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ABSTRACT

This report examines effects of the Self-Sufficiency Project (SSP) for three age groups of children (younger cohort aged 3-5, middle cohort aged 6-11, and older cohort aged 12-18) at the 36-month interview. A companion report on effects of the SSP on adults is available separately. Chapter 1 describes the SSP incentive, project design, and SSP impact on adult economic outcomes. Chapter 2 describes the sample and methods; describes the information used to assess the effects of SSP on families and children; and presents SSP adult impacts by child cohort. Chapter 3 reports that SSP had no effects on the younger cohort; had small positive effects on cognitive and school outcomes but no impacts on social behavior and emotional health for the middle cohort; and may have increased substance use and minor delinquent activity in the older cohort. Chapter 4 reports SSP had almost no effect on parenting behavior and parental functioning for families; increased child care participation for the younger cohort; increased child care and participation in after-school activities for the middle cohort; and had no impacts on child care or after-school activities but increased engagement in chores and employment for the older cohort. Appendixes include a report on assessing the effect of survey non-response on estimated impacts; measures of child and family functioning; program impacts by child gender and province; and differences in impacts across the age cohorts. (Contains 52 references.) (YLB)

The Self-Sufficiency Project at 36 Months:

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HUMAN RESOURCES DEVELOPMENT CANADA

Pamela Morris
Charles Michalopoulos

June 2000

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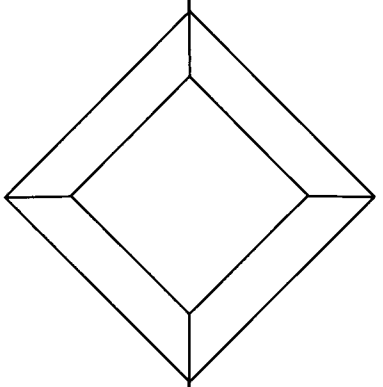
ERRATA

The Self-Sufficiency Project at 36 Months: Effects on Children of a Program that Increased Parental Employment and Income (June 2000)

Chapter 3 – page 53, 4th paragraph, 3rd line: "child support" should read "child report"

Appendix A – page 99, last paragraph: "16-month follow-up" should read "18-month"

Appendix B – page 108, last paragraph, 4th line: "a priority theory" should read "*a priori* theory"



The Self-Sufficiency Project at 36 Months:

Effects on Children of a Program that Increased Parental Employment and Income

Pamela Morris
Charles Michalopoulos

SRDC
SOCIAL RESEARCH AND DEMONSTRATION CORPORATION

June 2000

The Self-Sufficiency Project is sponsored by Human Resources Development Canada

The Social Research and Demonstration Corporation (SRDC) is a non-profit organization created in 1992 with the support of Human Resources Development Canada (HRDC) to develop, field test, and rigorously evaluate social programs designed to improve the well-being of all Canadians, with a special concern for the effects on disadvantaged Canadians. Its mission is to provide policy-makers and practitioners with reliable evidence about what does and does not work from the perspectives of government budgets, program participants, and society as a whole. It accomplishes this mission by evaluating existing social programs and by testing new social program ideas at scale, and in multiple locations, before they become policy and are implemented on a broader basis.

Other SRDC reports on the Self-Sufficiency Project (SSP):

Creating an Alternative to Welfare: First-Year Findings on the Implementation, Welfare Impacts, and Costs of the Self-Sufficiency Project. Tod Mijanovich and David Long. December 1995.

The Struggle for Self-Sufficiency: Participants in the Self-Sufficiency Project Talk About Work, Welfare, and Their Futures. Wendy Bancroft and Sheila Currie Vernon. December 1995.

Do Financial Incentives Encourage Welfare Recipients to Work? Initial 18-Month Findings from the Self-Sufficiency Project. David Card and Philip K. Robins. February 1996.

When Work Pays Better Than Welfare: A Summary of the Self-Sufficiency Project's Implementation, Focus Group, and Initial 18-Month Impact Reports. March 1996.

How Important Are "Entry Effects" in Financial Incentive Programs for Welfare Recipients? Experimental Evidence from the Self-Sufficiency Project. David Card, Philip K. Robins, and Winston Lin. August 1997.

Do Work Incentives Have Unintended Consequences? Measuring "Entry Effects" in the Self-Sufficiency Project. Gordon Berlin, Wendy Bancroft, David Card, Winston Lin, and Philip K. Robins. March 1998.

When Financial Incentives Encourage Work: Complete 18-Month Findings from the Self-Sufficiency Project. Winston Lin, Philip K. Robins, David Card, Kristen Harknett, and Susanna Lui-Gurr. September 1998.

Does SSP Plus Increase Employment? The Effect of Adding Services to the Self-Sufficiency Project's Financial Incentives. Gail Quets, Philip K. Robins, Elsie C. Pan, Charles Michalopoulos, and David Card. May 1999.

The Self-Sufficiency Project at 36 Months: Effects of a Financial Work Incentive on Employment and Income. Charles Michalopoulos, David Card, Lisa A. Gennetian, Kristen Harknett, and Philip K. Robins. June 2000.

SSP is funded under a contributions agreement with HRDC. The findings and conclusions stated in this report do not necessarily represent the official positions or policies of HRDC.

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Preface

This is the latest in a series of reports on the Self-Sufficiency Project. SSP is a test of a strategy to "make work pay" as a way of simultaneously addressing the problems of poverty and dependency. The participants in SSP were all single parents who had been receiving Income Assistance (IA) benefits for at least a year and, in many cases, much longer. The program that SSP offered them was a generous, but temporary, supplement to their earnings if they went to work full time and ceased receiving Income Assistance. The goal of SSP is to see whether this form of incentive is an effective way of putting more money into the hands of poor families and, at the same time, of encouraging work as a way to achieve greater economic self-sufficiency.

The Self-Sufficiency Project is a rigorous research project that uses a random assignment evaluation design — generally accepted to be the most reliable way of measuring program impacts. This is a long-term study that, ultimately, will last 10 years from start to finish.

The opening chapters of the unfolding SSP story have been exciting. Previous reports have shown that significant numbers of single-parent, long-term IA recipients are willing and able to leave welfare for work if employment can be made a financially rewarding alternative; that SSP's short-term impacts on full-time employment and earnings are among the largest ever seen in a rigorously evaluated welfare-to-work program; and that the effects can be even larger when the program is provided to a somewhat less disadvantaged group of IA recipients or when financial incentives are offered in combination with employment services.

The previously published results have been based on what happened in the first 18 months after participants became eligible for SSP's offer of financial assistance. In a companion report to this one, entitled *The Self-Sufficiency Project at 36 Months: Effects of a Financial Work Incentive on Employment and Income*, the results are extended for a further 18 months and show that, after 36 months, SSP's impacts on the labour market experiences of participants remain substantial.

SSP's evaluation is not limited to the economic circumstances of the single parents taking part. The project is also examining the effects SSP may have had on family functioning and on the well-being of the children in these families. The results presented here show that, overall, SSP had few effects and those that were observed were quite small. For example, there is no evidence of any effects on the youngest children's functioning. There were small positive effects on children's cognitive and school outcomes for those in a middle-age cohort. And among the oldest children, SSP may have produced small negative effects.

About six months ago, the operational phase of SSP concluded when the last of its participants reached the end of the period during which they were eligible to receive earnings supplements. Longer-term program impacts will be based on a subsequent survey of participants' post-program experiences. However, we believe that the findings that SSP has produced so far are already providing policy-makers with much useful evidence to guide social policy development.

With the end of project operations and the closure of our project offices, I would like to express my thanks to our colleagues at Family Services, Saint John, and Bernard C. Vinge & Associates, who operated our SSP project offices in New Brunswick and British Columbia, and to EDS Systemhouse in Halifax, operators of the SSP payroll and management information systems. I would also like to extend a special thanks to the almost 9,000 single parents who participated in SSP over the past seven years and without whose participation this research would not have been possible.

John Greenwood
Executive Director

Acknowledgements

This report reflects the collaboration of many people and organizations. First and foremost is Human Resources Development Canada (HRDC), the originator, sponsor, and supporter of the Self-Sufficiency Project. Special appreciation is due Jean-Pierre Voyer and Allen Zeesman of HRDC's Applied Research Branch. The project was managed by the Social Research and Demonstration Corporation (SRDC) and evaluated by staff at the Manpower Demonstration Research Corporation (MDRC) and SRDC; those who played a role in the development of this report are included in the lists below.

The questionnaires for the child study reflect the contribution of a number of people. Richard Veevers, Charlene Walker, and Joan Conway at Statistics Canada, along with Mary Pichette at HRDC, developed the data collection instruments. The content of the child survey and tests benefited from the suggestions and insights of researchers from many organizations: Allan Zeesman, Pat Grainger, Mary Pichette, Suzanne Peters, Miles Zyblock, Marilyn Willis, Richard Veevers, Scott Nowlan, Joan Conway, Greg Hoerz, Virginia Knox, John Love, David Cheal, Richard Tremblay, Martin Browning, Jeanne Brooks-Gunn, Michael Boyle, Daniel Keating, Rebecca Maynard, and Alan Pence. The math skills test was developed with help from Ernest Cheng and David Galatti of the Canadian Test Centre.

Thanks are due all those who helped gather and process the data for the study. Richard Veevers, Ann Brown, June Lavergne, Scott Meyer, and their staff at Statistics Canada collected and processed the survey, test, and administrative records data analyzed in this report. Sharon Manson Singer and her staff at British Columbia's Ministry of Social Development and Economic Security, and Karen Mann, Gary Baird, and their staff at Human Resources Development–New Brunswick have provided critical assistance regarding the Income Assistance system in the two provinces. Thanks, too, to Melony McGuire and Trudy Megeny at EDS Systemhouse Inc. in Nova Scotia for maintaining the Program Management Information System (PMIS). And, of course, none of the data analysis would have been possible without the dedicated work of the interviewers, who contacted the families, surveyed the parents and children, and administered the tests with the children.

Staff in the sites were indispensable in implementing the SSP program: Betty Tully, Elizabeth Dunn, and their staff at Bernard C. Vinge and Associates Ltd. in British Columbia, and Shelly Price, Linda Nelson, and their staff at Family Services Saint John, Inc., in New Brunswick.

The reviewers provided invaluable feedback on the report's analysis and presentation. At SRDC, John Greenwood and Saul Schwartz helped shape the focus of the report and the presentation of the results. At MDRC, Gordon Berlin, Robert Granger, Lisa Gennetian, and Judith Gueron provided many suggestions that helped strengthen the analysis and content. Appreciation also goes to Dan Offord, Michael Boyle, and Ellen Lipman at McMaster University, and Ariel Kalil at the University of Chicago for their thoughtful reviews. Finally, critical feedback was provided by members of MDRC's Income Support Studies Committee: Gary Burtless, David Ellwood, Rebecca Blank, Robert Reischauer, Henry Aaron, J. Lawrence Aber, Lindsay Chase-Landsdale, Mark Greenberg, Robert Solow, and Hiro Yoshikawa.

The report could not have been produced without the invaluable support of many others at MDRC. Martey Dodoo managed the creation of the data files, and Wanda Vargas and Tracey Hoy did the statistical programming. In addition to conducting the analyses of child outcomes, Wanda Vargas co-ordinated the document's production, created tables and figures, and checked the accuracy of the exhibits and text. Nina Gunzenhauser edited the report with the assistance of Robert Weber, and Stephanie Cowell did the word processing.

Finally, we are deeply grateful to all the children and families who participated in this study. Without their co-operation and the detailed information they provided, none of this research would have been possible.

The Authors

Executive Summary

For several decades, policy-makers have implemented policies designed to encourage welfare recipients to work. Especially promising is the use of financial work incentives, which have proved to increase employment, reduce welfare dependence, and at the same time increase family income. Little is known, however, about how policies that encourage welfare recipients to work affect children in these families. Do policies that increase employment and income among single parents also benefit children? Or do children suffer because increased employment reduces the time they spend with their parents and increases their parents' stress? Would the benefits of increased income help to overcome any negative effects of maternal[1] employment? This report seeks to address these issues by investigating the effects on families and children of a research and demonstration project called the Self-Sufficiency Project (SSP). SSP offers a rare opportunity to inform our understanding of how programs that increase employment and income may affect low-income children.

Conceived and funded by Human Resources Development Canada (HRDC), SSP is a research and demonstration project to test a policy innovation that makes work pay better than welfare. Managed by the Social Research and Demonstration Corporation (SRDC) and evaluated by staff at Manpower Demonstration Research Corporation (MDRC) and SRDC, SSP offered a temporary, but generous, earnings supplement to selected single parents who had been on Income Assistance (IA) for at least a year. To take advantage of the supplement offer, parents had to begin working full time (30 or more hours per week) and stop receiving Income Assistance within a year of being offered the supplement. The supplement was paid on top of earnings from full-time employment. Those who were eligible to receive it could do so for up to three years after finding full-time work, as long as they were working full time and not receiving Income Assistance. While collecting the supplement, a parent received an immediate payoff from work; in most cases, her total income before taxes was about twice her earnings. The supplement amount was not tied to family size or family structure and was a voluntary alternative to the IA program; recipients could not receive the supplement and Income Assistance at the same time.

The Self-Sufficiency Project was designed as a social experiment using a rigorous, random-assignment research model. In the main SSP study, a group of 5,686 single parents (primarily single mothers) in New Brunswick and the lower mainland of British Columbia who had been on Income Assistance for at least a year were selected at random from the IA rolls. One-half of these parents was randomly assigned to a *program group* and offered the SSP supplement, while the remainder formed a *control group*. Because the two groups were similar in all respects except whether they were allowed to participate in the program, the "impact" or effect of SSP can be measured in the difference between the program and control groups' subsequent experiences.

[1]Since 97 percent of the single-parent, long-term welfare recipients analyzed in this report are women, the term "maternal" and feminine pronouns are used throughout this report.

Families were surveyed three years after entering the study and being randomly assigned to one of the research groups, and information on mothers' economic outcomes and on child and family functioning was collected. A companion report on this sample examines the effects of SSP on parental outcomes such as employment, IA receipt, wage growth, and employment stability, as well as income level, material hardship, assets, and marriage.[2] This report examines SSP's impacts on children's academic functioning (for example, achievement in school), cognitive functioning (for example, test scores), social behaviour, emotional well-being, and health. In addition, it explores impacts on maternal physical and emotional health, interactions between mothers and children, child care and children's after-school activities, school and residential changes, and family structure. These impacts were measured at 36 months after random assignment, during the period when members of the program group who "took up" the supplement (by finding work in the year after random assignment and leaving Income Assistance) were eligible to receive supplement payments. Those supplement takers who went to work shortly after random assignment were nearing the end of their eligibility, while those who found work at the end of their first year after random assignment could still receive the supplement for a full year after the 36-month survey. A future report will examine how children are faring after the three years of supplement eligibility has ended.

THE FINDINGS IN BRIEF

The effects of SSP were studied for three age groups of children. A younger cohort included children who were less than three years old when their parents entered the study. These children were three to five years old at the time of the 36-month interview. A middle cohort included children who were three to eight years old when their parents entered the study; this group was 6 to 11 years old at the time of the 36-month interview. An older cohort was 9 to 15 years old when their parents entered the study, and 12 to 18 at the time of the 36-month interview. The major findings are summarized below:

- **SSP increased full-time employment, earnings, and income, and reduced poverty**. About one-third of the parents in the program group found full-time jobs within the first year after random assignment and took up the earnings supplement. By the beginning of the second year after random assignment, the program had doubled full-time employment. Although these impacts declined somewhat through the remainder of the follow-up period, they were still strong at the time of the 36-month interview. Although parents had to leave Income Assistance to receive the SSP supplement, the combination of increased earnings and SSP supplement payments more than outweighed the loss of IA payments, leaving families in the program group with substantially more income than families in the control group. Among welfare programs that have been studied using random assignment, SSP has been a rare triple winner, encouraging work, increasing income, and reducing poverty.
- **SSP had no effects on the youngest children's functioning**. For children in the younger cohort, who were infants and toddlers at the beginning of the program, SSP did not affect test scores, social behaviour, emotional well-being, or health. These

[2]Michalopoulos et al., 2000.

children were very young when their parents entered the study. It is therefore reassuring that on average they were not harmed even though many of their parents began working full time.

- **SSP increased the number of young children in child care**. Children in the younger cohort in the program group were more likely than similar children in the control group to attend formal child care programs such as preschool and extended day programs, and to participate in informal child care arrangements such as with baby-sitters or relatives in a home setting. There were no differences between the research groups, however, in how parents interacted with their children.
- **For the middle cohort, SSP had small positive effects on children's cognitive and school outcomes. On many other measures, program and control groups did not differ**. Children in the program group scored slightly higher on a math test than children in the control group, and parents of children in the program group gave more positive reports of their children's achievement in school than did parents of children in the control group. There was also some suggestion, based on parents' reports, that children in the program group were in better health. On the other hand, middle cohort children in the two research groups displayed similar social behaviour and emotional health on average.
- **Children in the middle cohort program group were more likely than their peers in the control group to be cared for by baby-sitters and relatives, and to participate in lessons and sports after school**. As would be expected with the increases in maternal employment, middle-cohort children in the program group were more likely than similar children in the control group to be cared for by someone other than their mother. This increase in non-maternal care was primarily in informal arrangements in a home setting. Children in the program group also were more likely than children in the control group to be involved in after-school activities, including lessons, sports, and clubs. Again, however, there were no differences between the research groups in how parents interacted with their children.
- **For children in the older cohort, SSP may have increased minor delinquency and tobacco, alcohol, and drug use. The program did not affect many other outcomes that were examined**. On measures of children's health and emotional adjustment and on a math skills test, older children in the program and control groups did not differ. In their self-reports, however, more older children in the program group than in the control group reported staying out late, smoking, drinking, and using drugs. Both mothers and children in the program group reported slightly lower academic achievement for this older cohort of children than did their counterparts in the control group. These results should be interpreted more cautiously than the findings for the younger and middle cohorts of children, because many more families with children in the older age group did not respond to the 36-month interview.
- **For older children, SSP did not affect after-school activities, but older children in the program group took on greater responsibilities and experienced more changes in family structure than did their peers in the control group**. Although SSP increased employment of parents of older children, older children in the program and control groups participated in similar levels of after-school activities. On the

other hand, older children in the program group were more likely to do household chores and to work long hours outside the home. In addition, SSP significantly increased marriage and children's contact with their second parent for older children in New Brunswick, and significantly decreased children's contact with their second parent for older children in British Columbia. As with the younger and middle cohorts of children, there were no differences between the research groups in how parents interacted with their children.

- **Small effects on children's outcomes for the middle and older cohorts of children may be masking more pronounced effects for children in families that took up the supplement**. In general, the effects on children's functioning due to SSP are relatively small. These averages, however, may be hiding important variation in the sample. In particular, any differences in children's outcomes are likely to be confined to the one-third of families in which parents ever took up the SSP supplement. If SSP did not affect the children of parents who did not take up the supplement, then changes in children's outcomes for those families who did take up the supplement must have been much larger than the effects of SSP overall.

These findings suggest small positive effects for the middle cohort of children and small negative effects for the older cohort of children, but only in certain areas of functioning. The youngest children in the sample, the focus of many people's concerns, did not experience any measurable effects, either positive or negative. Given the small and limited impacts, it is too early to draw conclusions about what might be the long-term effects on children of a program like SSP. Further follow-up is planned as part of this study, and several related studies of the effects on children of programs that increase employment and family income are currently under way. The data from these studies will be critical in enabling researchers to draw more definitive conclusions about the effects of such programs on children.

FEATURES OF SSP

SSP was designed to make work a viable alternative to welfare for low-income single parents whose skills and experience would likely relegate them to low-paying jobs. Eligibility for the study was limited to long-term welfare recipients (with at least one year of IA receipt).

