High school diploma	21.3	21.0	19.8	19.6
Associate's degree/2-year college	8.9	8.8	7.8	8.8
4-year college or beyond	8.7	9.2	12.0	12.2
None of the above	50.1	49.6	50.0	44.6
Marital status (%)				
Single	62.5	63.6	65.4	60.4
Cohabiting	2.3	2.5	1.8	1.1
Separated, widowed, or divorced	16.2	15.5	15.8	18.7
Married or in a legal domestic partnership	19.1	18.4	17.0	19.8
Primary language is English (%)	76.9	80.6	81.4	80.7
Primary language is Spanish (%)	21.7	18.6	17.9	18.7
Has an account at bank or credit union (%)	47.0	47.9	47.0	51.9
Employment measures (BIF)				
Currently working (%)	53.0	52.6	50.0	70.1
Working full time[b] (%)	37.1	37.3	37.8	52.9
Average weekly earnings, among those currently working ($)	393	400	413	450
During past year, average number of months worked (%)	10	10	10	11

(continued)

Table E.1 (continued)

Characteristic	Full Sample	Core Survey Respondent Sample	Child Study Sample	Not Selected for Child Survey
Employment measures (UI)				
Employed in 4th quarter prior to random assignment (%)	47.5	47.9	47.5	55.6
Average earnings in 4th quarter prior to random assignment ($)	2,572	2,560	2,647	3,227
Employed in 3rd quarter prior to random assignment (%)	48.8	49.5	49.3	59.4
Average earnings in 3rd quarter prior to random assignment ($)	2,772	2,818	2,927	3,935
Employed in 2nd quarter prior to random assignment (%)	47.1	47.2	47.3	57.2
Average earnings in 2nd quarter prior to random assignment ($)	2,683	2,692	2,743	3,780
Employed in 1st quarter prior to random assignment (%)	47.9	48.2	46.8	60.4
Average earnings in 1st quarter prior to random assignment ($)	2,783	2,842	2,861	3,884
Public assistance measures				
Received TANF in the year prior to random assignment (%)	41.3	40.9	40.1	31.0
Received Medicaid in the 3 quarters prior to random assignment (%)	66.2	65.6	65.6	61.0
Health measures (%)				
Health insurance coverage				
Public health insurance	70.5	70.6	69.5	64.5
Employer health insurance	20.6	21.5	24.6	30.1
Other health insurance	3.0	2.7	2.7	1.6
Not covered	5.9	5.2	3.3	3.8
Had annual medical checkup when not sick				
Within the past year	82.1	82.1	82.0	85.5
1-2 years ago	14.3	14.6	14.3	11.8
More than 2 years ago	3.4	3.1	3.4	2.7
Never	0.2	0.2	0.0	0.0
Last medical checkup was at own (regular) doctor's office or clinic (%)	93.5	94.5	96.1	95.1
Had preventive dental checkup				
Within the past year	64.9	64.8	66.5	61.5
1-2 years ago	23.5	23.9	21.9	30.5
More than 2 years ago	10.9	10.6	10.6	7.5
Never	0.7	0.7	1.0	0.0
Self-rated health				
Excellent or very good	43.0	44.3	39.5	42.2
Good	36.9	35.5	36.2	39.6
Fair or poor	20.1	20.2	24.3	18.2
Over the past two weeks, had little or no interest in doing things	22.4	22.6	25.7	22.5
Over the past two weeks, had been feeling down, depressed, or hopeless	21.9	21.9	23.8	22.2

(continued)

Table E.1 (continued)

Characteristic	Full Sample	Core Survey Respondent Sample	Child Study Sample	Not Selected for Child Survey
Community District (%)				
Brooklyn CD 5	19.3	20.8	20.0	20.3
Brooklyn CD 16	15.6	16.6	18.0	19.8
Bronx CD 5	15.9	13.5	12.4	11.8
Bronx CD 6	17.8	15.4	14.7	18.7
Manhattan CD 10	11.7	12.4	13.4	9.6
Manhattan CD 11	19.7	21.3	21.5	19.8
Sample size	4,749	3,082	716	187

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, and New York State Human Resources Administration administrative records.

NOTES: This table excludes information for enrolled second parents in two-parent households.
Sample sizes may vary because of missing values.
Rounding may cause slight discrepancies in calculating sums.
[a]Refers to both U.S. citizens by birth and by naturalization.
[b]Refers to 30 hours a week or more.

Comparison of Impacts in the Survey Sample and Report Sample

A comparison of impacts on educational outcomes from the 18-month survey respondent sample reveals that the pattern of impacts found in the core sample is similar in the report sample, though slightly larger in magnitude. As shown in Tables E.3 and E.4, impacts from the core study are largely replicated in this subsample of 511 teenagers. Relatively limited impacts on educational outcomes are found for the full sample of teens, as shown in Table E.3, with effects on attendance and credits earned, but little by way of statistically significant benefits of the program on Regents test scores. Table E.4 presents education effects by eighth-grade math proficiency subgroups. When teenagers are split into two groups based on their eighth- grade test scores, positive impacts are observed among those teenagers who had scored at or above the basic proficiency level on their eighth-grade standardized math test, and these benefits are observed in both samples. More specifically, in the 18-month survey sample, Family Rewards resulted in a 15 percentage point increase in the likelihood of having a 95 percent or better attendance rate (Year 2), a 9 percentage point increase in the likelihood of earning at least 11 credits in Year 1 (needed to remain on track for on-time graduation), and an increase of 6 percentage points in the likelihood of passing at least two Regents exams. These numbers are slightly larger (at 16, 12, and 12 percentage points, respectively) in the report sample. Overall, the patterns of impacts are very similar in the core study and the report samples across subgroups.