The key features of the SSP program are:

- **Full-time work requirement**. Supplement payments are made only to eligible single parents who work full time (an average of at least 30 hours per week over a four-week or monthly accounting period, in one or more jobs) and who leave Income Assistance.
- **Substantial financial incentive**. The supplement is calculated as half the difference between a participant's earnings from employment and an "earnings benchmark" set by SSP for each province. Each benchmark was set at a level that would make full-time work pay better than Income Assistance for most recipients. During the first year of operations, the benchmark was $30,000 in New Brunswick and $37,000 in British Columbia. The benchmark has been adjusted over time to reflect changes in the cost of living and the generosity of Income Assistance. The supplement is reduced by 50 cents for every dollar of increased earnings. Unearned income (such as child

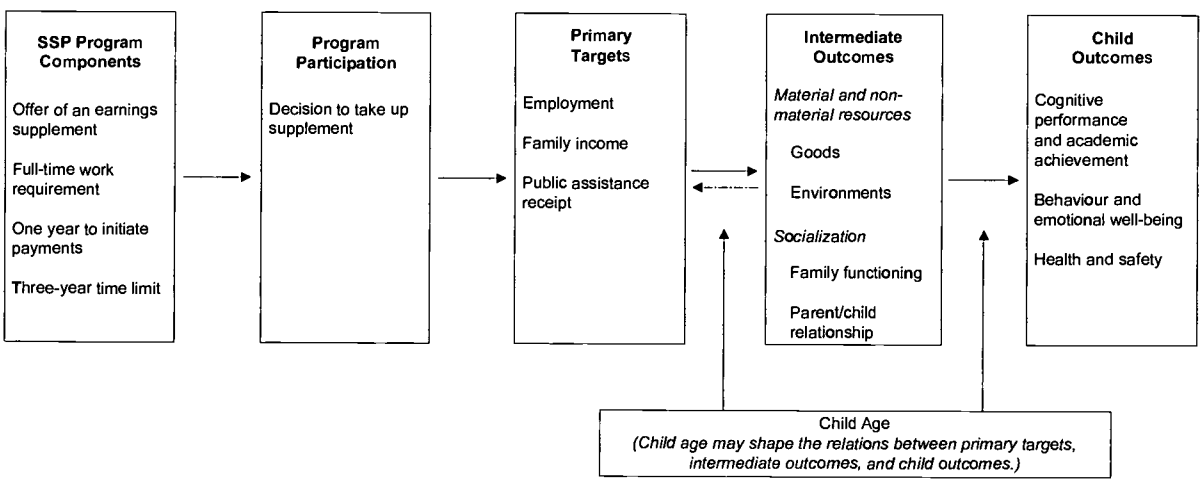
support), earnings of other family members, and number of children do not affect the amount of the supplement.

- **One year to take advantage of the offer**. A person could sign up for the supplement if she found full-time work within the year after random assignment. If she did not sign up during that year, she could never receive the supplement.
- **Three-year time limit on supplement receipt**. A person may collect the supplement for up to three calendar years from the time she began receiving it, as long as she is working full time and not receiving Income Assistance.
- **Voluntary alternative to welfare**. People cannot receive IA payments while receiving the supplement. No one is required to participate in the supplement program, however. After beginning supplement receipt, people may decide at any time to return to Income Assistance as long as they give up supplement receipt and meet the eligibility requirements for Income Assistance. They can also renew their supplement receipt by going back to work full time at any point during the three-year period in which they are eligible to receive the supplement.

HOW MIGHT SSP AFFECT CHILDREN?

Figure ES.1 presents the *pathways* by which SSP might affect children — that is, the aspects of children's lives that may be affected by SSP and that, in turn, might result in better or worse outcomes for children. The figure represents the SSP program through four components: the offer of a supplement, the full-time work requirement, the one year of eligibility, and the three-year time limit. Parents in the program group participate by deciding to take up the SSP supplement. For families in which parents take up the supplement, SSP influences the primary targets of employment, public assistance, and family income. Changes in these primary targets may translate into changes in intermediate outcomes such as spending on food and interactions between parents and children. It is through these intermediate outcomes that the program is most likely to ultimately affect children.

Figure ES.1: Conceptual Model of the Effects of SSP on Child Outcomes



Note: Program components may influence intermediate and child outcomes directly without influencing the primary targets of the program.

Social science research suggests two main pathways by which welfare and employment programs might affect children. Through the first pathway, a *resource path,* employment and income affect the resources that families can provide for their children and that, in turn, can influence children's development. These resources include both material resources, such as food or books, and non-material resources, such as interactions with teachers and peers, that parents provide for their children. Through the second pathway, the *socialization path*, income and employment affect children by influencing their role models, their family's functioning, and their interactions with their parents. For example, increased income might reduce maternal stress that, through changes in the parent-child relationship, may influence children's development. Both of these pathways are depicted in the conceptual model in Figure ES.1 under intermediate outcomes.

The parents who qualified for the supplement can be divided theoretically into two groups. Some members of the program group would have worked full time without the supplement offer and received the supplement without changing their employment behaviour. For this group, the supplement increased income and reduced poverty but did not increase employment, earnings, or hours of work. Children in these families likely benefited from their families' increased income. Other parents in the program group began working full time because of the supplement offer. For this set of families, any changes in children's functioning are a result of *both* changes in full-time employment and changes in income. It is impossible to know which families fall into which group. In the analyses of the effects of SSP on children, therefore, the effects of employment cannot be easily distinguished from the effects of income, and the impacts of SSP on children will reflect the effects of increased income and employment together.

SAMPLE AND METHODS

Between November 1992 and March 1995, 5,686 families in New Brunswick and British Columbia were assigned at random to the program and control groups of SSP (2,859 to the program group and 2,827 to the control group). In New Brunswick, SSP operated in a region covering roughly the lower third of the province, including the cities of Saint John, Moncton, and Fredericton. In British Columbia, the program operated in the lower mainland, which includes the Vancouver metropolitan area as well as neighbouring areas to the north, south, and east. Out of the full research sample, families were chosen to participate in the child study if they had at least one child between the ages of 4 and 18 years in the home when the 36-month interview was conducted. The sample of families analyzed in this report consists of all families for which any of the parent or child surveys or child tests were completed — a total of 3,259 families with 5,078 children. All children analyzed had been in the home at random assignment and were also living with their parent at the 36-month follow-up.

The report uses data from a variety of sources. A baseline survey administered at the time of random assignment provides background information on the families. Administrative records give information on recipients' use of the IA program and receipt of the earnings supplement. Follow-up surveys at 18 and 36 months after random assignment provide information on recipients' employment, earnings, income, hardship, and expenditures. There are three primary sources of information on family and child outcomes, all of which were collected 36 months after random assignment. These include parent surveys to gather data on

all children in the household, language tests conducted with children between four and seven years old at the time of the 36-month interview, math tests conducted with children between 7 and 15 years old at that time, and surveys conducted with children who were then age 10 and older.

In assessing the reliability of information obtained through surveys, an important concept is the *response rate*, or the proportion of people asked to complete a survey who actually did so. The response rate provides one indication of how well the group that responded to the survey represents the sample of all families who were asked to complete the survey. Across the survey and test assessments just described, the response rate was 81 percent. That is, 81 percent of families asked to complete one or more parts of the assessment completed at least one. On some of the tests and surveys of children, however, response rates were quite low. This was particularly true of the surveys conducted with the older children in the family; only 64 percent of children between 12 and 18 years old who were asked to complete this part of the survey did so.[3] Response rates were similar in the program and control groups, providing greater confidence in the estimates of the effects of the program. Nevertheless, when a survey has a low response rate, the sample members who respond to the survey might not be representative of the entire group for whom the survey was intended. Average outcomes for survey respondents might then be different from average outcomes for the entire group, and the impacts of the program on survey respondents might lead to incorrect conclusions about the true effects of the program. To assess whether results using the survey respondents were representative, several analyses were conducted. While survey respondents and non-respondents had somewhat different family characteristics, there was little evidence that impacts of the program based on information about survey respondents were different than they would have been if all families had responded to the survey. Still, results of analyses based on data with such low response rates should be viewed with caution.

As described earlier, this report examines the impact of SSP on three age cohorts of children. Children of different ages may react very differently to increases in maternal employment and family income. Young children, particularly infants and toddlers, may be most sensitive to maternal absence. At the same time, research suggests that preschool children may benefit the most from increases in family income because their cognitive functioning is developing so rapidly during this period. Older children may benefit from maternal employment and family income changes if they are placed in supervised care settings after school. Adolescents may be asked to assist working mothers with household chores and may be left to care for themselves after school; their lack of supervision may increase risk-taking behaviour.

The adults in the sample are primarily single mothers (although a few are single fathers), half of whom were never married at random assignment. These parents were expected to have problems finding work, especially work at high wages. Half of them did not have a high school diploma at random assignment, almost a quarter reported physical problems that kept them from working, and one-sixth had three or more children. Many reported they could not work because of personal or family responsibilities, child care needs, or an illness or

[3]The response rates were particularly low for the oldest children in this cohort, ages 15–18, for whom response rates were at 57 percent.

disability. Almost three-fourths of all sample members, however, reported that they could find someone they trusted to care for their children if they worked.

In the assessment of SSP's effect on children and families, the difference between the program and control group levels on outcomes for adults and children is used to determine the *impact* of SSP. An impact is determined to be *statistically significant* if it has less than a 10 percent probability of occurring by chance.

IMPACTS ON ADULT ECONOMIC OUTCOMES

SSP was remarkably successful in its goals of increasing employment, reducing reliance on Income Assistance, and increasing family income over the 36-month follow-up period analyzed in this report. The findings on these adult economic outcomes for the sample of families analysed in this report are presented in Table ES.1. A companion report (Michalopoulos et al., 2000) contains greater detail about the effects of SSP on employment and income through 36 months.

Table ES.1: SSP Summary of Impacts on Economic Outcomes for Families Over the 36-Month Follow-Up Period

	Program Group	Control Group	Difference (Impact)
Employment, earnings, and income, months 1 to 34[a]			
Ever employed full time[b] (%)	51.57	38.75	12.82 ***
Monthly earnings ($)	310.44	219.38	91.06 ***
Monthly income from Income Assistance ($)	645.43	726.14	-80.70 ***
Monthly income from SSP supplement payments ($)	152.14	0.00	152.14 ***
Total income from earnings, Income Assistance, and SSP ($)	1,113.22	957.33	155.89 ***
Employment and income 6 months prior to interview			
Employed full time (%)	33.98	23.86	10.12 ***
Monthly pre-tax income ($)	1,619.53	1,443.03	176.50 ***
Monthly income below low-income cut-off (%)	78.12	86.80	-8.68 ***
Expenditures and hardship, at 36 months			
Monthly food expenditures ($)	383.42	368.10	15.32 **
Used food bank/could not afford food (%)	35.27	40.76	-5.49 ***
Good neighbourhood quality (%)	75.15	76.70	-1.55
Household/structural problems (%)	20.87	22.90	-2.02
Health care problems (%)	31.82	33.06	-1.24
Sample size (total = 3,259)			

Sources: Calculations from the baseline survey, IA administrative records, the 18-month follow-up core survey, and the 36-month follow-up core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

[a]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[b]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

- **SSP increased full-time employment and earnings and reduced receipt of Income Assistance.**

Just over one-third of the program group members found full-time employment during the year after random assignment and received at least one supplement payment. Over the 36-month follow-up period, 51.6 percent of parents in the program group worked full time at some point, compared with 38.8 percent of parents in the control group. As a result, SSP increased full-time employment by almost 13 percentage points, the difference in the rate of full-time employment between the two research groups.

The impacts on full-time employment increased over the first year of follow-up and diminished somewhat by the third year of follow-up (not shown in the table). By the beginning of the second year after random assignment, SSP had doubled full-time employment, from about 15 percent of the control group to about 30 percent of the program group. In the second half of the follow-up period, the program's impacts on full-time employment diminished somewhat to about 10 percentage points. This reduction in the program impact was largely due to control group members moving into employment during the follow-up period. Because parents in the program group had to leave Income Assistance in order to receive the earnings supplement, the increases in full-time employment were almost exactly mirrored by a decline in Income Assistance.

- **SSP increased total family income and expenditures on necessities but had few impacts on hardship.**

When program group members worked full time, they also received SSP supplement payments. The combined earnings and supplement produced much higher income on average for families in the program group than families in the control group received from earnings and Income Assistance. As is shown in Table ES.1, parents in the program group earned about $90 more per month than parents in the control group. Although they received about $80 per month less in income from Income Assistance, this loss was more than offset by average supplement payments of about $150 per month. The program's impacts on employment and income persisted into the six-month period prior to the interview. As a result, 78.1 percent of families in the program group had income below Statistic Canada's low-income cut-off compared with 86.8 percent of the control group, a difference of 8.7 percentage points. These averages probably mask important variation within the sample, because only one-third of families took up the supplement. For this third of families in the program group, the program's impacts on earnings, income, and other outcomes was about three times as high as the impact of the program averaged across all members of the sample. Families used much of their extra income to buy basic necessities. For example, the average family in the program group spent $15 more per month on food than the average family in the control group and was less likely to use a food bank. There were few effects on measures of hardship, however; SSP had little effect on neighbourhood quality, household problems, or health care.

- **In general, impacts on adult economic outcomes were similar for mothers of the three age cohorts of children.**

Only minor differences in impacts on adult economic outcomes were found for parents of the three age cohorts of children. For all three groups, SSP increased employment and

earnings, but the effects of SSP on employment and income from earnings, SSP, and Income Assistance were slightly greater for mothers of younger children than for mothers of older children.

These similarities in impacts on employment and income do not imply that the impact of SSP on children will be similar across the three age cohorts of children. First, children of different ages may respond differently to the same behaviour of their mothers. For example, younger children may be more sensitive to increases in maternal employment than their older peers. Second, parents may respond differently to increases in employment depending on the ages of their children. For example, they may place their younger children in child care while they work but expect their older children to care for themselves.

IMPACTS ON CHILDREN'S OUTCOMES

Children's outcomes were measured in three broad categories: cognitive performance and academic achievement, including children's test scores and their grades in academic subjects; social behaviour and emotional well-being, including measures of positive and negative social behaviour, depression, and anxiety; and health, including measures of general health and long-term health conditions. Measures were based on tests, parents' reports about their children, and children's reports about themselves.

- **There were no significant impacts on outcomes for children in the younger cohort.**[4]

Children in the younger cohort were given a test of their understanding of language called the Peabody Picture Vocabulary Test–Revised (PPVT-R). In addition, parents were asked about their children's social behaviour, emotional well-being, and health. As can be seen in Table ES.2, there were no significant impacts in any of these three areas. Considering that these children were infants and toddlers at the start of the program, it is reassuring that the increases in full-time maternal employment induced by the supplement offer did not hurt them. Perhaps the increase in income that accompanied the full-time employment of mothers in the program group offset any negative effects of full-time employment.

- **There were small positive impacts for the middle cohort in cognitive and health outcomes, but not in their social behaviour and emotional well-being.**[5]

For the middle cohort of children, effects on children's cognitive outcomes were consistent, but small, across parents' reports and tests (see Table ES.3). Children in the middle cohort in the program group scored higher on a math test than their peers in the control group, and mothers in the program group rated their children higher on academic performance in school than did mothers in the control group. These impacts seem to be concentrated in the younger children in this cohort, who were three to five years old at

[4]Impacts on children in the younger cohort did not differ by child gender or by province.

[5]When examined separately by child gender, the impacts of SSP on outcomes for children in the middle cohort were much more pronounced for girls than for boys. These differences in impacts between boys and girls, however, were generally insignificant. Impacts for children in New Brunswick were similar to impacts for children in British Columbia.

random assignment and six to eight years old at the time of the 36-month interview (result not shown in the table).

Table ES.2: SSP Impacts on Child Outcomes for the Younger Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)
Cognitive functioning			
PPVT-R score[a]	92.18	91.32	0.86
Behaviour and emotional well-being			
Behaviour problems[b]	1.48	1.48	0.00
Positive social behaviour[c]	2.51	2.53	-0.03
Health			
Average health[d]	4.01	4.05	-0.04
Any long-term problems[e] (%)	25.60	27.43	-1.83
Sample size[f]	**503**	**540**	

Sources: Calculations from the baseline survey, the 36-month follow-up parent survey, and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]This scale was scored as the average score across the items in the hyperactivity, internalizing (depression and anxiety), and externalizing (negative social behaviour) subscales. Scores ranged from 1 ("never") to 3 ("often").

[c]This scale was computed as the average score across the items in the positive social behaviour scale. Scores ranged from 1 ("never") to 3 ("often").

[d]An average score of children's general health was computed across four items. Responses ranged from 1 ("false") to 5 ("true").

[e]Parents were asked whether their children had been diagnosed with any long-term conditions or health problems that limit their participation in any activity.

[f]Sample sizes reflect the largest sample of all measures shown.

According to parents' reports, children in the program group were in slightly better health and were slightly less likely to have long-term health problems than children in the control group. For example, 37 percent of children in the control group were reported to have long-term health problems such as asthma, bronchitis, and learning and emotional problems, compared with 32.4 percent of children in the program group, a difference of nearly five percentage points. In their positive behaviour, children in the program and control groups did not differ, either in their parents' or in their own reports.

These findings suggest that SSP's large positive impacts on maternal employment, earnings, and income had modest positive effects on children, at least in selected areas. Considering that the positive impacts of SSP are probably concentrated in the third of families who ever received the supplement, effects on children in these families were probably much larger than the average effects shown in Table ES.3.

Table ES.3: SSP Impacts on Child Outcomes for the Middle Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)
Cognitive/academic functioning			
PPVT-R score[a] (ages 6-7)	93.21	90.78	2.43
Math score[b] (ages 7-11)	0.56	0.52	0.04 **
Average achievement[c]	3.71	3.61	0.10 **
Below-average, any subject[d] (%)	22.84	25.65	-2.81
Behaviour and emotional well-being			
Behaviour problems[e]	1.42	1.43	-0.01
Positive social behaviour[f]	2.58	2.59	-0.01
School behaviour problems[g]	1.25	1.26	0.00
Health			
Average health[h]	4.11	4.02	0.09 **
Any long-term problems[i] (%)	32.43	36.98	-4.55 **
Sample size[j]	**1,111**	**1,047**	

Sources: Calculations from the baseline survey, the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]An average score across children's achievement in math, reading, and writing was computed ranging from 1 ("not very well at all") to 5 ("very well").

[d]Children with a score below 3 ("average") on any one of three academic subjects were scored as below average in any subject.

[e]This scale was computed as the average score across the items in the hyperactivity, internalizing (depression and anxiety), and externalizing (negative social behaviour) subscales. Scores ranged from 1 ("never") to 3 ("often").

[f]This scale was computed as the average score across the items in the positive social behaviour scale. Scores ranged from 1 ("never") to 3 ("often").

[g]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses ranged from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[h]An average score of children's general health was computed across four items. Responses ranged from 1 ("false") to 5 ("true").

[i]Parents were asked whether their children had been diagnosed with any long-term conditions or health problems that limit their participation in any activity.

[j]Sample sizes reflect the largest sample of all measures shown. However, sample sizes vary largely across the measures, ranging from 235 to 1,111 in the program group.

- **The program may be having small adverse effects on the older cohort of children.**[6]

Table ES.4 presents the impacts on outcomes for the older cohort of children. Recall that response rates on the adolescent report outcomes were very low and therefore impacts on these outcomes should be interpreted more cautiously. Small unfavourable effects for the older children in the sample were found on children's school functioning as reported in the parents' and adolescents' reports. Mothers in the program group reported lower average school achievement for their children than did mothers in the control group. Likewise, nearly 19 percent of children in the program group said they were below average in at least one subject in school, compared with about 14 percent of the control group, an impact of nearly five percentage points. On the other hand, there were no differences between children in the two research groups on a math test, the one objective measure of their academic performance.

Results on children's problem behaviours were more consistent. While there were no differences in adolescents' risk of depression, SSP appeared to increase use of tobacco, alcohol, and drugs and to increase involvement in minor delinquent activity, such as staying out late or all night (according to adolescents' own reports). There were no differences in major delinquent activity such as stealing, carrying weapons, and involvement with police, and there were no differences in use of harder drugs, such as cocaine and LSD (not shown in the table). As with the middle cohort of children, these effects were small overall but may be masking more pronounced effects for the children in the one-third of families who took up the supplement.

- **Maternal background characteristics do not seem to explain impacts across age groups of children.**

SSP appears to have benefited children in the middle cohort somewhat, contributed to problematic behaviour for children in the older cohort, and had little effect on children in the younger cohort. Younger children, however, tend to be in very different families than older children. Their parents are much younger and much more likely never to have married, are less likely to have physical or emotional problems, and are less likely to be very long-term welfare recipients. Therefore, impacts for children in different age groups might be due to their parents' characteristics rather than their own age.

In an effort to investigate whether parental differences or children's age differences were responsible for differences in impacts, several statistical analyses were conducted. In these analyses, differences in characteristics of parents and families could not account for differences in impacts across the three cohorts of children. These analyses support the conclusion that the effects of SSP on children depend on the age of the children.

[6]Program impacts on children's outcomes for the older cohort of children were examined by child gender and by province. Program impacts appear to be slightly larger for girls than for boys, but not significantly so. Program impacts generally did not differ by province.

Table ES.4: SSP Impacts on Child Outcomes for the Older Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)
Cognitive/academic functioning			
Math score[a] (ages 12-14)	0.45	0.46	-0.01
Parental report			
Average achievement[b]	3.43	3.54	-0.11 *
Below-average, any subject[c] (%)	32.61	32.39	0.22
Adolescent report			
Average achievement[b]	3.50	3.57	-0.07
Below-average, any subject[c] (%)	18.91	14.26	4.65 **
Behaviour and emotional well-being			
Parental report			
School behaviour problems[d]	1.40	1.34	0.06 *
Adolescent report			
Frequency of delinquent activity[e] (ages 12-14)	1.35	1.38	-0.03
Frequency of delinquent activity[e] (ages 15-18)	1.40	1.34	0.07 **
Any smoking (%)	26.52	22.13	4.39 *
Drinks once a week or more (%)	8.91	4.65	4.27 ***
Any drug use (%)	18.63	14.34	4.29 *
At risk for depression (ages 15-18) (%)	45.74	47.14	-1.39
Health			
Average health[f]	4.10	4.13	-0.04
Any long-term problems[g] (%)	38.99	38.11	0.88
Sample size[h]	**740**	**677**	

Sources: Calculations from the baseline survey, the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]An average score of children's achievement in three academic subjects was computed ranging from 1 ("not very well at all") to 5 ("very well").

[c]Children with a score below 3 ("average") on any one of three academic subjects were scored as below average in any subject.

[d]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses ranged from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[e]An average score was computed (scores were computed across 7 items for 12- to 14-year-olds and across 14 items for 15- to 18-year-olds). Responses for items ranged from 1 ("never") to 4 ("5 or more times").

[f]An average score of children's general health was computed across four items. Responses ranged from 1 ("false") to 5 ("true").

[g]Parents were asked whether their children had been diagnosed with any long-term conditions or health problems that limit their participation in any activity.

[h]Sample sizes reflect the largest sample of all measures shown. However, sample sizes vary largely across the measures, ranging from 280 to 740 in the program group.

IMPACTS ON FAMILY FUNCTIONING, CHILD CARE, SCHOOL AND RESIDENTIAL CHANGES, AND FAMILY STRUCTURE

To assess the effects of SSP on children's home environments, the 36-month interview asked parents to provide information on their health and emotional well-being, and asked both parents and children to provide information on interactions with one another, on children's involvement with their biological father, and on changes in family structure. The survey also asked for information about child care, changes in where the family lived, and changes in where the children went to school, to assess how children's out-of-home environments were affected by SSP. Understanding how SSP affects these outcomes may help researchers understand the pathways by which changes in employment and income affect children.

- **For all three age groups of children, program impacts on maternal functioning and the quality of parent-child interactions were rare.**

In the 36-month interview, mothers reported on their own health, alcohol use, parenting problems, and depression, and both mothers and children reported on parenting behaviour such as warmth, negative parenting, and discipline style. In general, few impacts were found on any of these measures (data not shown). The findings suggest that SSP had little effect on parents' emotional or physical health or the quality of parent-child interactions for all three age groups of children.

- **SSP increased children's use of child care and after-school activities for the younger and middle cohorts, but not for the older cohort of children.**

Findings on child care and after-school activities are presented in Table ES.5. The 36-month follow-up interview collected information on child care arrangements for only the youngest child in the family during the 18 months prior to the 36-month interview. Therefore, results reflect impacts of the program for children in the younger, middle, and older cohorts who were also the youngest children in the family. Information on after-school activities, on the other hand, was gathered for all children in the household who were age six and older.

As would be expected, given SSP's impact on maternal employment, mothers of the younger and middle cohorts of children in the program group reported spending more money on child care than did mothers in the control group. Likewise, this group of mothers reported greater use of child care relative to mothers in the control group. For the younger cohort, SSP not only modestly increased both formal (preschool and after-school programs) and informal (baby-sitters) child care arrangements but also slightly increased the instability of such care. For children in the middle cohort, mothers in the program group reported slightly more use of informal child care and after-school activities than did mothers in the control group. The positive effects of SSP on children's outcomes for the middle cohort may have been due, in part, to these increases in after-school arrangements.

Table ES.5: SSP Summary of Intermediate Outcomes at the 36-Month Follow-Up, by Child Age

Outcome	Younger Cohort[a] Difference (Impact)	Middle Cohort[b] Difference (Impact)	Older Cohort[c] Difference (Impact)
Child care[d] and children's activities[e]			
Monthly child care expenditure ($)	18.58 **	22.59 ***	0.08
Any centre care (%)	7.90 **	1.49	
Any informal child care (%)	7.40 **	5.18 *	-1.81
Changed care 2+ times (%)	2.71 *	1.25	
Any after-school weekly activity (%)		1.53 *	-0.82
Frequency of doing household chores			0.11 *
Working (%)			0.33
Worked 20 or more hours per week (%)			6.90 **
School changes[e] and residential moves			
Any school changes		4.44 **	1.43
Two or more school changes		4.49 ***	4.56 **
Any residential moves (%)	4.38	4.54 **	2.94
Sample size[f]	**977**	**2,163**	**1,431**

Sources: Calculations from the baseline survey, the 36-month follow-up parent survey, the 36-month follow-up child survey, and the 36-month follow-up core survey.

Notes: Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Younger cohort children were ages 3–5 at the 36-month follow-up.

[b]Middle cohort children were ages 6–11 at the 36-month follow-up.

[c]Older cohort children were ages 12–18 at the 36-month follow-up.

[d]The child care participation data for all age groups are for the youngest child in the family only, and only for the previous 18 months. However, monthly child care expenditure data are for the previous month only.

[e]Measures were assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[f]Sample sizes reflect the largest sample of all measures shown. However, sample sizes vary largely across the measures, ranging from 741 to 977 for the younger cohort; to 1,217 to 2,163 for the middle cohort; and to 710 to 1,431 for the older cohort.

For the older cohort, there were no differences between the program and control groups in children's after-school activities (as reported by both parents and adolescents) or in child care arrangements. Since SSP significantly increased mothers' full-time employment, the lack of a corresponding increase in older children's care arrangements means that children in the program group were without parental supervision more often than their control group counterparts, a difference that may have led to some of the adverse effects of the program on adolescents' behaviour. On the other hand, SSP did increase children's involvement in household chores and in employment over 20 hours per week. Non-experimental research has found associations between high levels of employment and adolescent problem behaviour.[7]

[7]Mortimer et al., 1996.

- **Families in the program group were more likely to move and their children were more likely to change schools than their control group counterparts, particularly for the middle cohort of children.**

Impacts of the program on school and residential changes are presented in the bottom panel of Table ES.5. For the middle cohort of children, families in the program group were slightly more likely to move than families in the control group. In addition, children in the middle cohort were slightly more likely to change schools, primarily because of these residential moves. For the younger and older cohorts of children, on the other hand, families in the program group were not significantly more likely to move than families in the control group, and older children in the program group and the control group were equally likely to change schools. Children in the program group in the older cohort were, however, more likely than their control group peers to have experienced two or more school changes.

- **For the older cohort of children, there were significant program impacts on children's family structure, but these differed by province.**

For the younger cohort of children, no impacts on family structure were found. For the middle cohort of children, children in the program group were more likely than children in the control group to be visiting with their second biological parent, but there were no impacts on marital status or living arrangements for this middle cohort.

For the older cohort of children, SSP's impacts on family structure differed by province (see Table ES.6). This was one of the few areas in which the program's impacts on either adults or children differed by province. SSP significantly increased marriage and second-parent contact for children in New Brunswick and significantly decreased second-parent contact for children in British Columbia. Further analyses (not shown) suggest that the increases in second-parent contact in New Brunswick are occurring in situations in which the children are living with the second parent in a separate household from that of their biological mother (and not that their biological parents are moving in together). Combined with the increase in marriage among their mothers, these changes suggest increases in step-families for older children in the program group relative to the control group. In British Columbia, SSP appears to have had a very different effect, reducing father involvement for the older children in the sample. The reasons for this pattern of impacts in the two provinces are unclear, but the findings for both provinces suggest that there may have been more changes in family structure and custody of children for older children in the program group than in the control group. These family structure changes may be responsible for some of the negative effects of SSP on adolescents' substance use and minor delinquency.

Table ES.6: SSP Impacts on Family Structure for Families With Older Cohort Children at the 36-Month Follow-Up, by Province

Outcome	Program Group	Control Group	Difference (Impact)
	British Columbia		
Family structure			
Marital history of parent			
Ever married (%)	11.18	12.91	-1.73
Number of months married	1.63	2.37	-0.74
Contact with second parent[a]			
Any contact (%)	62.43	62.70	-0.27
Living with second parent (%)	5.78	11.91	-6.13 ***
Sample size[b]	345	319	
	New Brunswick		
Family structure			
Marital history of parent			
Ever married	19.53	16.50	3.03
Number of months married	3.62	2.51	1.12 *
Contact with second parent[a]			
Any contact (%)	62.77	59.57	3.20
Living with second parent (%)	11.68	5.66	6.02 ***
Sample size[b]	410	371	

Source: Calculations from the baseline survey, the 36-month core survey, and the 36-month follow-up parent survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Contact was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[b]Sample sizes reflect the largest sample of all measures shown.

IMPLICATIONS AND CONCLUSION

- **Increases in full-time employment that are accompanied by increases in income do not adversely affect young children, at least in the short term.** The findings suggest that SSP did not help or harm children who were infants and toddlers at the start of the program, even though mothers in the program group had higher levels of full-time employment and family income than mothers in the control group, and even though these children did experience modest increases in child care. While many people have expressed concern about very young children as mothers move from welfare to work, these findings suggest that a program like SSP may not affect young children's functioning.

- **A program like SSP may have positive benefits for young school-age children.** The middle cohort of children, who were 3–8 years old at random assignment and 6–11 years old at the 36-month follow-up, experienced some small benefits from SSP, particularly in their test scores and academic functioning. These increases may have

been due, at least in part, to the increases in after-school activities in which these children engaged. This finding suggests that at least for some children, the increases in employment and income due to SSP may have some positive effects on children's functioning.

- **The only children who may have been negatively affected by SSP were adolescents.** Findings for older children suggest that SSP increased adolescents' engagement in substance use and minor delinquent activity. Such findings may have been due to the decline in maternal supervision when single mothers went to work; to the increases in children's own employment; or to changes in family structure, due to SSP. Although adolescents are not typically the focus of the debate around the possible negative effects of maternal employment, these findings suggest that outcomes for adolescents should be more closely monitored as their mothers move from welfare to work.
- **A program like SSP seems to have no effect on the quality of the interactions between mothers and children, and is more likely to affect children's out-of-home environments, like child care, activities, and schools.** For all ages of children, there were very few significant impacts on mothers' health and emotional functioning or on the quality of parent-child interactions as measured here. Instead, significant impacts were found for children's participation in child care and after-school activities, and in children's school changes and residential moves. While policy-makers have raised concerns about the increased stress facing mothers as they move from welfare to work, these findings suggest that increases in full-time employment when accompanied by increases in income do not negatively affect the emotional well-being or parenting practices of single mothers.

The impacts presented in this report are small and are not prevalent across many aspects of children's functioning. Therefore, one possible interpretation is that SSP is having very little impact on children's functioning. A follow-up study of the children in this report is currently under way. Fifty-four months after random assignment, parents of the children studied in this report will be interviewed about their children's behaviour and functioning, providing information on whether the benefits to the middle cohort of children in cognitive and academic functioning lead to more positive school outcomes in later childhood, and whether the difficulties observed for adolescents foretell future problems. Along with comparisons with findings in related studies, the future report will allow for more definitive conclusions about how a program like SSP may affect children and their families. Other studies offer further opportunities for comparison. First, a companion study to the one reported here was conducted with single parents who were applicants to the IA system. Second, other experimental evaluations of programs offering financial incentives are being run in the United States and can provide further information about how programs that increase parental employment and family income among single parents affect children.

While children are an integral part of low-income families, their well-being has been relatively understudied in the move to increase the self-sufficiency of low-income, single parents. SSP is one of a small set of random assignment studies currently being conducted on the effects of welfare and employment programs on children. Together with these other

studies, SSP can dramatically increase our understanding about how programs that increase employment and income among single mothers may affect children.

Chapter 1:
Introduction

Efforts to alter the welfare system have been faced with the challenge of adequately addressing the needs of low-income families while at the same time encouraging employment. Of particular concern is how children may be influenced by welfare policies. Some policy-makers have argued that moving parents off of cash assistance will boost employment, earnings, and income, and thus benefit children. Others raise concerns that parents entering the labour force from Income Assistance (IA) may be those least prepared to combine work and parenting, and that the low-wage jobs for which they qualify will only add to the stress of balancing these roles, which in turn will result in negative impacts for their children. Unfortunately, children's well-being has been given little study in the move to increase the self-sufficiency of low-income parents.

Income Assistance can provide an important safety net, a critical source of income to parents with low levels of earnings potential. In doing so, however, it can also encourage dependence on government assistance. While many IA recipients may want to become self-sufficient, the low wages they are likely to receive and the costs of employment (such as child care, transportation, and other job-related expenses) often leave them worse off financially than when they received Income Assistance. In order to address these problems with the welfare system, Human Resources Development Canada launched the Self-Sufficiency Project (SSP) in 1992. SSP was managed by the Social Research and Demonstration Corporation (SRDC) and evaluated by staff at SRDC and the Manpower Demonstration Research Corporation (MDRC). SSP is a research and demonstration effort aimed at long-term, single-parent welfare recipients in New Brunswick and British Columbia. It was designed to make employment pay better than welfare. To this end, SSP had three major goals: (1) increase employment, (2) reduce welfare dependence, and (3) reduce poverty.

To achieve these goals, SSP offered a temporary earnings supplement to single parents who left Income Assistance for full-time employment. The program was intended for long-term IA recipients and therefore was open only to single parents who had received Income Assistance for at least one year. Program participants were offered a supplement to their earnings if they engaged in full-time (30 or more hours per week) employment. They received this supplement in addition to their earnings and could continue to receive it for up to three years, as long as they were working full time.

In the design of the evaluation of SSP, the value of examining children's outcomes in the context of an antipoverty program was also recognized. Research has suggested that poverty has detrimental effects on children, depriving them of the social and material resources they need for healthy development. Moreover, the effects of poverty on children may have long-term consequences, increasing the likelihood of the intergenerational transmission of poverty and welfare dependence.[1] Little has been known, however, about how a short-term earnings

[1]Caspi et al., 1998.

supplement would affect children. Would maternal[2] employment benefit children by increasing the regularity of family routines (like dinner time) and providing a beneficial role model for children? Or would the lack of parental monitoring and the increase in non-maternal care offset any benefits of maternal employment? Would the benefits of increased income help to overcome any negative effects of maternal employment? Examining the impact of SSP on children's well-being offered researchers the opportunity to better understand how a program aimed at parental employment and family income may affect children.

The Self-Sufficiency Project uses a rigorous random-assignment design to examine how welfare recipients and their families are affected by such a temporary earnings supplement. IA recipients were randomly assigned to a program group, to participate in the supplement program, or a control group, to receive Income Assistance as usual. Because families are assigned randomly to the program and control groups, a comparison between these two groups can provide information about the effects of this program, including its effects on children.

The SSP study focusses on approximately 6,000 single parents who were long-term IA recipients in New Brunswick and British Columbia. Previous reports on this sample have examined the implementation and short-term effects of SSP on parental employment, earnings, IA receipt, and income. A companion report on this sample examines the effects of SSP on parental employment, IA receipt, and wage growth as well as on income level, maternal hardship, and marriage, at 36 months after random assignment.[3] The present report focusses on the children of single-parent welfare recipients. Three years after participants entered the research project, data were collected on the cognitive, behavioural, and health outcomes for their children. Information was also gathered about parental functioning and behaviour, children's care and activities, school and residential changes, and family structure. The results of these assessments can provide information about how SSP may have influenced children's development and family functioning at 36 months following random assignment.

Three years after random assignment represents a point in time at which participants who took up the supplement (by finding work in the year after random assignment and leaving Income Assistance) were still eligible to receive supplement payments. Those supplement takers who went to work shortly after random assignment were nearing the end of their eligibility, while those who found work at the end of their first year after random assignment could still receive the supplement for a full year after the 36-month survey. A future report will examine how these children and families are faring after the three years of supplement eligibility has ended.

In this chapter, the SSP incentive and the design of the demonstration project are first described. Next, previous research that may inform our understanding of the way in which SSP may affect children is reviewed. The economic and policy context of New Brunswick and British Columbia are then discussed as background to an understanding of the larger context in which SSP takes place. The impact of SSP on adult economic outcomes is then

[2]Since 97 percent of the single-parent, long-term welfare recipients analyzed in this report are women, the term "maternal" and feminine pronouns are used throughout this report.

[3]Michalopoulos et al., 2000.

presented and discussed as the basis for some hypotheses about how SSP may affect children. The concluding sections focus on the research questions that will be addressed and the organization of the report.

THE SSP INCENTIVE

As has been noted, SSP offers long-term welfare recipients a financial incentive to leave welfare for work.[4] The text box on the following page provides details of this financial incentive. Briefly, SSP offers a supplement to earnings, in the form of a monthly cash payment to people who have left Income Assistance and worked full time (30 or more hours per week). The restriction to full-time work is designed to limit the extent to which participants receive the supplement without increasing or maintaining their work effort.[5] Eligibility for SSP is limited to single parents who have been on Income Assistance for at least a year. This restriction targets SSP benefits to a disadvantaged population that normally experiences difficulty in the labour market. In addition, the SSP supplement varies with individual earnings, rather than family income, and is therefore unaffected by family composition, other family members' earnings, or unearned income.[6] Finally, supplement payments are available for a maximum of three years, and only to sample members who initiate SSP payments within 12 months of their initial eligibility.

Understanding the structure of SSP's incentive is crucial to understanding the effects of the supplement offer. In brief, SSP's financial supplement paid parents who worked 30 or more hours per week half the difference between their actual earnings and a target level of earnings. The target earnings were set at $30,000 in New Brunswick and $37,000 in British Columbia, although they have been adjusted slightly over time to reflect changes in the cost of living and in the generosity of Income Assistance. Therefore, for example, a participant in British Columbia who works 35 hours per week at $7 per hour earns $12,740 per year and collects an earnings supplement of $12,130 per year ($37,000 minus $12,740, divided by 2), for a total gross income of $24,870. In comparison, if that mother had decided not to work and instead to receive Income Assistance, she would have had an annual income of only $17,111. Of course, some control group parents may choose to combine work and Income Assistance. When tax obligations and tax credits are taken into account, most families have incomes $3,000 to $7,000 per year higher with the earnings supplement program than if they had worked the same number of hours and remained on Income Assistance.

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[4]The description here is of the main SSP study, or the SSP recipient study. There are two sub-studies within SSP: the SSP Plus study and the SSP applicant study. In the SSP Plus study, extensive job-search assistance was provided in addition to the earnings supplement. In the SSP applicant study, single parents starting a *new* IA claim, rather than long-term welfare recipients, were randomly assigned. Reports on these studies provide an understanding of how variation in the program affects the economic outcomes of single parents (see Michalopoulos, Robins, and Card, 1999, and Quets et al., 1999, for more detail on these studies).