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Table E.2

Characteristics of Teenager Sample at the time of Random Assignment, by Full, Core Survey Respondent, Child Study, and Not Selected Samples

Characteristic	Full Sample	Core Survey Respondent Sample	Child Study Sample	Not Selected for Child Survey
Gender (%)				
Female	49.4	49.3	52.3	48.4
Male	50.6	50.7	47.7	51.6
Age (%)				
0-5 years	0.1	0.1	0.1	0.0
6-10 years	32.2	32.6	0.8	1.1
11-13 years	37.2	39.5	23.3	22.5
14 years or older	30.5	27.9	75.7	76.5
Average age (years)	12	12	14	14
Born in the U.S. (%)	92.8	93.8	91.9	93.0
Race/ethnicity (%)				
Hispanic/Latino	47.0	44.1	42.7	42.2
White, non-Hispanic/Latino	0.4	0.5	0.6	0.5
Black, non-Hispanic/Latino	50.5	53.8	54.5	56.7
Other, non-Hispanic/Latino	2.0	1.6	2.1	0.5
Type of school teenager attended in the past year (%)				
Public or charter school	98.5	98.6	99.3	99.5
Private or parochial school	1.5	1.4	0.7	0.0
Education measures (%)				
Teenager's parent attended parent-teacher conference during past year				
Never	3.6	3.7	3.3	4.9
1-2 times a year	35.8	35.3	36.9	35.3
3-4 times a year	36.4	37.0	32.4	37.0
5-6 times a year	11.7	11.1	12.6	12.5
More than 6 times a year	12.4	12.9	14.8	10.3
Teenager's parent spoke to teacher about his or her grades, tests, or homework during past year				
Not at all	1.7	1.5	1.7	2.7
A little	7.1	6.9	6.5	5.9
Some	18.7	17.1	18.0	14.6
A lot	36.9	36.9	35.9	43.2
A great deal	35.6	37.6	38.0	33.5
Enrolled in special education in the past school year	15.8	16.1	13.0	17.1
Enrolled as an English Language Learner in the past school year	13.8	12.9	11.5	9.7

(continued)

Table E.2 (continued)

Characteristic	Full Sample	Core Survey Respondent Sample	Child Study Sample	Not Selected for Child Survey
Teenagers' health outcomes (%)				
Received Medicaid in the 3 quarters prior to random assignment	65.8	66.0	66.1	57.2
Health insurance coverage				
Public health insurance	79.1	78.6	76.4	70.4
Employer health insurance	16.1	16.9	19.3	24.2
Other health insurance	1.7	1.5	1.7	1.6
Not covered	3.1	2.9	2.5	3.8
Parent's rating of teenager's health				
Excellent	43.0	44.5	42.2	43.3
Very good	31.1	30.4	30.4	27.3
Good	22.5	21.7	24.4	25.1
Fair	3.0	3.1	2.4	3.7
Poor	0.3	0.4	0.6	0.5
Had annual medical checkup when not sick				
Within the past year	89.5	89.5	89.2	87.2
1-2 years ago	9.5	9.5	9.6	9.6
More than 2 years ago	0.9	1.0	1.3	3.2
Never	0.1	0.0	0.0	0.0
Last annual checkup was at own (regular) doctor's office or clinic	97.5	97.8	97.8	98.9
Had preventive dental checkup:				
Within the past year	76.5	75.8	73.6	71.2
1-2 years ago	19.2	19.8	20.1	23.9
More than 2 years ago	3.3	3.3	5.3	3.3
Never	1.0	1.0	1.0	1.6
Has physical problem that limits his or her activities	10.1	10.7	10.7	9.7
Has an emotional or mental health problem that limits activities	6.4	6.4	5.4	8.1
Sample size	4,749	3,082	716	187

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, and New York State Human Resources Administration administrative records.

NOTES: Sample sizes may vary because of missing values.
Rounding may cause slight discrepancies in calculating sums.