[5]Program group members could not qualify for the earnings supplement with jobs that were 100 percent government-subsidized. Positions that were partially subsidized by the federal government or the province of New Brunswick, however, were permitted.

[6]Thus, the SSP supplement formula does not penalize single parents who receive child support, marry, or find a partner. Because benefits from SSP do not increase with family size, however, SSP is relatively less generous than Income Assistance for larger families.

Key Features of the SSP Program

- **Full-time work requirement**. Supplement payments are made only to eligible single parents who work full time (an average of at least 30 hours per week over a four-week or monthly accounting period, whether in one or more jobs) and who leave Income Assistance.

- **Substantial financial incentive**. The supplement is calculated as half the difference between a participant's earnings from employment and an "earnings benchmark" set by SSP for each province. The benchmark was set at a level that would make full-time work pay better than Income Assistance for most recipients. The supplement is reduced by 50 cents for every dollar of increased earnings. Unearned income (such as child support), earnings of other family members, and number of children do not affect the amount of the supplement. The supplement roughly doubles the earnings of many low-wage workers (before taxes and work-related expenses).

- **Targeted at long-term recipients**. Eligibility for the supplement is limited to long-term welfare recipients (with at least one year of IA receipt). Since people were chosen for the recipient study only if they met this criterion, all members of the program group were eligible for the supplement when they entered the study.

- **One year to take advantage of the offer**. A person could sign up for the supplement if she found full-time work within one year after random assignment. If she did not sign up during that year, she could never receive the supplement.

- **Three-year time limit on supplement receipt**. A person could collect the supplement for up to three calendar years from the time she began receiving it, as long as she was working full time and not receiving Income Assistance.

- **Voluntary alternative to welfare**. People cannot receive IA payments while receiving the supplement. No one is required to participate in the supplement program, however. After beginning supplement receipt, a person may decide at any time to return to Income Assistance, as long as she gives up supplement receipt and meets the eligibility requirements for Income Assistance. She can also renew her supplement receipt by going back to work full time at any point during the three-year period in which she is eligible to receive the supplement.

THE SSP RESEARCH DESIGN

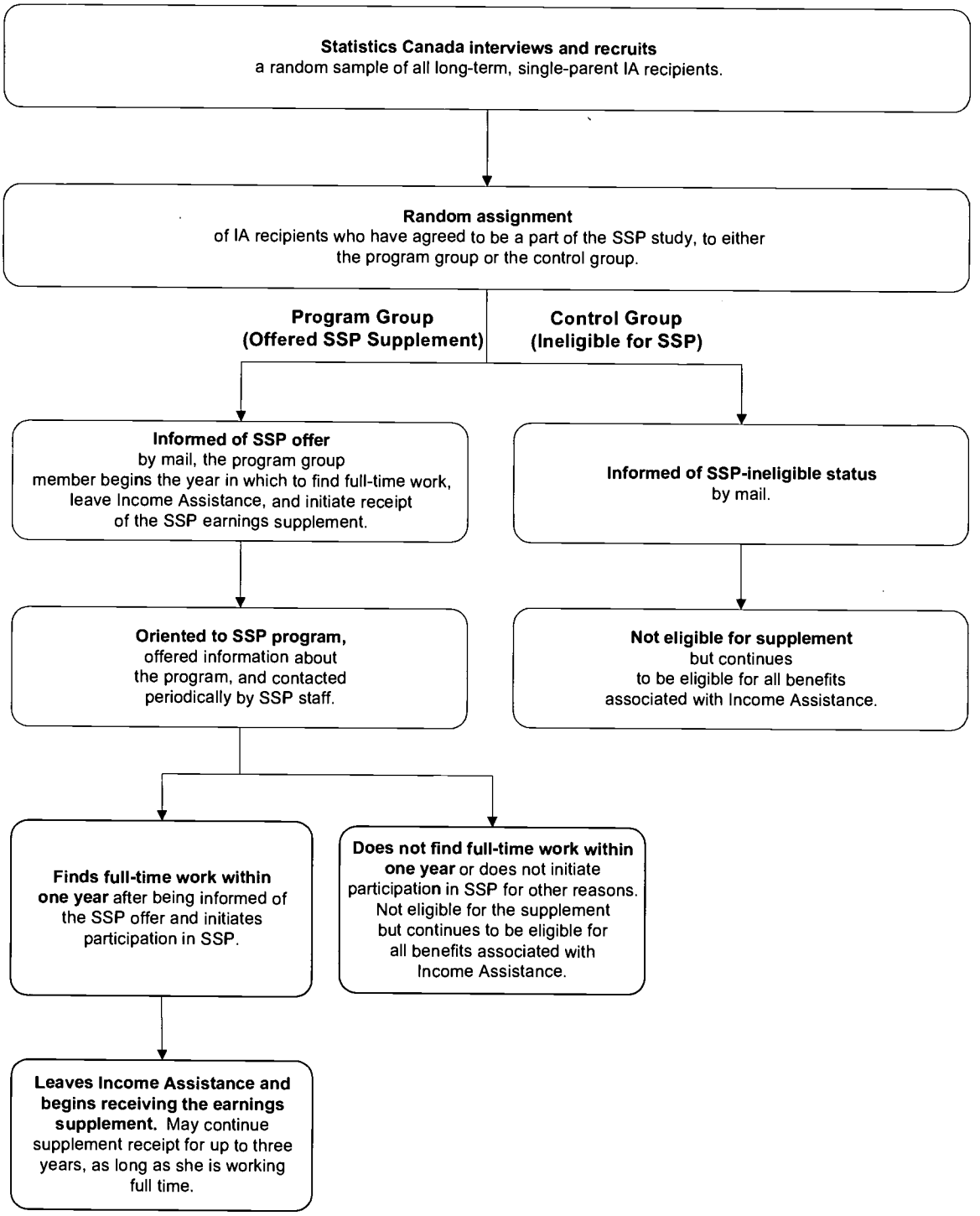
The goal of the evaluation of SSP is to understand the *difference* that SSP's financial incentives make in the employment, earnings, income, and welfare receipt of eligible single parents and in the well-being of families and children, above and beyond the incentives and services available to families who were not eligible for SSP. To determine the effects of the supplement offer, SSP assigned parents to two research groups. A *program group* received SSP's supplement offer; a *control group* did not. Outcomes for members of the two groups are then compared. To make sure that differences between the groups reflect the effects of SSP's policies, welfare recipients recruited for participation in the study were assigned to program and control groups *at random* — that is, without regard to their preferences or personal characteristics.

The advantage of the random assignment design is that it allows researchers to reliably determine the effect of SSP on children and families. One cannot simply follow children in families who were offered the supplement and measure their academic or behavioural functioning, because children's abilities are likely to increase over time even in the absence of the program. The random assignment design makes it possible to compare the program and control groups and therefore to determine the *difference* (or *impact)* SSP made in the lives of families. This impact provides a reliable measure of the effect of SSP.

The random assignment of SSP study participants took place between November 1992 and March 1995. To be eligible for the study, an IA recipient had to be a single parent at least 19 years old who had received welfare in the current month and in at least 11 of the prior 12 months. A random subset of eligible IA recipients were contacted to participate in the study. After the baseline interview, study participants were randomly assigned to one of two groups. Of the recipients who were randomly selected and agreed to be part of the study, 2,880 were offered the earnings supplement. They are members of the *program group.* An additional 2,849 were recruited for the study but not offered the supplement. They are members of the *control group.*[7] Figure 1.1 gives an overview of the recruitment into the study, the random assignment process, and the steps leading to receipt of the SSP supplement.

[7]An additional 299 sample members who entered the study between November 1994 and March 1995 were randomly assigned to a third group that received the SSP Plus program described in greater detail in Quets et al., 1999.

Figure 1.1: An Overview of SSP Sample Intake and Program Participation

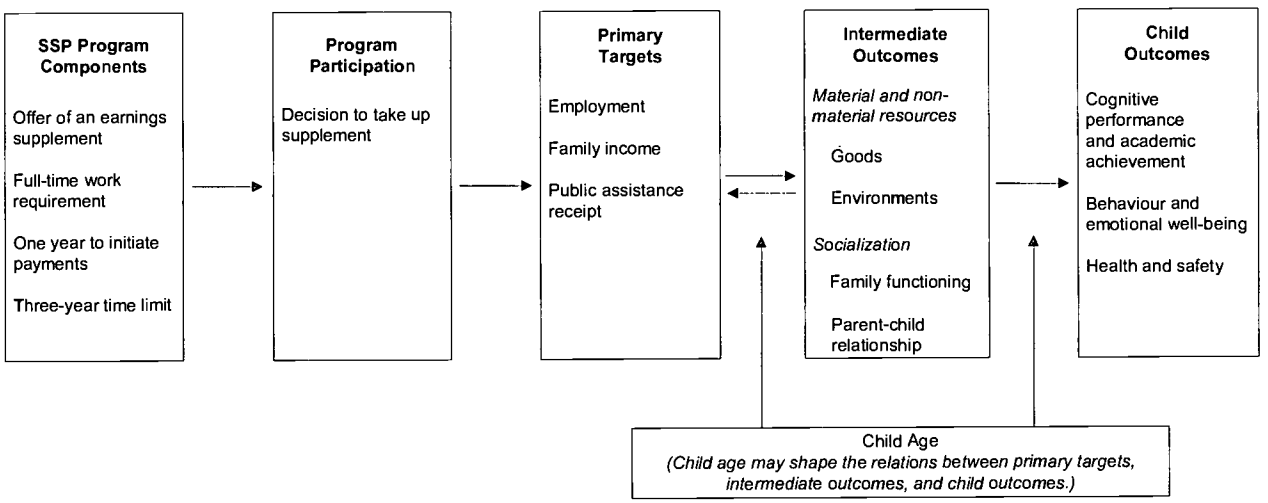


Note: Both program and control group members receive all regular benefits associated with Income Assistance if they continue to qualify for Income Assistance. Both groups also have access to existing community services and resources not funded by SSP.

HOW MIGHT SSP AFFECT CHILDREN?

Figure 1.2 offers a conceptual model of the pathways by which SSP may affect children. The SSP program with its four components — the offer of a supplement, the full-time work requirement, the one year to initiate payments, and the three-year time limit — is made available to participants in the program group. These participants may respond to this supplement offer by deciding to take up the SSP supplement.[8] By encouraging parents to find full-time work and take up the supplement, SSP affects its primary targets: employment, public assistance, and family income. It is through changes in these targets that SSP is most likely to affect children.[9] The pathways by which changes in these targets translate into changes in children's outcomes is shown by the box labelled "intermediate outcomes." Intermediate program outcomes include the changes children experience in their lives as a result of the changes in parental employment and family income.

Figure 1.2: Conceptual Model of the Effects of SSP on Child Outcomes



Note: Program components may influence intermediate and child outcomes directly without influencing the primary targets of the program (see Footnote 8).

Theories developed from sociology, psychology, and economics suggest that there are two main pathways by which children may be affected by welfare and employment programs. The first pathway, a *resource path,* emphasizes the notion that employment and income can affect the resources that families can provide for their children, which in turn can influence children's development. These resources include both material resources (that is, goods such as food or books) and nonmaterial resources (such as social interactions with others,

[8]Such a decision may be based on the availability of full-time work, participants' skills, the barriers to employment they face, and their motivation to work.

[9]It is important to note that SSP may also affect children without affecting these direct targets of the program. For example, if the work-oriented message in SSP increases the pressure on IA recipients to engage in employment, then SSP might increase parental stress. Such stress might affect children's functioning through changes in parenting behaviour. In this way, the message of SSP could potentially affect children even without changing parental employment or family income. The New Chance evaluation is a good example of a program that affected children and parental functioning, with limited effects on the targets of the intervention (Quint, Bos, and Polit, 1997). Because the most likely pathways by which SSP will affect children is through its impact on the direct targets of the program (employment and income), however, these pathways are the focus of the discussion.

including teachers and peers) that parents provide for their children. Parents can provide these resources by purchasing items for their children and by putting their children into different environments (for example, child care and schools). In this way, children are thought to benefit from parents' increased income because the increased income allows parents to invest more in their children's development. The second pathway, the *socialization path*, emphasizes the importance of role models, family functioning, and parenting practices to children's well-being. For example, increased income is expected to reduce parental stress that, through changes in the parent-child relationship, may influence children's development. Both of these pathways are depicted in the conceptual model under "intermediate outcomes." Note that in some instances, a single process may affect children through both the resource and the socialization paths. For example, increases in child care may affect children by increasing children's interactions with teachers (the resources pathway) and reducing parental stress (the socialization pathway).

These intermediate outcomes can affect child outcomes directly, but they may also feed back and influence the direct targets of the intervention. Child care, for example, may not only influence children's development but also help mothers maintain full-time employment. Similarly, changes in maternal self-esteem may not only affect children through changes in parenting but may also give parents the psychological resources to stay employed. This report focusses on the way in which the intermediate outcomes affect children's functioning directly, but it is important to keep in mind that the pathway by which SSP may affect children may not be as simple as the direct pathway from employment and income through changes in resources and socialization patterns to children's outcomes.

Three domains of children's functioning may be influenced by these processes: (1) cognitive performance and academic achievement, which include how children are performing in school and their language, math, and other cognitive skills; (2) behaviour, which includes children's positive social behaviour and problem behaviours; and (3) health, safety, and emotional adjustment, which include both general health and long-term health problems, accidents and injuries, and depression.

Thus, the extent to which children are influenced by SSP will depend not only on the extent to which the direct targets of the intervention — maternal employment and family income — are influenced by the program but also on the extent to which these targets matter for children's well-being, translating into changes in children's home and school environments in ways that may affect children. Analysis of the impacts of SSP on employment and income suggests that SSP does increase employment, particularly full-time employment, and earnings. These greater earnings, combined with generous supplement payments provided by SSP, more than offset reductions in Income Assistance, resulting in greater family income for program group members when compared with their control group counterparts.

Non-Experimental Research

Given these impacts of SSP on economic outcomes, how might we expect SSP to affect children? Non-experimental research in psychology and sociology allows us to develop some hypotheses about the potential effects of SSP on children. Non-experimental studies discussed here include research that examines the relationship between maternal employment or family income and children's outcomes, but not in the context of a program–control group

design. Experimental studies, on the other hand, include research studies like SSP, in which families in a program group are compared with families in a comparison group. As discussed in greater detail later, more definitive causal conclusions can be drawn from experimental studies. However, there is a wealth of non-experimental research on the relationship between maternal employment or family income and children's outcomes that can inform the hypotheses developed in the present study.

Maternal Employment

Research on maternal employment has focussed primarily on the question of whether the mother's employment negatively affects children's development. Because mothers are often regarded as the primary caregivers of their children, there was concern that maternal absence due to employment might place children's development at risk. In general, maternal employment has been found to have neutral effects. The only exception to this finding may be early maternal employment (in the child's first year of life), and for boys, in which negative consequences have been found in some studies.[10] For low-income children and for children of single mothers, however, studies have found that maternal employment is associated with more positive outcomes for children.[11]

While maternal employment seems to benefit low-income children, more recent research suggests several conditions that may alter the effect of maternal employment on children. First, a high number of hours of employment early in a child's life may be associated with negative cognitive and achievement outcomes for children.[12] Second, studies have suggested that maternal employment is associated with positive child outcomes only when women want to work.[13] Finally, the nature of the work and the wage it pays may matter for child well-being, as research suggests that high-level, complex jobs may have positive outcomes for children, while lower levels of employment may translate into negative outcomes.[14] These studies raise the question of whether moving mothers into full-time, low-wage service employment will have positive effects on children.

One pathway by which maternal employment may affect children is through child care. As mothers spend increasing amounts of time away from home, non-maternal care becomes an important influence on children's development. For young children, compensatory education programs have been found to benefit low-income preschool children in many studies, at least in the short term.[15] The quality of child care available to the poor varies tremendously, however, with more than half the programs serving low-income children failing to meet recommended criteria for day care quality.[16] For older children, emerging research suggests that formal after-school activities are associated with positive outcomes for low-income children and children living in unsafe environments.[17] It is believed that these

[10]Baydar and Brooks-Gunn, 1991, Belsky and Rovine, 1988, and Bronfenbrenner and Crouter, 1982.
[11]Harvey, 1999, Moore and Driscoll, 1997, Vandell and Ramanan, 1992, and Zaslow and Emig, 1997.
[12]Harvey, 1999.
[13]Alvarez, 1985, and Farel, 1980.
[14]Parcel and Menaghan, 1994, 1997.
[15]Lazar and Darlington, 1982, Lee, Brooks-Gunn, and Shnur, 1988, and McKey et al., 1985.
[16]Phillips et al., 1994.
[17]Pettit et al., 1999, and Posner and Vandell, 1994, 1999.

activities help children by providing a stimulating, academically focussed environment, as well as protection against a deviant peer group.

The child's age may moderate, or shape, the effects of maternal employment on children. As has been indicated, there is some suggestion that employment in the first year of a child's life may be associated with more negative child outcomes.[18] Recent research has suggested that high levels of maternal employment may negatively affect children's outcomes for young, but not for older, children.[19] Younger children may be more negatively affected by maternal employment because they are more sensitive to maternal separations. Spending long hours in non-maternal care may be associated with negative behavioural outcomes for young children,[20] but high quality care may help to deter some of these negative outcomes.[21]

While most research has focussed on differences between preschool and school-age children, there is also some suggestion that adolescent children and their younger school-age peers may be differentially affected by maternal employment. While children 12 years of age and older can care for themselves, their younger school-age peers require care in the afternoon hours after school if mothers are working full time. After-school arrangements have been found to be associated with positive outcomes for both pre-adolescent and adolescent children, keeping them in structured care and away from peers.[22] Adolescents may have difficulties if left alone after school and into the evening hours as mothers take on off-hours and shift work. Also, adolescent children may be asked to take on greater household responsibilities and may be encouraged to engage in employment themselves when their single mothers move into employment. While there is limited research on the effects of household chores on children, a high level of employment during adolescence (particularly more than 20 hours of employment) has been linked with children's difficulties in school and increased drug and alcohol use.[23]

Family Income

In addition to increasing employment, SSP was intended to increase family income, with the long-term goal of moving families out of poverty. Research suggests that poverty can negatively affect children's functioning, especially if it occurs in the early childhood years and is persistent.[24] The research to date suggests that the negative influence of poverty is more concentrated in children's achievement and academic functioning, as compared with children's behaviour and health outcomes.[25] Therefore, as an antipoverty program, SSP may exert its strongest influence on children's achievement test scores and school functioning, and only secondarily affect the domains of children's behaviour problems and health. Research suggests that both the resource and the socialization pathways may play a role in the association between family income and children's development, as poverty is associated with

[18]Baydar and Brooks-Gunn, 1991.
[19]Harvey, 1999.
[20]Currie and Thomas, 1995, Lamb, 1998, and McLoyd, 1998.
[21]See Lamb, 1998, for a review.
[22]Pettit et al., 1999, and Posner and Vandell, 1994, 1999.
[23]Mortimer et al., 1996, and Steinberg and Dornbusch, 1991.
[24]Duncan and Brooks-Gunn, 1997, and Duncan, Brooks-Gunn, and Klebanov, 1994.
[25]Duncan and Brooks-Gunn, 1997.

fewer learning materials in the home, and greater parental stress and more insensitive parenting practices.[26]

As it did with maternal employment, child age has been found to make a difference in how family income affects child outcomes. Research has found that the associations between poverty and child outcomes are stronger for preschool than for early-school-age or older children. A longitudinal analysis has suggested that early childhood poverty (when the child is age 0–5) is associated with children's completion of schooling in adolescence, but that poverty from age 6 to 15 is not.[27] This finding suggests that increasing income during the preschool years may be more important for children's outcomes than increasing income in adolescence.

Maternal Employment and Income in Experimental Research

Examining the effects of maternal employment and income in the context of a random assignment experiment like SSP offers several advantages over the non-experimental work just discussed. Poor and non-poor families and working and non-working families likely differ in many ways in addition to their income and employment status. For example, mothers who work typically have more job skills and higher self-esteem than mothers who do not. Therefore, children of employed mothers may perform better in school either because of the mothers' employment *or* because of the mothers' higher emotional well-being and employment skills. Unfortunately, it is very difficult in the studies reviewed to determine whether the positive effects of employment and income are simply a result of these unmeasured differences between families. In the case of SSP, however, because the random assignment design ensures that program and control groups do not differ at the start of the study, any changes in children's functioning can be directly attributed to the program and not to any unmeasured characteristic. Since SSP has been shown to increase maternal employment and family income,[28] any differences in children's outcomes between the program and the control groups are likely to be related to these primary targets of the program.

Other experimental studies that can inform an understanding of the effects of poverty and maternal employment on children are very rare. One early example is the Negative Income Tax (NIT) experiment conducted in four cities from 1968 to 1982.[29] The NIT targeted working poor families and was designed to examine the labour force participation response to a guaranteed level of family income. Although the NIT maintained or increased income level, it also decreased work effort. In addition, some evidence suggests that the NIT improved measures of child nutrition, early school achievement, and high school completion, at least in some sites.[30] The New Hope evaluation is a more recent study of the effects of financial incentives on working poor families.[31] In this program, low-income families were offered an earnings supplement, child care assistance, and health insurance if they engaged in full-time employment. On the basis of teacher but not maternal reports of children's functioning, boys

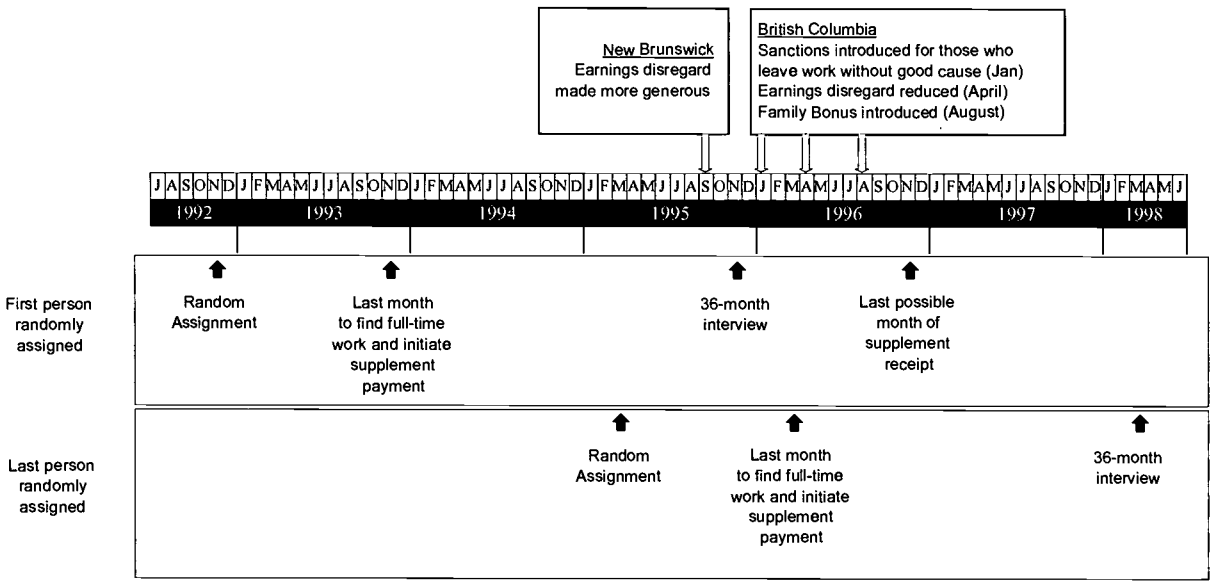
[26]Bradley and Caldwell, 1984, McLoyd et al., 1994, Smith, Brooks-Gunn, and Klebanov, 1997, and Sugland et al., 1995.
[27]Duncan and Brooks-Gunn, 1997.
[28]Lin et al., 1998.
[29]Munnell, 1986, and Office of Income Security Policy, 1983.
[30]Mallar and Maynard, 1981, and Salkind and Haskins, 1982.
[31]Bos et al., 1999.

in the New Hope program were found to be performing better academically and behaviourally in school than comparable children in the control group. While neither of these studies was directed at long-term welfare recipients, they do suggest that a program like SSP may affect children's functioning.

ECONOMIC AND POLICY CONTEXT

SSP is embedded in a larger context that includes the labour market conditions and policy context in the two provinces (British Columbia and New Brunswick) in which SSP took place. This context may affect the employment patterns of both the program and the control groups and therefore may influence the effect of SSP. In British Columbia, SSP operated in the lower mainland, which includes the Vancouver metropolitan area as well as neighbouring areas to the north, south, and east. In New Brunswick, the program operated in a region covering roughly the lower third of the province, including the cities of Saint John, Moncton, and Fredericton. Figure 1.3 provides an indication of the timing of key events in the SSP study and in Canadian and provincial welfare policy. As is shown in the figure, sample members were recruited for the study and randomly assigned between November 1992 and March 1995.[32] The period studied in this report consists of the first 36 months after each sample member was randomly assigned (including the month of random assignment). For example, for the earliest sample members randomly assigned, the period studied is November 1992 to October 1995; for those who were randomly assigned last, the period studied is March 1995 to February 1998.

Figure 1.3: Periods Covered by the Data Used in This Report and Important Policy Changes in British Columbia and New Brunswick



[32]These are the dates for which random assignment occurred in New Brunswick. In British Columbia, random assignment occurred over a shorter time, between January 1993 and February 1995.

Income Assistance

During the years since the project was initiated, major reforms have altered the landscape of social policy in Canada. In 1996, the Canada Assistance Plan (CAP, the federal program that paid a certain percentage of the expenditures incurred by provinces for Income Assistance and social services)[33] and the Established Programs Financing (EPF, a block grant for health and post-secondary education) were abolished and replaced by a block fund called the Canada Health and Social Transfer (CHST). The federal government's contributions under CHST have been substantially lower than they would have been under CAP. Faced with cutbacks in federal support, provinces have made a variety of changes such as reducing welfare benefit levels, tightening eligibility requirements, and imposing work requirements on welfare recipients.[34]

Since SSP began, both provinces have changed the financial work incentives of their IA systems by changing the "earnings disregard," a policy that determines how much a person can earn while receiving Income Assistance. In New Brunswick, the earnings disregard was increased starting in September 1995. In other words, the amount of income that could be obtained by combining work and welfare was increased, and SSP's supplement offer became relatively less generous in comparison with Income Assistance.[35] In British Columbia, the opposite change occurred, and the earnings disregard was made less generous. As a result, the amount of income that one could obtain by combining work and welfare was reduced in British Columbia, and SSP provided a greater financial work incentive than the IA system.[36]

British Columbia made a number of other changes to its IA system in 1995 and 1996. In January 1996, sanctions were introduced in British Columbia that prohibited anyone who quit a job without just cause from receiving Income Assistance for six months. Thus, program group members who found full-time jobs and initiated supplement payments might not be allowed to return to Income Assistance if they voluntarily left those jobs (contrary to the original design of SSP). Later in 1996, the process of applying for Income Assistance was made far more stringent — for example, by requiring applicants to make advance appointments, requiring applicants to bring various documents to their appointments, and eliminating the issuance of on-the-spot checks. These changes would be expected to reinforce the effects of sanctions, potentially decreasing receipt of Income Assistance by supplement

[33]CAP paid for half of these expenditures until 1990, when payments were limited to yearly increases of no more than five percent for the three wealthiest provinces: Ontario, Alberta, and British Columbia. This was referred to as the "cap on CAP."

[34]Battle, 1997, estimates that in 1997–98, federal expenditures for CHST were 15.2 percent lower than they would have been for the same year under the previous CAP and EPF programs. Under CHST, the provinces have greater latitude to change welfare eligibility rules. CHST removed two of CAP's conditions for federal support: that Income Assistance be provided to anyone determined to be "in need" and that people applying for or receiving assistance have access to an appeals system.

[35]Prior to September 1995, Income Assistance was not reduced if earnings were less than $200 in a month, but benefits were reduced dollar-for-dollar by earnings above $200. After September 1995, an enhanced disregard reduced payment amounts by only 35 cents for each dollar of earnings above the $200 fixed disregard for up to six months, and by 30 cents for each dollar of earnings for up to another six months.

[36]Until April 1996, single parents who had received Income Assistance for more than three months in British Columbia were eligible for both a "flat rate" disregard of $200 per month and, for up to 12 out of every 36 months, an "enhanced" disregard equal to 25 percent of earnings in excess of the flat rate disregard. Starting in April 1996, the flat rate disregard was eliminated and the 25 percent disregard could be used only for 12 months once in a lifetime.

takers who quit (or lost) full-time jobs and consequently increasing the program's impacts on IA receipt.[37]

In August 1996, British Columbia introduced a monthly "Family Bonus" of $103 per child for all low-income families with children and simultaneously reduced IA rates by the same amount. This step increased income for working poor families while leaving income for IA recipients unchanged. As a result, Family Bonus payments reduced the relative generosity of Income Assistance, lowering the incentive for both program and control group members to remain on Income Assistance.[38]

Economic Conditions

Over the time covered in this report, economic conditions also changed in British Columbia and New Brunswick.[39] In both provinces, overall labour market conditions improved slightly from 1992 to 1995. Nonetheless, unemployment rates remained at historically high levels, and employment of 15- to 44-year-old women actually declined in British Columbia. From 1995 to 1998, unemployment increased somewhat in New Brunswick and remained stable in British Columbia, even though the unemployment rate nationally continued to fall. The job prospects for women might have improved during this period, however, as the employment rate of 15- to 44-year-old women increased in both provinces. Throughout this period, New Brunswick has had a higher unemployment rate and lower average wage than British Columbia.

Since 1992, the minimum wage in both provinces has been increased on several occasions, although it is lower in New Brunswick than in British Columbia. When SSP was begun in 1992, the minimum hourly wage was $5.50 in British Columbia and $5.00 in New Brunswick. In British Columbia, the minimum wage increased gradually to $7.15 in 1998. In New Brunswick, the minimum wage increased to $5.25 at the beginning of 1996 and to $5.50 later in 1996. It is unclear how these changes in the minimum wage might affect the impacts of SSP.

SUMMARY OF IMPACTS OF SSP ON ADULT ECONOMIC OUTCOMES

The goal of SSP was to encourage long-term single-parent welfare recipients to work full time and thereby to increase their earnings and reduce their dependence on welfare. By replacing welfare benefits with the program's supplement to earnings, SSP also ensures that parents in the program group who work full time and take up the supplement have a higher income under SSP than they would under Income Assistance. During the first three years after random assignment, SSP was remarkably successful in its goals of increasing

[37] British Columbia and New Brunswick made a number of other changes to their IA systems in 1995, 1996, and 1997, but many of these changes had little effect on most single-parent recipients. These changes are described in Lin et al., 1998.

[38] In October of 1997, New Brunswick also changed the financial incentives to work through its Child Tax Benefit and New Brunswick Working Income Supplement. The incentives under these programs were considerably less than the incentives of the Family Bonus — up to $250 per child per year from the Child Tax Benefit and $250 per year per family from the Working Income Supplement.

[39] Additional information for the period from 1992 through 1996 is presented in Table 1.1 of Lin et al., 1998.

employment, reducing Income Assistance, and increasing family income. A summary of the primary findings on adult economic outcomes at the 36-month follow-up is presented here.[40]

In all, more than one-third of the program group found full-time employment during the year after random assignment and received at least one supplement payment. This is an *outcome* resulting from several factors such as program group members' willingness to work full time, the opportunities available to them in the local labour markets, and the extent to which the supplement offer changed their behaviour. To measure the *impacts* of SSP — the changes it produced — it is necessary to compare outcomes for the program group with a benchmark that represents what would have occurred in the absence of the program. The control group produced by the random assignment process provides such a benchmark. At the end of the first year after random assignment, while about 15 percent of the control group members were working full time, about 30 percent of the program group members were doing so. Thus, SSP had approximately doubled full-time employment, with an impact of approximately 15 percentage points. By the end of the third year, the program's impact on full-time employment had declined but was still substantial at almost 10 percentage points. Because people who took up the supplement offer had to find full-time work *and* leave Income Assistance, the program's impact on full-time employment was almost exactly mirrored by a decrease in use of Income Assistance.

When program group members went to work full time because of SSP, they also received SSP supplement payments, which produced much higher income on average for the program group than for the control group. In the six months prior to the 18-month interview, monthly after-tax income was $179 higher on average for the program group than for the control group. For the six months prior to the 36-month interview, the program continued to have an impact on after-tax income, although the impact had fallen to $153 per month. As a result, the proportion of families with low income was also reduced by the program, by 12.2 percentage points at the 18-month survey and by 9.4 percentage points at the 36-month survey.

These full-time employment and income gains are substantial and might imply that children's lives are being influenced in important ways by the SSP program. Yet caution is in order in predicting the effects of SSP on children. While the full-time employment effects are large relative to other experimental evaluations, the fact remains that only 15 percent more of the program group than of the control group engaged in full-time employment at the program's peak. Also, the income increases are confined to the 35 percent of families who ever took up the SSP supplement. Therefore, any differences in children's outcomes are likely to be confined to only one-third of the sample. Ideally, this one-third of families in the program group should be compared with a comparable group in the control group. It is very difficult, however, to determine who these comparable families in the control group might be. Therefore, program–control group differences are compared across all children in the two groups. The improvements in children's functioning for the one-third of families who took up the supplement will have to be very large to find any effects of SSP when comparing all children in the program group with all children in the control group.

[40] A more detailed discussion of the impacts of SSP on adult economic outcomes is provided in Michalopoulos et al., 2000.

RESEARCH QUESTIONS

Increasingly, research has examined the ways in which welfare programs may influence employment, earnings, and welfare receipt of single parents, yet comparatively little is known about the effects on children of these same policies. In this report examining how children's functioning and development may be influenced by the temporary earnings supplement provided under SSP, the following questions are addressed:

- Does SSP affect children's development and functioning? In particular, the program's possible effects on three distinct domains of children's functioning are examined: (1) cognitive performance and academic achievement, (2) behaviour and emotional well-being, and (3) health and safety. Does the supplement affect all these domains of child functioning equally?
- Does the supplement affect all children in the same way? Three age cohorts of children are examined in turn: younger, middle, and older children. Are these three age groups of children similarly affected by the SSP program?
- How do the effects of SSP on parents' economic outcomes vary among the parents of the children in this sample? Are there differences in the economic effects of the program that depend on the child's age?
- Does the supplement affect the resources parents provide for their children, including activities, schools, and neighbourhoods? Does the supplement affect parental functioning and the parenting that children experience? Are the impacts of SSP on these outcomes similar for all ages of children?

In addressing these questions, this study contributes to an understanding of the effects of maternal employment and family income on children. As was indicated earlier in the chapter, the non-experimental research may not adequately address the relationship between poverty or maternal employment and children's functioning, because important variables that confound these relationships may be omitted. By examining the effects of increases in parental employment and income on children in an experimental framework, SSP can shed considerable light on these relations. More specifically, while these relations will not be examined directly, this study does provide information relevant to several critical policy questions, such as:

- What is the effect on children of moving parents from welfare to full-time employment, when that employment is accompanied by a large increase in family income?
- Are these effects of full-time employment and increases in income different for children of different ages? One might expect that younger children are more negatively influenced by full-time maternal employment than are older children.
- *How* do such increases in employment and income affect children? That is, are children affected by the child care their parents provide because of the program or by changes in parenting behaviour, or through both of these pathways?

ORGANIZATION OF THE REPORT

This report examines SSP's impacts on both families and children at 36 months following random assignment. It thus allows for a broader understanding of the impact of SSP, beyond its intended targets of employment and income.

The second chapter is divided into three parts. In the first section, the sample and methods are described. Because of research that suggests that employment and income may affect children differently depending on their age, three age cohorts of children are identified for analysis, and differences in baseline characteristics across these three age groups are discussed. In the second section, the information used to assess the effects of SSP on families and children is described. In the third section, the impacts of SSP on the direct targets of the program (employment, earnings, income, and Income Assistance) for the sample analyzed in this report are presented. The impacts on economic outcomes are presented for the three age cohorts identified in the first section.

The third chapter examines SSP's impacts on children's outcomes. This chapter focusses on how SSP affects the three domains of child functioning — academic outcomes, behaviour, and health. Also, since age may play a role in the impact of SSP on children, the effects of SSP are examined separately for younger, middle, and older cohorts of children.

The fourth chapter explores the impacts of SSP on family functioning, child care, and changes in children's home and school environments. This material provides information on how SSP affects aspects of family life in addition to children's outcomes. Understanding how families' and children's activities are influenced by SSP can also suggest the pathways by which children may have been affected by the program. Differences between program and control groups in children's child care and after-school activities, as well as in parental functioning and parenting behaviour, are presented. In addition, impacts of SSP on changes in family structure, schools, and residences are explored. Again, these findings are presented for the three age cohorts of children separately.

Chapter 2:
Research Methods of the Child Report and Impacts on Adult Economic Outcomes

This chapter provides the background information necessary for understanding the impacts on child outcomes presented in Chapter 3. The first section describes the sample for the study and the data sources used in this report. Response rates for these data sources are presented and discussed in terms of their effect on the impact estimates reported. The baseline characteristics of the sample are presented, first for the entire report sample and then for three age cohorts of children to be analyzed. The second section describes the statistical methods used in analysing the research data.

In the final section, the impacts of SSP on adult economic outcomes for this report sample are summarized. These include the impacts on parental employment, income, expenditures, and material hardship. These findings provide a context for understanding how SSP may affect children.