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Table E.3

Impacts on Selected Education Outcomes, Child Study Sample

Outcome	Core Sample Difference (Impact)	Child Study Sample Difference (Impact)
Education outcomes		
Attendance (%)		
Attendance is 95% or higher, Year 1	2.5	3.4
Attendance is 95% or higher, Year 2	5.2 ***	7.7 **
Credits (%)		
Attempted 11 or more credits, Year 1	3.9 ***	5.7 **
Attempted 11 or more credits, Year 2	2.6	5.2 *
Earned 11 or more credits, Year 1	-0.3	4.1
Earned 11 or more credits, Year 2	-0.2	3.9
Regents exams, years 1 and 2 combined		
Exams taken (%)		
At least 1 Regents exam	2.0	7.7 **
1 Regents exam	-0.3	1.0
2 Regents exams	-1.2	1.9
3 Regents exams	3.4 *	4.7
Exams passed (%)		
At least 1 Regents exam	1.6	5.2
At least 2 Regents exams	0.7	5.3
1 Regents exam	0.9	-0.1
2 Regents exams	-1.0	-2.3
3 Regents exams	1.7	7.5 **
Average number of Regents exams passed	0.0	0.2
Sample size	1,979	511

SOURCES: MDRC calculations from responses to the Family Rewards 18-Month Survey and Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

Rounding may cause slight discrepancies in calculating sums and differences.

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Table E.4

Impacts on Selected Education Outcomes, Child Study Sample, by Proficiency Level on 8th-Grade Math Test

	Core Sample	Child Study Sample
Subgroup and outcome	Difference (Impact)	Difference (Impact)
Scored at or above proficiency level on annual math test in 8th grade		
Attendance (%)		
Attendance is 95% or higher, Year 1	7.4 *	3.1
Attendance is 95% or higher, Year 2	14.9 ***	16.2 **
Credits (%)		
Attempted 11 or more credits, Year 1	4.1 **	9.0 ***
Attempted 11 or more credits, Year 2	2.6	10.0 **
Earned 11 or more credits, Year 1	8.9 **	11.7 *
Earned 11 or more credits, Year 2	9.3 **	14.6 **
Regents exams passed		
At least 1 Regents exam, Year 1 (%)	7.5 **	11.6 *
At least 1 Regents exam, Year 2 (%)	5.8 *	13.6 **
At least 2 Regents exams, Year 1 to 2 (%)	5.9 *	11.7 *
Average number of Regents exams passed, Year 1 to 2	0.3 **	0.5 **
Sample size	584	199
Scored below proficiency level on annual math test in 8th grade		
Attendance (%)		
Attendance is 95% or higher, Year 1	2.2	4.5
Attendance is 95% or higher, Year 2	2.5	3.6
Credits (%)		
Attempted 11 or more credits, Year 1	5.6 ***	3.2
Attempted 11 or more credits, Year 2	2.2	2.0
Earned 11 or more credits, Year 1	-3.5	-0.1
Earned 11 or more credits, Year 2	-3.8	-2.8
Regents exams passed		
At least 1 Regents exam, Year 1 (%)	0.7	4.0
At least 1 Regents exam, Year 2 (%)	-1.2	0.4
At least 2 Regents exams, Year 1 to 2 (%)	-2.3	3.3
Average number of Regents exams passed, Year 1 to 2	-0.1	0.1
Sample size	1,143	312

(continued)

Table E.4 (continued)

SOURCES: MDRC calculations from responses to the Family Rewards 18-Month Survey and Family Rewards 30-Month Embedded Study Survey.

NOTES: Statistical significance levels indicated as follows: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.
Rounding may cause slight discrepancies in calculating sums and differences.
Sample sizes may vary because of missing values.

Because of the slightly larger impacts found among subgroup of teenagers who were proficient in eighth-grade math, additional comparisons between the teenagers whose parents were in the 18-month survey sample and the teenagers in the child study sample by proficiency subgroups were conducted. (As described in the sample selection section earlier, these samples overlap such that every teenager in the child study sample has a parent who responded to the 18-month survey). Table E.5 shows that teenagers who met proficiency standards in eighth grade were more likely to be female (49 percent versus 45 percent), more likely to be born in the United States (by 5 percentage points), and more likely to have parents who attended parent-teacher conferences and spoke to teachers more frequently about their teenager's schoolwork compared with the proficient ninth-grade children of parents in the 18-month survey sample. Proficient teenagers in the child study sample were more likely to be enrolled in special education in the past year (about 21 percent versus 12 percent) and more likely to be enrolled as English language learners (approximately 16 percent versus 11 percent) than proficient teenagers whose parents were in the 18-month survey sample. They were also more likely to have had an annual medical check-up in the past year when not sick (87 percent versus 79 percent) and less likely to have had a preventive dental check-up (67 percent versus 81 percent). Within the group of teenagers who did not meet proficiency standards in eighth grade, there were very few differences in baseline characteristics between the two survey samples.

Characteristics of Respondents and Nonrespondents Within the Fielded Sample

Overall, 77 percent of parents who were contacted gave consent for their children to participate; of these, 93 percent of children consented to participate and completed a survey. Among the 716 parent-teenager dyads who were chosen to be surveyed, 511 dyads completed a survey interview, for a response rate of 71 percent. The response rate was 73 percent for the program group and 70 percent for the control group.