RESEARCH METHODS OF THE CHILD REPORT

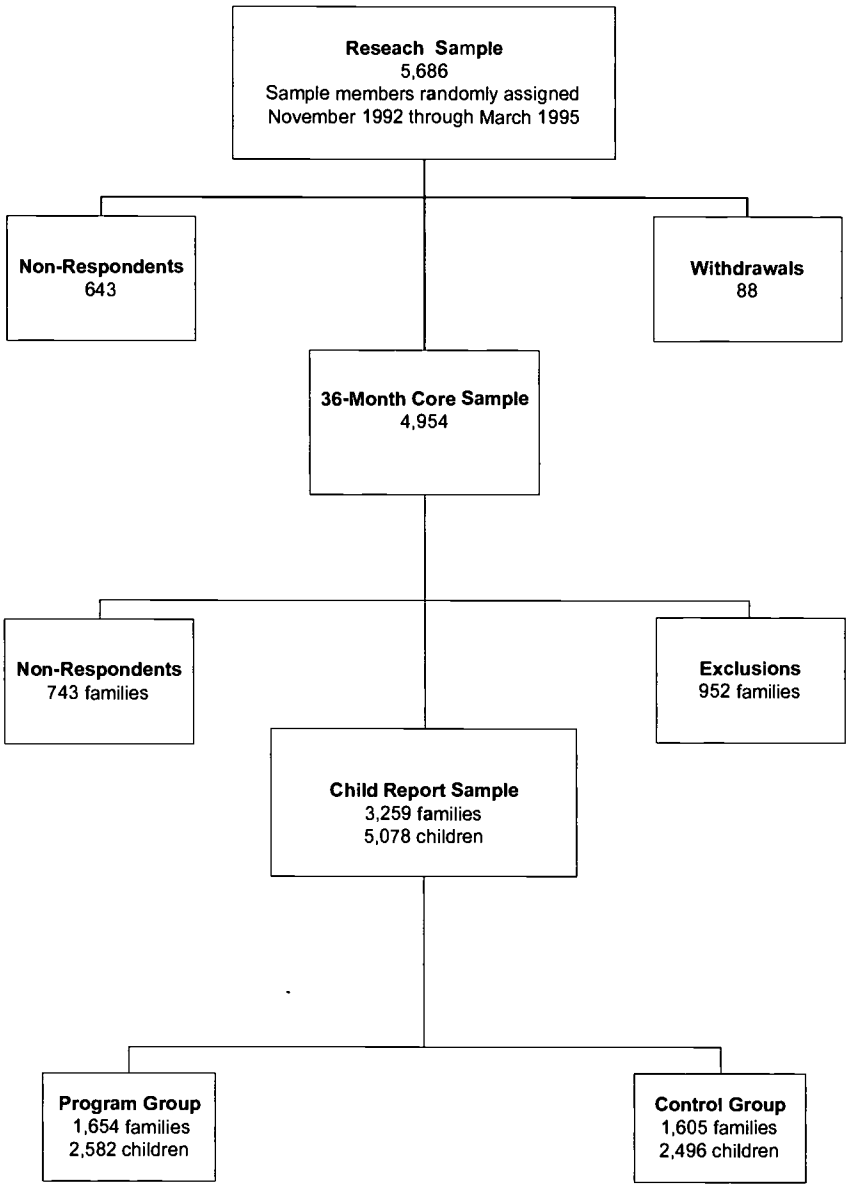
Report Sample and Age Cohorts

Figure 2.1 provides an overview of the derivation of the final analysis sample examined in this report. The *baseline sample* of the main SSP study consists of 5,686 families (2,859 program group members and 2,827 control group members) who completed a baseline interview. (This sample excludes a small number of families who were found to be ineligible for the study after random assignment, or who withdrew from the study soon after intake and requested that none of their data be used in the research.) The sample analyzed to examine the impact of SSP on maternal employment and family income, the *36-month core sample*, includes 4,961 sample members who completed surveys with questions on their employment, income, and earnings. The sample analyzed in this report, the *report sample*, consists of 3,259 families and 5,078 children (ages 3–18) who were in the home at baseline and for whom data on children were collected at the 36-month follow-up.[1] This sample included 1,654 families and 2,582 children in the program group and 1,605 families and 2,496 children in the control group. These families are a subset of the families in the 36-month sample for two reasons. First, some families in the 36-month sample were not eligible for the child study, because none of their children was in the home at the 36-month follow-up (either they were over 18 years of age or they had moved out before the 36-month follow-up) or because the only children who were in the family were those who had not been in the home at

[1] It should be noted that data were collected on children who were not in the home at baseline but who were there at the 36-month follow-up. These children were excluded from the analysis sample, since those in the program group had not received the full "treatment."

baseline.[2] Second, some sample members who were eligible to participate in the child study portion of the research project did not do so, either because they could not be contacted or because they refused to participate in the study.

Figure 2.1: Derivation of the Child Study Report Sample



[2]In addition, a small number of families who had children who were age three without siblings between the ages of 4 and 18 were excluded from the sample. These families were excluded because no children in the household were eligible for any of the developmental tests or child surveys based on their age (described in the section on data sources, which follows). It should be noted, however, that children age three with older siblings under 18 were included in the SSP child study. Therefore, the exclusion would have affected only a small and particular set of families, those with one or more children over age 15 and one child younger than one year at random assignment.

Age Groups of Children Analyzed

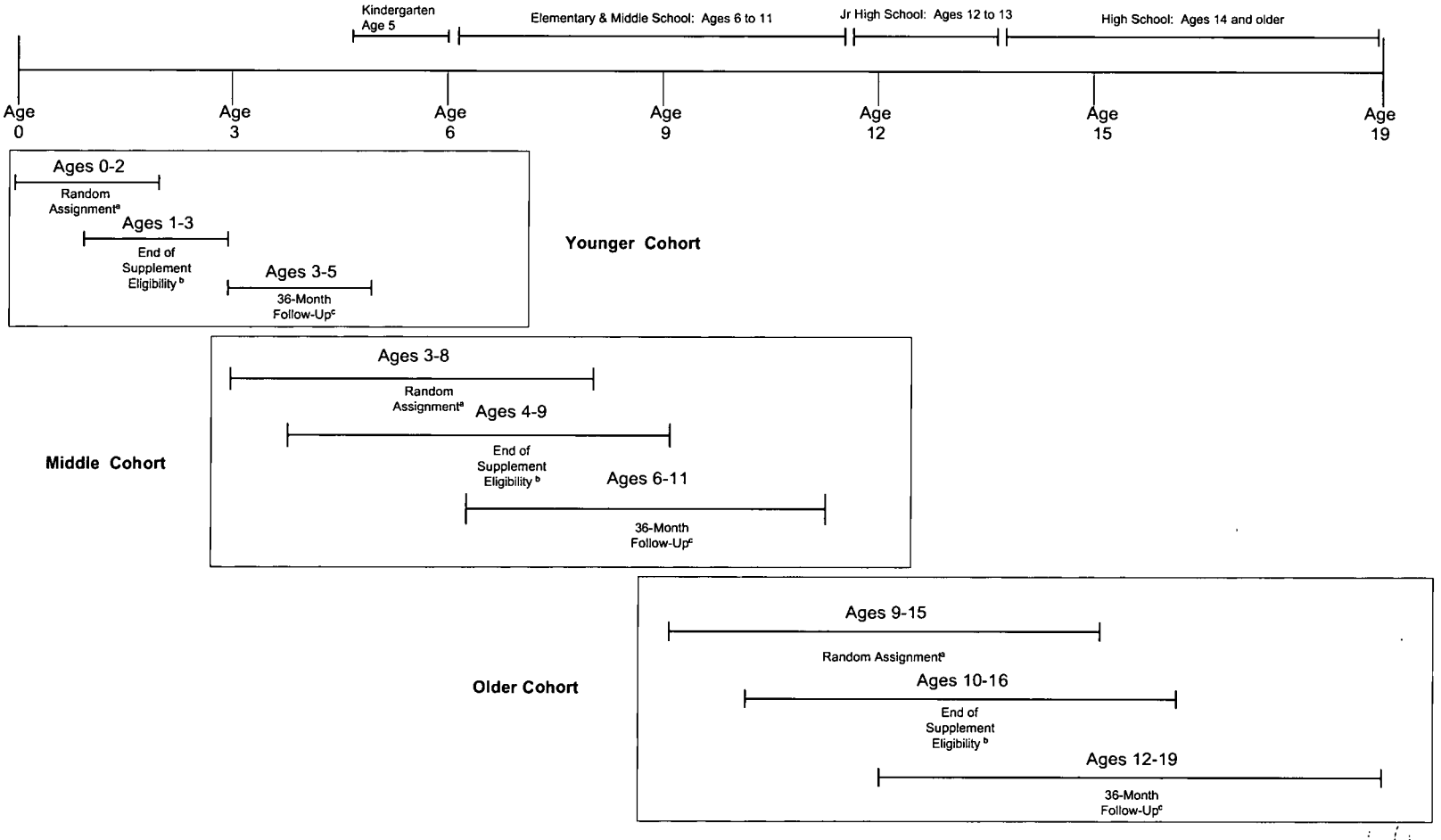
The age range of the children in the sample is quite large, allowing an examination of the impact of SSP on children at various points in development. For this report, three distinct age cohorts of children have been identified: (1) the younger cohort (ages 3–5 at 36 months after random assignment); (2) the middle cohort (ages 6–11 at 36 months after random assignment); and (3) the older cohort (ages 12–18 at 36 months after random assignment). The timeline in Figure 2.2 shows how old each of these three groups of children were at random assignment, at the end of the first year of eligibility for the supplement (by which time program group parents would have had to find a full-time job to take advantage of the supplement offer), and at the 36-month follow-up assessment.

As is clear from this timeline, the children in the younger cohort were 0–2 years at random assignment, entering the program as infants and toddlers. They remained preschoolers throughout the follow-up period. Children in the middle cohort were 3–8 years at random assignment, and preschool-age and early-school-age at the beginning of the study. During the follow-up period, the youngest of this middle cohort entered school so that, at 36 months, all the children in this age group were attending school and were in elementary and middle school; the oldest children in this middle cohort were in elementary and middle school throughout the follow-up period. The older cohort of children in the sample were 9–15 years at random assignment, in pre-adolescence and adolescence at the beginning of the study. These children entered early and late adolescence over the 36-month follow-up period and by the 36-month follow-up were junior high– and high school–age children.

It is likely that children who experience SSP at different points in development will be differentially affected by SSP. Younger children, who have been shown to demonstrate the most negative effects of poverty, may be the most favourably affected by SSP's increase in family income, but these children are the most vulnerable to the negative impacts of maternal employment. Older children have been shown to benefit from after-school programs, which provide them with both an enriching and a structured environment, and which also keep them from deviant peer contact.[3] The transition to adolescence may be a particularly vulnerable time for high-risk children, who may begin to engage in delinquent activity. If parents moving to employment recognize this and are able to provide the supervision that children need during this critical period, then the children may benefit from their mothers' participation in SSP. If adolescents are left to care for themselves, however, they may exhibit problem behaviours. Also, as mothers engage in full-time employment, older children may be relied on more to take on adult roles and responsibilities. It is unclear whether these roles will have positive effects on children, by giving them a sense of responsibility, or will overburden children already struggling with the demands of school and peers.

[3]Pettit et al., 1999, and Posner and Vandell, 1999.

Figure 2.2: Growth of Three Child Age Groups Across the SSP Follow-Up Period



Notes: [a]Random assignment occurred between November 1992 and March 1995.

[b]The end of supplement eligibility occurred between late 1993 and Spring 1996.

[c]The 36-month follow-up took place during 1995 and 1996.

Data Sources

This report uses data from several different sources to assess SSP's impact on children and their families. These include:

- **Baseline survey**. The baseline survey was administered by Statistics Canada to all parents in the research sample just prior to random assignment. The survey includes questions about the parents' demographic characteristics, household composition, employment and earnings, prior education and training, child care needs, attitudes toward work and welfare, housing, physical and emotional disabilities, psychological well-being, and current income. These data are used to describe the research sample and to identify important subgroups.
- **18- and 36-month follow-up core surveys**. Approximately 18 and 36 months after random assignment, Statistics Canada administered a survey to the parents in the research sample. The 18-month survey was completed by approximately 93 percent of the research sample, and the 36-month survey was completed by approximately 90 percent of the research sample. Like the baseline survey, these surveys included information on parents' demographic characteristics and household composition, employment and earnings, education and training, child care, current income, and attitudes. In addition, parents were also asked about their marital history, living conditions, and expenditures. These surveys are used to examine impacts of SSP on employment, earnings, income, marital history, child care, and residential mobility.
- **Income Assistance (IA) records**. The Ministry of Human Resources in British Columbia and Human Resources Development–New Brunswick provided Statistics Canada with monthly IA data files. These data files were used to identify the target population, draw the random sample, and track pre– and post–random assignment receipt of IA payments. Data on IA receipt for 36 months before random assignment and 36 months of data after random assignment are used in this report to estimate impacts on IA receipt and to identify subgroups based on prior IA history.
- **SSP's Program Management Information System (PMIS)**. The PMIS is the information system designed by SHL Systemhouse Inc.,[4] Social Research and Demonstration Corporation, and Manpower Demonstration Research Corporation for the operation and evaluation of SSP. The system supports and tracks the activities in the program and payment offices. PMIS data on program group members' supplement take-up and supplement payments are used in this report.
- **Child assessments**.[5] The primary sources of information for data on family and child functioning are parent surveys and direct assessment of children via math and language tests, and child surveys.
- **36-month follow-up parent survey**. Approximately 36 months after random assignment, parents who had completed a core interview were asked to complete a questionnaire about each of their children's health and development. Unlike the core

[4]The PMIS was designed before February 11, 1999 when SHL Systemhouse was acquired by EDS. The company is now called EDS Systemhouse.

[5]A more detailed discussion of measures of children's outcomes is given in Appendix B.

survey, parents completed this survey on their own (that is, without the assistance of the interviewer). Questions focussed on children's health, behaviour, and academic functioning; parents' parenting behaviour, health, and well-being; and children's after-school activities.

- **Direct assessments with children.**[6] In addition to the information parents provided about their children, direct assessments were also conducted with the children themselves. There is a real advantage to having data from direct child assessments as well as parental reports. While parents can provide important information about their children, the data collected via parental reports reflect parental *perceptions* of children's functioning and may or may not reflect how children are actually faring. For example, parents who are more stressed may view the same child behaviour differently than do parents who are less stressed. The best assessments of child and parental behaviour may come from direct observations, typically conducted through videotaped assessments of parent-child dyads in semi-structured activities. Such assessments could not be conducted in the current study because of their high cost, but direct assessments of children's outcomes through child surveys and tests can also provide independent measures of child and parental functioning. Such assessments can help to corroborate findings based on parental reports and can provide information about whether any program impacts that are found are a result of differences in children's actual functioning or differences in parental perceptions.

  In addition, children's own reports can provide information that cannot be assessed accurately via parental reports. For example, parents often know very little about their adolescents' delinquent activity, including drug and alcohol use. Therefore, in some cases, the child surveys are used not only to corroborate parental reports but also to assess aspects of children's functioning for which children are better able than parents to provide information.

  Two children in the household (one in the case of an only child at home) were selected to complete a direct assessment. For families with three or more children, a weighting scheme was applied in which younger children (ages 4–5 at the 36-month follow-up) and older children (ages 15–18 at the 36-month follow-up) were the most likely to be selected, children ages 10–14 were the next most likely to be selected, and children ages 6–9 were the least likely to be selected. Once the children in the household were selected, they were administered a test and/or a survey, depending on their eligibility as described for the individual assessments.

- **The Peabody Picture Vocabulary Test–Revised**. For children ages 4–7 years, the Peabody Picture Vocabulary Test–Revised (PPVT-R) was administered (Form L). This test assesses children's receptive language skills (that is, their understanding of words). The test is administered by an interviewer who reads aloud a word while showing the child four pictures. The child is asked to point to the picture that best represents the word.

[6] In addition to the assessments described here, children ages 15–18 were administered a literacy test to assess their reading, writing, and comprehension skills. The response rates were very low (50 percent), and, more importantly for assessing the impact of SSP, response rates for the program and control groups differed by five percentage points. Because the program and control groups differed in their response rates, data on the literacy test were not analyzed for this report.

- **Math skills test**. For children ages 7–15 (in Grade 2 and above), a math skills test was administered. The test included a subset of items from the Canadian Achievement Test, Second Edition (CAT/2), a mathematics test developed by the Canadian Test Centre that is administered annually in all provinces to approximately 300,000 students from Grade 2 up to the end of secondary school and college. A different subset of items was selected for each grade level. Children were administered the test according to grade level in school as reported by the parent.

- **36-month follow-up child survey**. For children ages 10–18, a survey was conducted. Like the parent survey, this survey was completed by children on their own. Questions focussed on children's academic functioning, behaviour, and health, and on parents' behaviour and children's after-school activities.

Response Rates

In assessing the reliability of information obtained through surveys, an important concept is the *response rate*, or the proportion of people asked to complete a survey who actually do so. The response rate provides one indication of how similar the group who responded to the survey is to the sample of all families who were asked to complete the survey. Response rates differed across the data sources used to assess children's outcomes. The 36-month follow-up core survey, which included measures of maternal employment, earnings, income, use of child care, and family hardship, was completed by 90 percent of the parents in the baseline sample. Only families in which a core survey was completed were selected to complete the child components. Therefore, the *fielded sample* for the child components consists of those parents or children in families in which a core survey was completed and which were selected (based on the criteria described earlier) to complete the child assessments. The *respondent sample* consists of those parents and children who responded to the surveys and tests and is a subset of the fielded sample. *Response rates* were then computed as the percentage of children or parents in the fielded sample who completed a given assessment (the responding sample divided by the fielded sample). Across all assessments, the response rate was 81 percent (the proportion of children for whom any assessment was completed). The response rate was 77 percent for the parent survey, in which parents responded about all ages of children in the family. For the direct assessments with the children, response rates were higher for those assessments conducted with the youngest children in the family (77 percent for the PPVT-R test and 67 percent for the math test) and lowest for the assessments conducted with the older children in the family (64 percent for the child surveys),[7] largely because older children were more likely to be difficult to contact and more likely to refuse to participate in the study.

The response rates on the child assessments for the oldest children in the sample are quite low. When a survey has a low response rate, the sample members who do respond to the survey might not be representative of the entire group for whom the survey was intended. As a result, two forms of bias can occur. First, average outcomes for survey respondents might not accurately represent outcomes for the entire group. Second, the impacts of the program calculated with survey respondents may lead to incorrect conclusions about the true effects of

[7]The response rate was higher for the child survey conducted with the 10- to 14-year-olds (at 66 percent) than for the child survey conducted with the 15- to 18-year-olds (at 57 percent).

the program. These reflect two forms of *non-response bias*. The discussion that follows is focussed on the latter form of non-response bias because it is more critical to the impact estimates presented in this report. Greater details on the results of both forms of bias are presented in Appendix A.

Fortunately, differences in response rates between program and control groups were at most three percentage points (a non-significant difference). Since it is likely that the non-responders in the program and control groups are similar, the impact estimates conducted on this sample are likely to be valid estimates of the program effects for the children analyzed. They do not, however, tell us what the effects might have been if the full sample had been analyzed.

One means of assessing the extent of non-response bias is to compare survey respondents (the *respondent sample*) and all sample members who should have completed the survey (the *fielded sample*) with respect to information that is already available. The extent to which there are significant differences in impacts between the two samples in previously established data can be regarded as an indication of the extent of non-response bias in program impacts. Since all members of the SSP research sample have completed a baseline survey prior to random assignment, data on baseline characteristics can be compared for the program and control groups in the respondent sample and fielded sample. Moreover, all members of the fielded sample, whether or not they had completed the child assessments, had completed the 36-month follow-up survey, which provided estimates of program impacts on economic outcomes. Again, the respondent sample and the fielded sample can be compared with respect to these economic impacts. Although similarity in these impacts for adults does not necessarily imply that impacts among the children will also be similar, it does give a sense of how impacts on responding families may differ from impacts on non-respondents.

To assess the extent of non-response bias on the impact of SSP on child outcomes, differences between the program and control groups on baseline characteristics and on economic outcomes at 36 months were compared for the respondent and fielded samples in the child assessments. In the analysis of the effect of baseline characteristics, the respondent sample included all sample members who had responded to any of the components of child assessment. The analysis revealed few differences for the program and control groups in baseline characteristics between the respondent and fielded samples (see Appendix A and Tables A.1 and A.2 for details). This analysis suggests that non-response did not make the program and control groups dissimilar. This is critical to obtaining unbiased estimates of the program impact.

Differences in economic impacts were examined separately for the respondent and fielded samples of four components of the child assessment: the parent survey, the PPVT-R, the math test, and the child surveys. For each of these measures, the economic impacts for the parents in the fielded sample were compared with those for the parents in the respondent sample. Differences between any of these sets of samples on the impacts on overall employment or income were extremely rare (see Appendix A, tables A.3 to A.6).

While the results of the response bias analysis on economic outcomes suggests that impacts on children's outcomes are likely similar, it is best to examine non-response bias on the measures examined in this report. Because the child surveys conducted with the older cohort of children (ages 12–18) had the lowest response rates, there was particular concern

that impacts based on information in these surveys would be biased. Therefore, differences in impacts on *parental report measures* were examined separately for the older cohort of children in both the respondent and the fielded samples of the child surveys. (Almost all children in both samples had parents who completed a parent survey.) This provides an indication of what the impacts for the parental surveys would have been if only children who completed a child survey were analyzed. Of the seven measures examined, there was only one statistically significant difference in impacts, on school behaviour problems. This difference in impacts for the two samples indicated that the program impact on school behaviour problems would have been underestimated if only the child survey respondent sample were analyzed. On all other measures, however, there were no differences in impacts between the respondent and fielded samples.

These analyses suggest that there is little evidence that the impacts will be biased by the low response rates, even for the oldest children in the sample. It is important to note, however, that these analyses are limited by the few measures on which non-response bias can be analyzed. Caution is still in order in the interpretation of results on samples with such low response rates.

Characteristics of the Sample at Baseline

Table 2.1 presents characteristics of the report sample at the time of random assignment. While the sample was homogeneous in many ways, there were some important differences among sample members that reflect their varied history. In general, the sample primarily included single mothers, ranging in age from 19 to 39 years at random assignment. Half the single parents had never been married.

The single parents in this sample faced barriers to employment. Half had completed less than a high school education, and only 11 percent had any post-secondary education. Most of the sample members, however, had some paid work experience. While almost 20 percent were working at random assignment, 58 percent were neither working nor looking for work.

Other barriers to employment included physical problems and child care needs. Almost a quarter of the sample reported physical problems keeping them from working, and 16 percent had three or more children. Parents reported that the primary reasons they could not work were personal or family responsibilities, child care needs, and the presence of an illness or disability. Almost three-fourths of all sample members, however, reported that if they worked they could find someone they trusted to care for their children.

Eight percent of sample members were of First Nation ancestry, and five percent were of Asian ancestry. French-speaking parents constituted 14 percent of the sample. While 13 percent of the sample members were immigrants to Canada, only three percent had immigrated in the last five years.

When sample members are assigned to program and control groups randomly, the groups should be identical at baseline, but sometimes minor differences between groups emerge by chance. In this sample, program and control groups were very similar. Differences between program and control groups are given in Appendix A.

Table 2.1: Selected Baseline Characteristics of Parents for the Report Sample

Characteristic	Sample Mean
Gender (%)	
Female	97.24
Age (%)	
19-24	23.36
25-29	23.69
30-39	40.72
40-49	11.16
50 or older	1.08
Marital status (%)	
Never married	52.22
Divorced, separated, or widowed	45.69
Education (%)	
Completed education	
Less than high school education	52.92
Completed high school, no post-secondary education	35.96
Some post-secondary education	11.12
Enrolled in school at baseline	14.49
Recent welfare history	
Number of months on Income Assistance in prior 3 years (%)	
10-23	22.22
24-35	34.95
All 36	42.84
Average IA payment in prior month ($)	853.02
Work history and labour force status	
Ever had a paid job (%)	93.99
Average years worked	6.76
Labour force status at baseline (%)	
Employed 30 hours/week	7.00
Employed < 30 hours/week	13.16
Looking for work, not employed	22.10
Neither employed nor looking for work	57.74
Activity-limiting conditions (%)	
Reported physical problem[a]	23.55
Reported emotional problem[b]	7.04
Emotional well-being	
At risk for depression (%)	26.42
Children	
Number of children under age 19 (%)	
1	48.78
2	35.44
3 or more	15.78

(continued)

Table 2.1: Selected Baseline Characteristics of Parents for the Report Sample (Cont'd)

Characteristic	Sample Mean
Not working and couldn't take a job in prior 4 weeks because of (%)[c]	
Any reason	52.40
Own illness or disability	11.84
Lack of adequate child care	16.27
Personal or family responsibility	21.28
Going to school	9.32
No transportation	7.81
Too much competition	1.94
Not enough education	9.07
Not enough experience or skills	8.06
Other	5.56
Opinions and expectations (%)	
"If I got a job, I could find someone I trust to take care of my children"	
Agree	70.73
Disagree	18.59
No care required	10.68
Ethnic background (%)	
First Nation ancestry	8.56
Asian ancestry	4.92
French-speaking	13.66
Immigration (%)	
Not born in Canada	13.26
Immigrated in last 5 years	2.89
Period of intake (%)	
November 1992-October 1993	34.06
January 1994-March 1995	65.94
Province (%)	
British Columbia	48.57
New Brunswick	51.43
Sample size (total = 3,259)	

Sources: Calculations from the baseline survey and IA administrative records.

Notes: Sample sizes may vary for individual measures because of missing values.

[a]Sample members were considered to have an activity-limiting physical condition if they answered yes to any of the following: "Do you have a long-term physical condition that limits you in the kind or amount of activity you can do (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?" Those who were not working generally did not answer the "at work" part of the question, so their classifications are based on answers to other parts. The conditions reported were not necessarily permanent. Of the sample members who reported an activity-limiting physical condition at the baseline interview, over one-third indicated no such problems at the 18-month follow-up interview.

[b]Sample members were considered to have an activity-limiting emotional condition if they answered yes to any of the following: "Are you limited in the kind or amount of activity you can do because of a long-term emotional, psychological, nervous, or mental health condition or problem (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?"

[c]Multiple responses allowed.

As was indicated earlier in the chapter, children were divided into three age cohorts for analysis. Table 2.2 shows characteristics of the report sample for the three age cohorts of children. The family characteristics of these three age cohorts of children differ in the number of children, the marital history of the parent, and the conditions keeping parents from working.

Table 2.2: Selected Baseline Characteristics of Parents, by Child Age

Characteristic	Younger Cohort[a]	Middle Cohort[b]	Older Cohort[c]
Gender (%)			
Female	99.31	97.88	95.85
Age (%)			
19-24	50.50	20.74	0.24
25-29	28.51	31.00	11.52
30-39	19.70	40.99	64.40
40-49	1.29	7.04	21.36
50 or older	0.00	0.22	2.48
Marital status (%)			
Never married	71.12	51.85	31.47
Divorced, separated, or widowed	26.31	45.70	66.85
Education (%)			
Completed education			
Less than high school education	51.73	52.18	56.45
Completed high school, no post-secondary education	39.76	36.42	32.03
Some post-secondary education	8.51	11.40	11.53
Enrolled in school at baseline	17.43	14.39	9.83
Recent welfare history			
Number of months on Income Assistance in prior 3 years (%)			
10-23	34.12	17.48	17.33
24-35	40.45	35.35	30.27
All 36	25.42	47.17	52.40
Average IA payment in prior month ($)	871.49	876.10	869.38
Work history and labour force status			
Ever had a paid job (%)	93.37	93.36	95.45
Average years worked	4.69	6.31	8.70
Labour force status at baseline (%)			
Employed 30 hours/week	4.77	6.61	8.50
Employed < 30 hours/week	8.45	13.77	13.79
Looking for work, not employed	20.08	21.37	22.61
Neither employed nor looking for work	66.70	58.25	55.09
Activity-limiting conditions (%)			
Reported physical problem[d]	16.83	20.93	30.54
Reported emotional problem[e]	4.67	6.32	9.75
Emotional well-being			
At risk for depression (%)	24.95	25.82	28.82
Children			
Number of children under age 19 (%)			
1	50.65	37.62	32.16
2	35.12	42.06	40.42
3 or more	14.23	20.32	27.43

(continued)

Table 2.2: Selected Baseline Characteristics of Parents, by Child Age (Cont'd)

Characteristic	Younger Cohort[a]	Middle Cohort[b]	Older Cohort[c]
Not working and couldn't take a job in prior 4 weeks because of (%)[f]			
Any reason	62.08	52.45	50.08
Own illness or disability	6.35	10.31	16.89
Lack of adequate child care	25.00	18.48	12.01
Personal or family responsibility	31.65	22.46	18.57
Going to school	12.70	8.89	5.92
No transportation	9.23	8.34	7.29
Too much competition	1.39	2.02	2.48
Not enough education	10.22	9.65	9.69
Not enough experience or skills	8.63	8.29	8.17
Other	5.45	5.50	5.68
Opinions and expectations (%)			
"If I got a job, I could find someone I trust to take care of my children"			
Agree	78.83	78.87	54.06
Disagree	20.97	20.25	18.88
No care required	0.20	0.88	27.07
Ethnic background (%)			
First Nation ancestry	9.73	8.12	9.62
Asian ancestry	4.77	5.02	5.45
French-speaking	13.66	11.93	13.34
Immigration (%)			
Not born in Canada	10.78	12.97	16.08
Immigrated in last 5 years	3.57	2.07	3.13
Period of intake (%)			
November 1992-October 1993	35.31	34.86	33.07
January 1994-March 1995	64.69	65.14	66.93
Province (%)			
British Columbia	48.27	50.11	48.40
New Brunswick	51.73	49.89	51.60
Sample size (total = 3,259)	**1,011**	**1,836**	**1,252**

Sources: Calculations from the baseline survey and IA administrative records.

Notes: Sample sizes may vary for individual measures because of missing values.

[a]"Younger Cohort" children were ages 3–5 at the 36-month follow-up.

[b]"Middle Cohort" children were ages 6–11 at the 36-month follow-up.

[c]"Older Cohort" children were ages 12–18 at the 36-month follow-up.

[d]Sample members were considered to have an activity-limiting physical condition if they answered yes to any of the following: "Do you have a long-term physical condition that limits you in the kind or amount of activity you can do (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?" Those who were not working generally did not answer the "at work" part of the question, so their classifications are based on answers to other parts. The conditions reported were not necessarily permanent. Of the sample members who reported an activity-limiting physical condition at the baseline interview, over one-third indicated no such problems at the 18-month follow-up interview.

[e]Sample members were considered to have an activity-limiting emotional condition if they answered yes to any of the following: "Are you limited in the kind or amount of activity you can do because of a long-term emotional, psychological, nervous, or mental health condition or problem (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?"

[f]Multiple responses allowed.

Not surprisingly, the household composition of children depends on their age. Older children tend to have older mothers and to have more siblings. More importantly, they are much more likely than their younger peers to come from divorced or separated parents rather than never-married mothers; two-thirds of mothers of the oldest children were divorced or

separated at random assignment, whereas over two-thirds of mothers of the youngest children had never been married. There were no differences in ethnic background or immigration status between the three age groups of children.

There was little difference between parents' educational history across the age cohorts, but parents did differ in their welfare history. Because SSP targeted long-term IA recipients, all the parents in the sample had been receiving Income Assistance for at least 11 of the 12 months prior to random assignment, but parents in the three age cohorts differed in the extent to which they were long-term recipients. Not surprisingly, parents of older children were twice as likely as parents with younger children to have been on welfare for three or more years. Also, parents of older children had worked for more years prior to random assignment.

Mothers of older children were more likely to report having a physical or emotional problem keeping them from working, but they were less likely to report that child care or a personal or family responsibility was keeping them from working. Not surprisingly, mothers of the older children did not feel they needed care, but mothers of the young and middle cohorts of children were equally likely to report that they could find someone they trusted to care for their children if they worked.

It is important to keep in mind these differences in understanding how SSP may affect children differently depending on their age. That is, if differences in findings between the age cohorts emerge, it will be important to examine whether these differences are due to differences in the way in which children at different developmental levels are affected by the program or due to differences in family baseline characteristics.

ASSESSING THE EFFECTS OF SSP

In order to determine the effect of SSP, the mean score in the control group on each measure is compared with the mean score in the program group. Because families were randomly assigned to program and control groups, the differences between the two groups in their scores on the outcome measures can be used to determine the effect, or *impact*, of SSP.

Statistical tests (a two-tailed test) are conducted on this difference to determine if the impact is *statistically significant*. An impact is determined to be statistically significant if the impact is large enough to be regarded as evidence that the program had an effect. When children rather than parents are analyzed in this report, the statistical tests of the significance are adjusted to account for the shared relation between children in the same family. Asterisks next to the impact estimate indicate the degree of statistical significance. In the tables throughout the report, a single asterisk indicates that the program and control groups are significantly different at the 10 percent significance level, meaning that differences of that size are expected to occur less than 10 percent of the time. Two asterisks means that the program and control groups are significantly different at the five percent significance level. Three asterisks means that the program and control groups are significantly different at the one percent significance level. If there are no asterisks, then the difference between the program and control groups is too small to be considered as evidence of an impact. The *p-value* is the exact probability that the difference is due to random chance, upon which the asterisks are based.

When presenting the impacts of SSP on the child and family outcomes, the "effect size" of the impact is shown as well. Effect sizes are computed by dividing the difference between the program and control groups by the standard deviation, or average variation, in the control group under consideration. The absolute value of the effect size provides a standard measure of the program impact that can be used to compare outcomes measured on very different scales. A larger absolute value indicates a larger impact of the program on that outcome; a smaller one indicates a smaller effect.

Some researchers have suggested that effect sizes can be used to determine the size of the impact estimate, that is, how large it is relative to other studies. Generally, effect sizes of .1, .3, and .5 are considered to be small, medium, and large, respectively.[8] These benchmarks are based on the non-experimental literature, however, and so do not show the size of the effects of SSP relative to other interventions. A review of the experimental literature gives a better sense of the impact of SSP, relative to other intervention studies, on children's outcomes.

The best comparisons for a program like SSP are those that target adult employment, income, and public assistance; only indirectly, through changes in parental economic behaviour, are they likely to affect children. Such programs include New Hope[9] and the Teenage Parent Demonstration (TPD).[10] In general, these studies report effects for children in the .00 to .29 range.[11] While benchmarks of .1, .3, and .5 may be reasonable for non-experimental research, .1, .2, and .3 may be more reasonable estimates of small, medium, and large effects for an experimental evaluation like SSP.

Effect size is not the only way to determine the "importance" of a particular finding, however. SSP may have a strong effect on a particular measure, but that measure may play a very small role in terms of future outcomes. For example, some research has suggested that problem behaviour is more strongly associated with children's later academic and behavioural functioning than is positive behaviour.[12] Therefore, a small effect on problem behaviour may be more important, in terms of future child well-being, than a large effect on positive behaviour. When summarizing the findings on a particular set of outcomes, this report draws on the non-experimental literature to discuss the relationship between the outcomes assessed here and later outcomes for children.

As is clear from the data sources described earlier, some of the measures are assessments at the family level (for example, maternal employment, family income, and parental functioning), but some are at the child level (such as children's test scores or behaviour, and parenting behaviour with a particular child). Therefore, sample sizes differ depending on whether families or children are analyzed for particular measures, whether all children in the family are analyzed (as with measures collected via parental surveys), or whether only one or

[8]Cohen, 1988, and Lipsey, 1990.

[9]Bos et al., 1999.

[10]Kisker, Rangarajan, and Boller, 1998.

[11]It is important to note, however, that New Hope did find large (.2–.5) and statistically significant effects on boys based on teacher report data. The effects reported here are for boys and girls when analyzed together, across maternal and teacher report outcomes.

[12]Masten et al., 1995.

two children are analyzed (as with measures collected via the child assessments).[13] The sample size analyzed for each set of measures is included in the tables.

ADULT ECONOMIC IMPACTS FOR THE CHILD SAMPLE

Impacts on the entire 36-month core survey sample are discussed in Chapter 1. In the remainder of this chapter, impacts on the adult economic outcomes are presented by age cohort for the sample analyzed in this report. As discussed earlier in the chapter, three age groups of children are analyzed: a younger cohort (ages 3–5 years at the 36-month follow-up), a middle cohort (ages 6–11 at the 36-month follow-up), and an older cohort (ages 12–18 at the 36-month follow-up). These impacts are shown in Table 2.3. For simplification, only the control group level of the outcome under consideration and the difference between the program and control groups are presented in this table. In general, SSP increased employment and full-time employment, increased earnings and income, and reduced poverty and hardship for parents of all ages of children.

Impacts for Parents of the Younger Cohort of Children

In the first 34 months of follow-up, SSP increased employment by three months on average and increased the number of parents who ever worked by nearly 14 percentage points. For the control group, about half of employment was full-time employment (four months out of eight on average). SSP almost doubled months employed full time and increased the proportion of parents who ever worked full time by almost 17 percentage points. These shifts implied that a greater proportion of work for the program group was full-time work.

By increasing employment, SSP increased the earnings of single parents by $117 per month. Because members of the program group were eligible for SSP supplement payments, the program decreased IA payments by $75 per month. This decrease was more than offset by average SSP supplement payments of $146 per month, resulting in an overall increase in income from earnings, IA, and SSP of $191 per month.

The last two panels of the table present information on total family income and employment in the six months prior to the 36-month interview and expenditures and hardship measured at the 36-month interview for families with young children. In the control group, almost 22 percent of the parents worked in the six months prior to the interview, their monthly income averaged $1,470, and 88 percent of families lived below the low-income cut-off. SSP increased the proportion of families working by almost 14 percentage points and total family income by $202; it reduced the proportion of families below the low-income cut-off by 10 percentage points. SSP had no impact on expenditures for this group,[14] however, and few impacts on hardship. While the program significantly reduced the proportion of families who could not get groceries or had to use a food bank in the last three months prior to the follow-up interview, it did not significantly improve access to medical care or the condition of housing, nor were there any impacts on neighbourhood quality.

[13] As was indicated earlier in this chapter, statistical tests of the significance of the impact estimates conducted on assessments measured at the child (rather than the family) level are adjusted to account for the shared relation between children in the same family.

[14] SSP did, however, increase expenditures on food and clothing three years after random assignment for the full sample of parents who responded to the 36-month interview. It also increased expenditures 18 months after follow-up for parents who responded to the 18-month interview.

Impacts for Parents of the Middle Cohort of Children

In most respects, the outcomes and impacts of SSP on employment and income are much the same for parents of the middle cohort as for parents of younger children. In general, the program's impacts on employment and income, as well as on other measures, were substantial. SSP almost doubled full-time employment and increased earnings by about $100 per month, and income from earnings, Income Assistance, and SSP by more than $150 per month. SSP also significantly increased employment in the six months prior to the 36-month interview by 11 percentage points, increased family income during this period by $154 per month, and reduced the proportion of families below the low-income cut-off by eight percentage points. Program group parents reported spending more on food, and fewer parents reported times when they could not afford food, compared with parents in the control group. On other measures of hardship and on measures of neighbourhood quality, however, program and control groups did not differ.

Impacts for Parents of the Older Cohort of Children

In general, the impacts of SSP are sizeable for parents of older children. SSP significantly increased employment and increased months employed full time by over 60 percent. SSP also increased earnings by $78 per month, and reduced income from Income Assistance by a similar amount. Because of SSP supplement payments, the program increased parental income. In the six months prior to the 36-month interview, SSP increased the full-time employment rate by eight percentage points. SSP increased family income by $180 per month, reducing the proportion of families living below the low-income cut-off by eight percentage points. The greater income allowed program group families to spend slightly more on food ($26 per month), and parents in the program group reported they were less likely to have difficulties getting food than parents in the control group. There were no program impacts on families' expenditures on children's clothing or on household or medical problems. Program group members did report lower levels of neighbourhood quality than control group members.

Comparisons of Economic Impacts Across the Three Age Cohorts

Both control group outcomes and program impacts are strikingly similar across the three age groups. For the control group, employment rates ranged from 55 to 58 percent, with full-time employment rates ranging from 36 to 39 percent. Monthly earnings were only slightly lower for parents of young children ($182 per month, compared with $219 for the other two groups), and monthly income was between $930 and $980 for parents of all three age groups. Likewise, poverty, food and clothing expenditures, and measures of hardship were virtually identical in the three groups of families.