Appendix Table E.6 presents selected baseline characteristics for survey respondents and nonrespondents. Some differences are to be expected, given that individuals who respond to surveys tend to be different, usually less disadvantaged, from those who do not. The table

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Table E.5

Characteristics of the Fielded Survey Sample at the Time of Random Assignment, by Response Status by Full and Child Study Samples, by Proficiency Level on 8th-Grade Math Test

	Scored at or above proficiency level on annual math test in 8th grade		Scored below proficiency level on annual math test in 8th grade	
Characteristic	Core Survey Respondent Sample	Child Study Sample	Core Survey Respondent Sample	Child Study Sample
Gender (%)				
Female	44.9	49.3	41.6	38.2
Male	55.1	50.7	58.4	61.8
Average age (years)	14	14	14	14
Born in the U.S. (%)	88.6	94.0	92.8	92.3
Race/ethnicity (%)				
Hispanic/Latino	47.6	48.9	42.9	39.2
White, non-Hispanic/Latino	0.0	0.7	0.5	0.3
Black, non-Hispanic/Latino	49.5	48.1	54.9	58.2
Type of school child attended in the past year (%)				
Public or charter school	100.0	100.0	99.0	98.5
Private or parochial school	0.0	0.0	1.0	1.5
Education measures (%)				
Teenager's parent attended parent-teacher conference during past year				
Never	6.9	3.0	2.6	2.6
1-2 times a year	41.2	32.8	35.0	36.8
3-4 times a year	31.4	29.9	32.7	31.8
5-6 times a year	11.8	14.9	13.8	13.6
More than 6 times a year	8.8	19.4	15.8	15.2
Teenager's parent spoke to teacher about his or her grades, tests, or homework during past year (%)				
Not at all	4.8	1.5	1.0	0.3
A little	12.5	5.2	6.7	8.4
Some	20.2	17.0	16.3	16.1
A lot	35.6	37.0	38.3	36.7
A great deal	26.9	39.3	37.7	38.6
Enrolled in special education in the past school year	12.4	20.6	19.8	19.2
Enrolled as an English Language Learner in the past school year	10.8	15.7	13.3	12.6

(continued)

Table E.5 (continued)

Characteristic	Scored at or above proficiency level on annual math test in 8th grade		Scored below proficiency level on annual math test in 8th grade	
	Core Survey Respondent Sample	Child Study Sample	Core Survey Respondent Sample	Child Study Sample
Teenagers' health outcomes (%)				
Received Medicaid in the 3 quarters prior to random assignment	52.2	59.4	61.1	60.8
Health insurance coverage				
Public health insurance	65.2	65.2	72.2	75.1
Employer health insurance	31.9	30.4	24.3	21.8
Other health insurance	1.4	1.4	1.6	1.0
Not covered	1.4	2.9	1.9	2.0
Parent's rating of teenager's health				
Excellent	46.4	50.7	42.5	39.9
Very good	31.9	26.1	30.8	31.3
Good	21.7	21.7	25.7	27.8
Fair	0.0	0.0	0.6	1.0
Poor	0.0	1.4	0.3	0.0
Had annual medical checkup when not sick				
Within the past year	79.4	87.0	91.1	92.4
1-2 years ago	19.1	11.6	8.6	7.6
More than 2 years ago	1.5	1.4	0.3	0.0
Never	0.0	0.0	0.0	0.0
Last annual checkup was at own (regular) doctor's office or clinic	97.0	98.5	98.7	99.0
Had preventive dental checkup:				
Within the past year	81.2	66.7	72.9	74.2
1-2 years ago	11.6	29.0	20.4	17.2
More than 2 years ago	4.3	2.9	5.7	7.6
Never	2.9	1.4	1.0	1.0
Has physical problem that limits his or her activities	2.9	4.3	8.3	8.7
Sample size	385	268	691	448

SOURCE: MDRC calculations using Family Rewards Baseline Information Forms data.

NOTES: Includes sample members randomly assigned between July 10, 2007, and March 18, 2008.
Rounding may cause slight discrepancies in calculating sums and differences.
Sample sizes may vary because of missing values.

illustrates that there are only a few of these differences. A higher fraction of the respondent sample, for example, came from a two-parent family. Similarly, a smaller fraction of respondents than nonrespondents reported good health. On the other hand, survey respondents received more food stamp payments than nonrespondents in the year before random assignment.

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Table E.6

Characteristics of the Fielded Survey Sample at the Time of Random Assignment, by Response Status

Characteristic	Survey Respondents	Non-Respondents	
Assigned to program group (%)	51.3	46.8	
Family baseline measures			
Two-parent family[a] (%)	18.6	12.7	*
Two parents enrolled in Family Rewards[b] (%)	5.7	2.0	**
Number of children in household (%)			
1	23.7	25.4	
2	36.6	36.6	
3	39.7	38.0	
Primary language spoken at home is English (%)	81.4	81.5	
Family living in public housing (%)	31.4	30.5	
Family receiving Section 8 rental assistance (%)	23.1	24.5	
Family receiving TANF or Safety Net Assistance (%)	22.5	22.3	
Family receiving food stamps (%)	59.7	54.5	
Earnings above 130% of federal poverty level (%)	14.5	19.9	*
UI earnings in the year prior to random assignment ($)	11,326	11,582	
TANF payments in the year prior to random assignment ($)	2,200	2,059	
Food stamp payments in the year prior to random assignment ($)	2264	1953	*
Community District (%)			
Bronx 5	12.5	12.2	
Bronx 6	14.9	13.2	
Brooklyn 5	18.8	23.4	
Brooklyn 16	18.2	16.6	
Manhattan 10	13.9	13.2	
Manhattan 11	21.7	21.5	
Parents' baseline measures			
Female (%)	94.3	93.7	
Age (%)			
18-34	15.3	20.5	
35-44	50.7	47.8	
45-54	27.0	25.4	
55 or older	7.0	6.3	
Citizenship (%)			
U.S. citizen by birth	70.1	69.8	
Naturalized U.S. citizen	15.1	12.7	
Legal permanent resident	14.9	17.6	

(continued)

Table E.6 (continued)

Characteristic	Survey Respondents	Non-Respondents	
Race/ethnicity (%)			
Hispanic/Latino	42.7	45.3	
Black, non-Hispanic/Latino	55.7	53.7	
Other, non-Hispanic/Latino	1.6	1.0	
Education (%)			
Less than high school diploma/GED certificate	39.7	37.1	
High school diploma or GED certificate	23.2	24.4	
More than high school diploma/GED certificate	37.1	38.6	
Currently working (%)	49.3	51.7	
Working full time (%)	36.6	39.5	
Covered by public health insurance (%)	68.1	71.3	
Medicaid coverage in the 3 quarters prior to random assignment (%)	65.0	65.9	
Self-rated health is good, very good, or excellent (%)	73.8	79.4	
Has a physical or mental condition that limits work (%)	28.9	26.9	
Over the past 2 weeks, had little or no interest in doing things and/or had been feeling down, depressed, or hopeless (%)	35.6	30.4	
Target teenagers' baseline measures			
Born in the United States (%)	91.0	94.1	
Attended public school in past year (%)	98.8	100.0	[ ]
Covered by public health insurance (%)	76.7	73.9	
Has a physical or mental condition that limits work (%)	15.5	11.9	
Percentage of target teenagers proficient on ELA test, 2007	35.4	29.1	
Percentage of target teenagers proficient on math test, 2007	38.9	33.7	
Sample size	511	205	

SOURCE: MDRC calculations using Family Rewards Baseline Information Forms data.

NOTES: Includes sample members randomly assigned between July 10, 2007, and March 18, 2008.

In order to assess differences in characteristics across research groups, chi-square tests were used for categorical variables and t-tests were used for continuous variables.

Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Brackets ([ ]) around significance levels indicate that the chi-square tests for statistical significance are not valid because sample sizes within categories are too small.

Sample sizes may vary because of missing values.

[a]Families with parents who reported their marital status as single, single but living with a boyfriend or girlfriend, separated, divorced, or widowed are considered single-parent families; those with parents who reported their marital status as married or legal domestic partnership are considered two-parent families.

[b]This refers to sample members who enrolled in Family Rewards with their spouse or legal domestic partner.

Differences between respondents and nonrespondents were tested in a regression model, in which the probability of response was regressed on a range of baseline covariates. The results are shown in Appendix Table E.9. None of the statistically significant differences shown in Table E.6 are statistically significant in the regression model. In addition, the full model is not statistically significant. Finally, the top row of Table E.6 shows that parent-teenager dyads in the control group were not more or less likely to respond to the survey than those in the program group.

Comparison Between the Research Groups in the Survey Respondent Sample

Selected baseline characteristics for program and control group survey respondents are shown in Tables E.7 and E.8. The two groups are similar across most dimensions, with a few exceptions. For example, parents in the program group are on average two years older than parents in the control group (43 versus 41 years old), and parents in the program group are less likely to be single.

Teenagers in the program group also have very similar baseline characteristics to those in the control group. The two groups did not differ significantly on any demographic, education, or health characteristic at the time of random assignment, except that a smaller percentage of teenagers in the program group had a physical problem that limited their activities than in the control group (Table E.8).

These differences are also estimated in a regression framework, in which the likelihood of being in the program group is regressed on a range of baseline characteristics (Table E.9). None of the differences found in Table E.7 are statistically significant in the full regression model, and the model as a whole is not statistically significant. While the differences discussed suggest some caution when interpreting survey impacts, these results are reassuring. Moreover, the characteristics for which there are differences between the research groups are included in the impact regression models.

Consistency of Impacts

The previous sections suggested some caution in interpreting the results from the survey for two reasons. First, the results for the survey sample may not be generalizable to the full research sample, given the difference between the fielded sample and the nonfielded sample in parents' employment activity before and at baseline, health insurance status, teenagers' race,

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Table E.7

Characteristics of Adult Sample at the Time of Random Assignment, by Research Group

Characteristic	Program Group	Control Group	Total	
Female (%)	94.1	94.4	94.3	
Age (%)				
18 to 24 years	0.0	0.0	0.0	
25 to 34 years	14.5	19.6	17.0	**
35 to 44 years	46.9	52.8	49.9	**
45 to 59 years	34.9	24.6	29.7	**
60 years or more	3.6	3.1	3.4	**
Average age (years)	43	41	42	**
U.S. citizen[a] (%)	83.2	84.9	84.1	
By birth	70.7	69.6	70.1	
By naturalization	12.6	15.4	14.0	
Legal permanent resident (%)	16.8	15.1	15.9	
Race/ethnicity (%)				
Hispanic/Latino	44.4	42.7	43.5	[ ]
White, non-Hispanic/Latino	0.6	0.3	0.4	[ ]
Black, non-Hispanic/Latino	54.5	55.6	55.1	[ ]
Other, non-Hispanic/Latino	0.6	1.1	0.8	
Education (%)				
GED certificate	8.9	11.8	10.4	
High school diploma	18.9	20.7	19.8	
Associate's degree/2-year college	8.5	7.1	7.8	
4-year college or beyond	13.3	10.7	12.0	
None of the above	50.4	49.6	50.0	
Marital status (%)				
Single	61.5	69.3	65.4	*
Cohabitating	2.2	1.4	1.8	*
Separated, widowed, or divorced	18.7	12.8	15.8	
Married or in a legal domestic partnership	17.6	16.5	17.0	
Primary language is English (%)	80.4	82.4	81.4	
Primary language is Spanish (%)	19.0	16.8	17.9	
Has an account at bank or credit union (%)	49.3	44.6	47.0	
Employment measures				
Currently working (%)	50.0	50.0	50.0	
Working full time[b] (%)	37.4	38.3	37.8	
Average weekly earnings, among those currently working ($)	425	402	413	
During past year, average number of months worked (%)	10	10	10	

(continued)

Table E.7 (continued)

Characteristic	Program Group	Control Group	Total	
Employment measures (UI)				
Employed in 4th quarter prior to random assignment (%)	47.8	47.2	47.5	
Average earnings in 4th quarter prior to random assignment ($)	2,821	2,474	2,647	
Employed in 3rd quarter prior to random assignment (%)	52.0	46.6	49.3	
Average earnings in 3rd quarter prior to random assignment ($)	3,100	2,753	2,927	
Employed in 2nd quarter prior to random assignment (%)	51.1	43.6	47.3	**
Average earnings in 2nd quarter prior to random assignment ($)	2,861	2,625	2,743	
Employed in 1st quarter prior to random assignment (%)	48.0	45.5	46.8	
Average earnings in 1st quarter prior to random assignment ($)	2,947	2,774	2,861	
Public assistance measures (%)				
Received TANF in the year prior to random assignment	40.2	39.9	40.1	
Received Medicaid in the 3 quarters prior to random assignment	62.3	69.0	65.6	*
Health measures (%)				
Health insurance coverage				
Public health insurance	68.0	70.9	69.5	
Employer health insurance	26.3	22.8	24.6	
Other health insurance	2.8	2.6	2.7	
Not covered	2.8	3.7	3.3	
Had annual medical checkup when not sick				
Within the past year	81.5	82.5	82.0	[ ]
1-2 years ago	14.6	14.1	14.3	[ ]
More than 2 years ago	3.4	3.4	3.4	[ ]
Never	0.0	0.0	0.0	[ ]
Last medical checkup was at own (regular) doctor's office or clinic (%)	96.5	95.7	96.1	
Had preventive dental checkup				
Within the past year	67.3	65.6	66.5	[ ]
1-2 years ago	21.1	22.7	21.9	[ ]
More than 2 years ago	10.4	10.8	10.6	[ ]
Never	1.1	0.9	1.0	[ ]
Self-rated health				
Excellent or very good	36.9	42.0	39.5	
Good	37.7	34.7	36.2	
Fair or poor	25.4	23.2	24.3	
Over the past two weeks, had little or no interest in doing things	27.2	24.1	25.7	
Over the past two weeks, had been feeling down, depressed, or hopeless	26.2	21.5	23.8	
Sample size	358	358	716	

(continued)

Table E.7 (continued)

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, and New York State Human Resources Administration administrative records.

NOTES: In order to assess differences in characteristics across research groups, chi-square tests were used for categorical variables and t-tests were used for continuous variables.
Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Sample sizes may vary because of missing values.
Rounding may cause slight discrepancies in calculating sums.
This table excludes information for enrolled second parents in two-parent households .
[a]Refers to both U.S. citizens by birth and by naturalization.
[b]Refers to 30 hours a week or more.

and special education and ELL status, and given the differences in single-parent status, receipt of food stamps, and self-rated health between individuals who responded to the survey and those who did not. Second, although accounted for in the impact regression model, there were a couple of differences in characteristics between program and control group respondents.

This section helps to put the survey results in context, by comparing impacts estimated from administrative data for the research, eligible, fielded, and respondent samples. Impacts for the research sample represent the best estimate of the program's effects, given that they use the full program group and control group, and not a potentially nonrandom subset of survey respondents. Thus, finding similar impacts for the survey sample and the larger research sample would give more credibility to the survey analysis. Table E.10 and Table E.11 present the results, showing impacts for employment outcomes, using unemployment insurance (UI) records data, and education outcomes, using data from New York City Department of Education records.

Data for employment outcomes (Table E.10) show a roughly similar story for the four samples, although the impacts tend to be a bit more negative for the respondent sample than for the research sample.[1] For example, the effect on "ever employed" for the research sample is –2.3 percentage points and statistically significant, compared with –8 percentage points and statistically significant for the respondent sample. Recall that program group survey respondents had higher UI-based earnings in the year before random assignment than did control group respondents, although this difference is controlled for in the impact regression model. Nonetheless, the data in Tables E.10 and E.11 suggest that program's impacts on employment and earnings and educational outcomes for the respondent sample are generally representative of the larger sample.

Table E.11 presents impacts on education outcomes for the research, eligible, fielded, and survey respondent samples. The overall story is the same across all samples.

[1]The employment data for the research sample includes all participating parents in each family, while the employment data for the fielded and respondent samples include only the primary adult.

The Opportunity NYC Demonstration: Family Rewards

Table E.8

Characteristics of Teenager Sample at the time of Random Assignment, by Research Group

Characteristic	Program Group	Control Group	Total
Gender (%)			
Female	53.4	51.3	52.3
Male	46.6	48.7	47.7
Age (%)			
0-5 years	0.3	0.0	0.1 [ ]
6-10 years	1.1	0.6	0.8 [ ]
11-13 years	22.9	23.7	23.3 [ ]
14 years or older	75.7	75.7	75.7 [ ]
Average age (years)	14	14	14
Born in the U.S. (%)	90.5	93.3	91.9
Race/ethnicity (%)			
Hispanic/Latino	44.0	41.4	42.7 [ ]
White, non-Hispanic/Latino	0.6	0.6	0.6 [ ]
Black, non-Hispanic/Latino	52.9	56.1	54.5 [ ]
Other, non-Hispanic/Latino	2.5	1.7	2.1
Type of school child attended in the past year (%)			
Public or charter school	99.7	98.9	99.3 [ ]
Private or parochial school	0.3	1.1	0.7
Education measures (%)			
Teenager met 8th-grade math learning standards	39.1	38.3	38.7
Teenager's parent attended parent-teacher conference during past year			
Never	2.3	4.3	3.3
1-2 times a year	39.4	34.5	36.9
3-4 times a year	32.6	32.2	32.4
5-6 times a year	12.7	12.4	12.6
More than 6 times a year	13.0	16.7	14.8
Teenager's parent spoke to teacher about his or her grades, tests, or homework during past year			
Not at all	1.4	2.0	1.7
A little	6.5	6.4	6.5
Some	20.2	15.7	18.0
A lot	36.5	35.3	35.9
A great deal	35.4	40.6	38.0
Enrolled in special education in the past school year	13.4	12.6	13.0 [ ]
Enrolled as an English Language Learner in the past school year	11.8	11.3	11.5

(continued)

Table E.8 (continued)

Characteristic	Program Group	Control Group	Total	
Teenagers' health outcomes (%)				
Received Medicaid in the 3 quarters prior to random assignment	65.4	66.8	66.1	
Health insurance coverage				
Public health insurance	76.0	76.9	76.4	
Employer health insurance	21.2	17.5	19.3	
Other health insurance	1.1	2.3	1.7	
Not covered	1.7	3.4	2.5	
Parent's rating of teenager's health				
Excellent	42.2	42.3	42.2	[ ]
Very good	29.9	31.0	30.4	[ ]
Good	26.3	22.5	24.4	[ ]
Fair	1.1	3.7	2.4	[ ]
Poor	0.6	0.6	0.6	[ ]
Had annual medical checkup when not sick				
Within the past year	89.9	88.5	89.2	[ ]
1-2 years ago	8.7	10.4	9.6	[ ]
More than 2 years ago	1.4	1.1	1.3	[ ]
Never	0.0	0.0	0.0	
Last annual checkup was at own (regular) doctor's office or clinic	97.7	98.0	97.8	
Had preventive dental checkup:				
Within the past year	74.2	72.9	73.6	[ ]
1-2 years ago	20.7	19.5	20.1	[ ]
More than 2 years ago	4.2	6.5	5.3	[ ]
Never	0.8	1.1	1.0	[ ]
Has physical problem that limits his or her activities	8.7	12.6	10.7	*
Has an emotional or mental health problem that limits activities	4.8	6.0	5.4	
Sample size	358	358	716	

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, and New York State Human Resources Administration administrative records.

NOTES: In order to assess differences in characteristics across research groups, chi-square tests were used for categorical variables and t-tests were used for continuous variables.

Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Brackets ([ ]) around significance levels indicate that the chi-square tests for statistical significance are not valid because sample sizes within categories are too small.

Sample sizes may vary because of missing values.

Rounding may cause slight discrepancies in calculating sums.

The Opportunity NYC Demonstration: Family Rewards

Table E.9

Estimated Regression Coefficients for the Probability of Being a Program Group Respondent to the Family Rewards Child Study Survey

	Respondent Sample	
Variable	Parameter Estimate	P-Value
Family baseline measures		
Target teenagers proficient on English Language Arts test, 2007	0.095	0.657
Target teenagers proficient on math test, 2007	-0.023	0.915
Community District Bronx 5	-0.519	0.147
Community District Bronx 6	-0.393	0.255
Community District Brooklyn 5	-0.101	0.740
Community District Manhattan 10	-0.148	0.654
Community District Manhattan 11	-0.499	0.116
Number of children in household	0.027	0.734
Primary language spoken at home is English	-0.379	0.247
Two-parent family	0.142	0.568
High school diploma, GED certificate, or above	0.230	0.256
Currently working	-0.059	0.793
Randomly assigned after September 2008	-0.168	0.536
Black, non-Hispanic/Latino	0.532	0.490
Hispanic/Latino	0.761	0.329
U.S. citizen by birth	0.140	0.567
Age	0.021	0.110
Family living in public housing or receiving Section 8	-0.217	0.255
Family receiving TANF or Safety Net Assistance	0.037	0.877
Covered by public health insurance	-0.009	0.971
Likelihood ratio	19.143	0.865
Wald statistic	16.493	0.943
Sample size	511	

SOURCES: MDRC calculations using Family Rewards Baseline Information Forms and New York City Department of Education administrative records.

NOTES: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

The Opportunity NYC Demonstration: Family Rewards

Table E.10

Year 1 Impacts on UI-Covered Employment and Earnings for the Research, Fielded, and Respondent Samples

Outcome	Program Group Average	Program Group N	Control Group Average	Control Group N	Difference (Impact)	P-Value
Ever employed (%)						
Research sample	56.2	2,513	58.5	2,481	-2.3 **	0.011
Eligible sample	55.7	453	59.5	450	-3.8 *	0.059
Fielded sample	58.1	358	53.4	358	-4.7 **	0.043
Respondent sample	59.1	249	51.1	262	-8.0 ***	0.004
Average quarterly employment (%)						
Research sample	49.0	2,513	50.3	2,481	-1.3 *	0.091
Eligible sample	50.7	453	52.3	450	-1.6	0.340
Fielded sample	50.7	358	47.8	358	-2.9	0.129
Respondent sample	51.2	249	46.5	262	-4.7 **	0.038
Employed 4 consecutive quarters (%)						
Research sample	40.8	2,513	41.8	2,481	-1.0	0.252
Eligible sample	45.2	453	45.6	450	-0.4	0.857
Fielded sample	44.2	358	41.6	358	-2.6	0.242
Respondent sample	44.4	249	40.6	262	-3.8	0.157
Total earnings ($)						
Research sample	12,114	2,513	12,354	2,481	-240	0.284
Eligible sample	13,506	453	13,704	450	-198	0.677
Fielded sample	12,879	358	12,910	358	31	0.950
Respondent sample	12,597	249	12,565	262	-32	0.956

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, and New York State Human Resources Administration administrative records.

NOTES: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members

Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Sample sizes may vary because of missing values.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

The Opportunity NYC Demonstration: Family Rewards

Table E.11

Impacts on Attendance and Credits for the Research, Fielded, and Respondent Samples

Outcome	Program Group Average	Program Group N	Control Group Average	Control Group N	Difference (Impact)	P-Value
9th-graders at random assignment (%)						
Attendance is 95% or higher, Year 1						
Research sample	34.0	988	31.6	991	2.5	0.226
Eligible sample	39.4	453	33.0	450	6.4 **	0.036
Fielded sample	37.8	358	33.7	358	4.0	0.237
Respondent sample	39.8	262	36.4	249	3.4	0.422
Attendance is 95% or higher, Year 2						
Research sample	28.8	988	23.7	991	5.2 ***	0.006
Eligible sample	32.5	453	25.1	450	7.4 ***	0.009
Fielded sample	31.3	358	24.8	358	6.5 **	0.037
Respondent sample	34.1	262	26.4	249	7.7 **	0.048
Attempted 11 or more credits, Year 1						
Research sample	87.8	988	83.9	991	3.9 ***	0.006
Eligible sample	91.8	453	84.9	450	6.9 ***	0.001
Fielded sample	93.5	358	87.8	358	5.8 ***	0.003
Respondent sample	93.8	262	88.1	249	5.7 **	0.013
Attempted 11 or more credits, Year 2						
Research sample	80.5	988	77.9	991	2.6	0.126
Eligible sample	84.7	453	80.3	450	4.4 *	0.074
Fielded sample	85.2	358	81.5	358	3.7	0.158
Respondent sample	90.4	262	85.2	249	5.2 *	0.056

SOURCES: MDRC calculations using data from Baseline Information Forms, New York State unemployment insurance (UI) wage records, New York State Human Resources Administration administrative records, and New York City Department of Education Records.

NOTES: Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of family or sample members

Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Sample sizes may vary because of missing values.

The p-value indicates the likelihood that the difference between the program and control group arose by chance.

Conclusion

Overall, the variety of tests that were conducted and the results that are presented suggest that the survey sample provides valid estimates of the program's effects and that these effects are representative of those that would have been obtained for the full research sample. Although the survey sample differed from the full sample in terms of U.S. citizenship and residency status and teenagers' health insurance status, the administrative records impacts for the survey sample are similar to those for the full research sample.

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MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York City and Oakland, California, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are proactively shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-offenders and people with disabilities, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.