The impacts of the program were also quite similar for parents of the three cohorts, although there were some interesting differences in impacts, especially when these are considered in relation to the respective control group outcomes. Months employed full time increased by nearly four for the youngest and middle age groups, but only about three for the oldest age group. These numbers do not appear greatly different, but, relative to the control group levels, the difference in impacts is more pronounced. For example, months employed full time almost doubled for the younger age group, increased by about 80 percent for the

Table 2.3: SSP Impacts on Economic Outcomes Over the 36-Month Follow-Up, by Child Age

	Younger Cohort[a]		Middle Cohort[b]		Older Cohort[c]	
	Control Group	Program/Control Group Difference (Impact)	Control Group	Program/Control Group Difference (Impact)	Control Group	Program/Control Group Difference (Impact)
Employment, months 1 to 34[d]						
Months employed	8.39	3.06 ***	9.47	3.33 ***	10.15	2.54 ***
Months employed full time[e]	4.48	3.83 ***	4.82	3.93 ***	4.93	3.08 ***
Employment since random assignment (%)[d]						
Ever employed	54.83	13.73 ***	58.31	8.68 ***	56.20	8.87 ***
Ever employed full time[e]	36.49	16.66 ***	39.35	13.58 ***	35.87	12.20 ***
Monthly earnings and income, months 1 to 34[d]						
Earnings ($)	181.78	117.01 ***	219.38	100.77 ***	218.94	77.84 ***
Income from Income Assistance ($)	741.17	-74.18 ***	745.41	-94.61 ***	741.53	-82.71 ***
Income from SSP supplement payments ($)	0.00	146.00 ***	0.00	158.37 ***	0.00	144.12 ***
Total income from earnings, Income Assistance, and SSP ($)	928.84	190.98 ***	974.85	159.12 ***	979.44	124.04 ***
Employment and income 6 months prior to interview						
Employed full time (%)	21.82	12.26 ***	24.08	10.53 ***	23.31	8.38 ***
Monthly family pre-tax income ($)	1,469.72	202.25 ***	1,514.33	154.32 ***	1,406.88	180.84 ***
Monthly income below low-income cut-off (%)	88.33	-10.20 ***	85.68	-8.13 ***	88.57	-7.80 ***
Expenditures and hardship, at 36 months						
Monthly food expenditures ($)	379.66	-4.09	378.53	16.61 *	391.81	25.76 **
Monthly expenditures on children's clothing ($)	47.01	5.37	50.07	3.74	55.30	0.51
Used food bank/couldn't afford food in last 3 months (%)	41.70	-9.04 ***	40.11	-4.76 **	45.11	-8.11 ***
Good neighbourhood quality (%)	76.40	0.27	75.31	0.28	78.61	-5.94 **
Household/structural problems (%)	22.59	-2.71	23.58	-2.60	23.51	-2.92
Health care problems (%)	31.27	-0.65	32.18	-1.40	33.94	0.27
Sample size (total = 3,259)						

Sources: Calculations from the IA administrative records, the 18-month follow-up core survey, and the 36-month follow-up core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

[a]Younger cohort children were ages 3–5 at the 36-month follow-up.

[b]Middle cohort children were ages 6–11 at the 36-month follow-up.

[c]Older cohort children were ages 12–18 at the 36-month follow-up.

[d]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[e]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

middle age group, but increased only about 60 percent for the older age group. Likewise, earnings impacts were largest for families with younger children and smallest for families with older children, and income from earnings, Income Assistance, and SSP supplements increased most for families with younger children and least for families with older children. Families with younger children did not increase their spending on food, however, while families with older children increased their spending on food by the greatest amount.

Longitudinal Trend in Impacts on Full-Time Employment

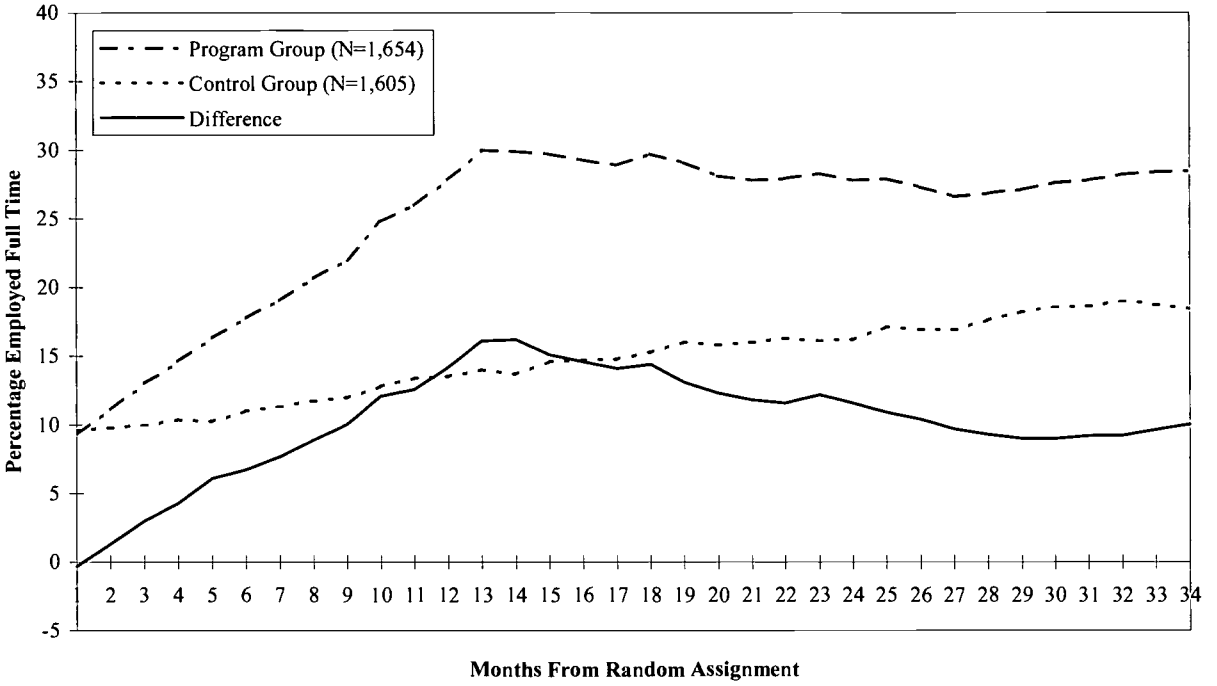
In understanding the impacts of SSP on children at the 36-month follow-up point, the timing of full-time employment may be as important as, or more important than, the averages over the three-year follow-up period. To the extent that children are affected by recent events, for example, a program that increased income and full-time employment primarily at the end of the follow-up period might have greater effects on children at the 36-month follow-up point than one whose largest effects on employment and income come near the time of random assignment. To the extent that children are affected by events only over a long period, on the other hand, a program that increased income and full-time employment throughout the follow-up period might have greater effects on children at the 36-month follow-up point than one whose impacts on adults were concentrated in time. Unlike the data on children, which are collected at a single point in time, data on parental economic outcomes are collected over the 36-month follow-up, allowing for an examination of the trend in impacts on parental economic outcomes.

For each of the 34 months for which employment information was available, Figure 2.3 shows the proportion of each research group that worked full time and SSP's impact on full-time employment (the solid line). The sample includes all parents in the report sample. Recall that members of the program group could receive an SSP supplement payment only if they found full-time work in the first year after random assignment. During that first year, full-time employment for the program group consequently soared, increasing from about 10 percent to more than 30 percent.[15] In contrast, the control group increased its full-time employment only gradually in the first year, from just under 10 percent around the time of random assignment to a little less than 15 percent by the end of the first year. As a result, the program's *impact* on full-time employment, measured as the difference between the program group and control group for this outcome, steadily increased during this first year. By the beginning of the second year (month 13), the program had more than doubled full-time employment.

In the second half of the follow-up period, the program's impact on full-time employment diminished somewhat. The control group's rate of full-time employment continued to increase, rising from just under 15 percent at the end of the first year to 20 percent at the end of the third year. In contrast, the proportion of the program group working full time remained remarkably steady during this time, so that the program's impact remained fairly high at about 10 percentage points at the end of the follow-up period.

[15]Although SSP supplements were generally paid to program group members who worked 30 hours or more per week on average for an entire month, for this report a person was considered to have worked full time if she worked 30 hours or more for at least one week in the month.

Figure 2.3: Percentage Employed Full Time, by Month From Random Assignment



Sources: Calculations from the baseline survey, the 18-month follow-up core survey, and the 36-month follow-up core survey.

In other words, the program's impact on full-time employment peaked at the end of the first year of follow-up but was substantial through the remainder of the follow-up period. Because the program's impact on income is linked so closely to its impact on full-time employment, the impact on income also grew throughout the first year of follow-up and declined somewhat during the second and third years of follow-up.

The sharp initial increase in impacts followed by a slow decline occurred not only for the report sample as a whole but also for parents of children in each of the three age groups. The variation in impacts was smallest for parents of children in the younger cohort, however, and similar for parents of children in the middle and older cohorts. For the younger cohort, the impact on full-time employment peaked at about 15 percentage points but was still nearly 13 percentage points at the end of the follow-up period. For the middle and older cohorts, in contrast, the full-time employment impact at the end of the follow-up period was only half as great as at its peak. Thus, children in the younger cohort experienced steadier and more prolonged impacts from their parents' employment and income.

CONCLUSION

Program impacts on adult economic outcomes for the child report sample are very similar to those for the 36-month core sample in that the program increased employment, reduced IA receipt, and increased family income. These impacts are generally similar across families of children in the three age cohorts. Since SSP directly affects only employment and income, any effects on children are likely to be linked to these economic outcomes.

The similarities in economic impacts do not imply, however, that the impact of SSP on child outcomes will necessarily be similar across the three age cohorts of children. Children

of different ages may respond differently to the same behaviour of their parents. For example, increases in income may be most helpful for the younger children, but these children may also be the most sensitive to increases in maternal employment. Alternatively, differences between the age cohorts may emerge because of differences in the "intermediate outcomes" (discussed in greater detail in Chapter 1), such as child care or parenting behaviour. For example, parents may place their children into different child care arrangements depending on their age. Parents may put their younger children in day care and after-school activities but leave their oldest children without structured activities. These differences may lead to very different program impacts for children, depending on their age. The next chapter explores how the economic impacts of SSP for adults may be playing out for children as it examines the impacts on children's outcomes.

Chapter 3:
Impacts of SSP on Child Outcomes

In this chapter, the impact of SSP on children's health and development is examined. Three major domains of children's functioning are explored: (1) academic achievement and cognitive performance, (2) behaviour and emotional well-being, and (3) health and safety. The impact of SSP is assessed by comparing program and control groups for child outcomes in these three domains.

As was indicated in the first chapter, SSP may have a very different influence on children at different stages of development. Findings are therefore examined separately for three age groups of children: the younger cohort (ages 3–5 at 36-month follow-up), the middle cohort (ages 6–11 at 36-month follow-up), and the older cohort (ages 12–18 at 36-month follow-up). Younger children may be most sensitive to maternal separations, and more strongly influenced by changes in family income. Older children may benefit from maternal employment and family income changes if they are placed in supervised care settings after school. Adolescents may be asked to assist working parents with household chores; the effects of such changes in family roles are unclear.

Chapter 2 suggests that for all ages of children, SSP increased full-time maternal employment, income from earnings, and total family income. While increases in employment and earnings due to SSP were similar for parents of all three cohorts of children, relative to the control group, employment increases were greater for the parents of younger than for parents of older children.

This chapter begins with a summary of the major findings. A detailed examination of the impact of SSP for each of the cohorts of children is then presented, followed by a discussion of the extent to which any differences in findings across these three age cohorts are driven by differences in family characteristics at baseline. The chapter concludes with a short discussion of the implications of the findings of the impacts of SSP on children.

FINDINGS IN BRIEF

- **SSP had no effects on children's outcomes for the younger cohort**. Program and control groups did not differ in cognitive performance on the language test or in parental reports of children's health and behaviour.
- **For the middle cohort, SSP had small positive effects on children's cognitive and school outcomes. On many other measures, program and control groups did not differ**. Children in the middle cohort in the program group scored higher on a math skills test relative to children this age in the control group, and parents in the program group gave more favourable reports of their children's performance in school than did parents in the control group. In addition, there was some suggestion that children in the program group were in better health and were less likely to have long-term health problems than their peers in the control group. All these effects, however, were small.

- **There were no program impacts on children's social behaviour and emotional health for children in the middle cohort**. Both parental and child report ratings showed no differences between program and control groups on behavioural and emotional well-being measures.
- **Adolescents' own reports suggested that SSP increased substance use and minor (but not major) delinquent activity for the older cohort**. Adolescent children in the program group engaged in more smoking, drinking, and marijuana use than adolescent children in the control group. They also were more likely to stay out later than their parents allowed. In addition, small unfavourable program impacts were found in children's school functioning, as reported by parents and adolescents. Effects of SSP were generally small, however, and there were no program impacts on children's use of harder drugs (such as cocaine or LSD) or on major delinquent activity (stealing, carrying weapons, involvement with police). Finally, these results should be interpreted more cautiously than the findings on the younger and middle cohorts because many more families with children in this age group did not respond to the 36-month interview.
- **SSP had no impact on many other outcomes that were examined for the older cohort of children**. On measures of children's health and emotional well-being, and on a math skills test, older children in the program and control groups did not differ.
- **Analyses suggested that these differential program impacts for the three age cohorts are not due to family background differences between the age groups**. Because children of the different cohorts come from families with very different baseline characteristics, there was some concern that the impacts on children for the different cohorts might be driven by these differences. Analyses comparing the role of child age relative to the other baseline characteristics, however, support the conclusion that the differences in program impacts among the cohorts were not accounted for by differences in family baseline characteristics.
- **The small effects for the middle and older cohorts of children may be masking larger effects in families who took up the supplement**. While the overall effects on children's functioning due to SSP are relatively small, these average effects may be hiding important variation in the sample. In particular, the effects are likely confined to the one-third of the program group members who took up the supplement and who experienced increased income when they engaged in full-time employment. The effects for this one-third of children must have been large enough to find effects when all children in the program and control groups are analyzed together.

IMPACTS ON CHILD OUTCOMES FOR THE YOUNGER COHORT

Impacts on younger children's cognitive, behaviour, and health outcomes are presented in Table 3.1. As described in Chapter 2, the table shows the average outcomes for the program and control groups, along with the impact of the program, measured as the difference between outcomes for the two groups. The p-value represents the exact significance level of this difference.[1] The last column of the table shows the effect size for the outcome, which

[1]Significance levels are adjusted to account for the shared relation between siblings in a family.

provides a standard measure of the effect of SSP and makes it possible to compare outcomes measured on different scales.[2]

Table 3.1: SSP Impacts on Child Outcomes for the Younger Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive functioning					
PPVT-R score[a]	92.18	91.32	0.86	0.492	0.05
Sample size	403	425			
Behaviour and emotional well-being[b]					
Behaviour problems	1.48	1.48	0.00	0.848	0.01
Positive social behaviour	2.51	2.53	-0.03	0.321	-0.06
Sample size	497	535			
Health and safety					
Average health[c]	4.01	4.05	-0.04	0.415	-0.05
Any long-term problems (%)	25.60	27.43	-1.83	0.504	-0.04
Any injuries (%)	10.93	12.22	-1.29	0.516	-0.04
Sample size	503	540			

Sources: Calculations from the 36-month follow-up parent survey and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]Behaviour problems and positive social behaviour are rated on a scale from 1("never") to 3 ("often").

[c]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Sample sizes for the three panels of the table differ because some measures were assessed for all children in the sample (the parental report measures) and some were assessed for only one or two children in the family or for only a subset of children in the age range (the child surveys, PPVT-R, and math test).

Cognitive Performance

The measure of cognitive performance for the youngest children in the child sample is the PPVT-R standard test score, a measure of children's receptive language (children's understanding of language).[3] The level of the control group on this measure provides a context for understanding the level of functioning of the children in this sample *in the absence of SSP*. Children in the control group had an average score of 91 on the PPVT-R, which corresponds to a percentile score of 27. That is, they scored higher than only

[2]See Chapter 2 for greater detail on the information presented in the tables.

[3]French-speaking children were administered the Échelle de vocabulaire en Images (EVIP), a test comparable to the PPVT-R. However, scores on the EVIP are not equivalent to scores on the PPVT-R; therefore, the French- and English-speaking children were analyzed separately. Unfortunately, the very small size of the sample of children who chose to answer the test in French did not allow an analysis of the impact of SSP on children's functioning on the EVIP.

27 percent of children in a sample nationally representative of children in the United States. Thirty percent of children scored below a standard score of 85, a typical cut-off to identify children with very low language skills. These findings suggest very low language skills among children in this sample. Unfortunately, comparisons with the program group suggest that there were no program impacts on PPVT-R scores for the youngest children in this sample. Children in both the program and the control groups had low language skills, with scores in the low 90s.

Behaviour and Emotional Well-Being

The second panel of the table presents program and control group means on parental reports of children's behaviour and emotional well-being. Two measures are examined: children's behaviour problems and positive social behaviour. Behaviour problems and positive social behaviour were rated on a scale from 1 to 3 (see the following text box for greater detail on these measures). In general, parents reported more positive social behaviour than behaviour problems.

Measures of Behaviour Problems and Positive Social Behaviour

The parent survey included a series of questions about children's behaviour and emotional well-being for children up to age 14. Items tapped four dimensions of children's functioning: (1) *hyperactivity*, with items such as "My child can't sit still," "My child is restless, hyperactive," "My child is distractible," "My child has trouble sticking to any activity;" (2) *conduct problems*, with items such as "My child gets into many fights," "My child destroys things belonging to the family or other children"; (3) *internalizing problems* (or emotional well-being) with items such as "My child seems to be unhappy, sad, or depressed," and "My child cries a lot;" and (4) *positive social behaviour*, with items such as "My child will try to help someone who has been hurt," "My child comforts children who are crying or upset." A slightly different set of items was asked of parents of three- to five-year-old children than for parents of children ages 6–14. However, items tapping all four dimensions described above were included in the scales for both younger and older children. All items were scored on a 3-point scale ranging from "never/not true" to "often/very true." The technical details of this scale are described in greater detail in Appendix B.

Behaviour problems was scored as the average across the items in the hyperactivity, conduct problems, and internalizing problems subscales. Scores on the total behaviour problems scale ranged from 1 ("never") to 3 ("often").

Positive social behaviour was scored as the average across the items in the positive social behaviour scale. Scores on the total positive social behaviour scale ranged from 1 ("never") to 3 ("often").

Note that a high score on the behaviour problems scale indicates a more unfavourable score, while a high score on the positive social behaviour scale indicates a more favourable score.

Comparisons between the program and control groups show similar scores in the two groups. As with the cognitive outcomes, no significant differences between program and control groups were found.

Health and Safety

Parental reports of children's health, long-term health problems, and injuries were also examined and are shown in the third panel of the table. Parental reports of children's general health were scored on an average of four items regarding children's health status, which parents rated on a scale from 1 to 5, with high scores indicating more positive health outcomes. For example, items included "His/her health is excellent" and "He/she doesn't get sick often." Parents reported high levels of health, with mean scores of 4 out of a possible high score of 5. There were no program impacts on parental reports of general health.

Slightly over one-fourth of the children were reported to have long-term health problems (such as asthma, bronchitis, heart problems, and emotional and learning impairments), and 12 percent of the children were reported to have experienced one or more injuries over the last year. Program and control groups did not differ on either of these measures of children's health and safety.

Discussion

These analyses, based primarily on parental report measures,[4] suggest that the program had no impact on the younger children's functioning and behaviour. Considering how young these children were at the start of the program, it is reassuring that the increases in full-time maternal employment did not result in negative impacts on the children. Perhaps the increase in income that accompanied parents' full-time employment in the program group offset any negative effects of full-time employment, since research on the effects of poverty on children suggests that these youngest children might benefit the most from the income impacts of SSP.

The increase in parental stress that may have accompanied the increase in employment may have been offset by the better quality child care that parents were able to purchase for their children. However, because program group members received the SSP supplement (and thus increased their income level) only when they engaged in full-time employment, it is not easy to separate the effects of income and employment on children. Thus, it is not possible to know whether negative effects of employment were offset by positive effects of income or whether either of these parental economic changes had any effects on these young children.

IMPACTS ON CHILD OUTCOMES FOR THE MIDDLE COHORT

Program impacts on children's cognitive and academic functioning, behaviour, and health outcomes are presented in Table 3.2.

[4]Impacts on child outcomes for children in the lower cohort were also analyzed by child gender and by province. In general, findings did not differ by gender of child or by province. These results are presented in Appendix C.

Table 3.2: SSP Impacts on Child Outcomes for the Middle Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Standardized tests					
PPVT-R score[a] (ages 6-7)	93.21	90.78	2.43	0.110	0.13
Sample size	293	292			
Math score[b] (ages 7-11)	0.56	0.52	0.04 **	0.010	0.14
Sample size	699	622			
Parental report (ages 6-11)					
Average achievement[c]	3.71	3.61	0.10 **	0.018	0.11
Below-average, any subject (%)	22.84	25.65	-2.81	0.147	-0.06
Any grade repeated (%)	12.82	11.31	1.51	0.307	0.05
Sample size	1,015	982			
Child report (ages10-11)					
Average achievement[c]	3.91	3.87	0.04	0.554	0.05
Below-average, any subject (%)	7.35	9.05	-1.70	0.505	-0.06
Sample size	244	221			
Behaviour and emotional well-being					
Parental report (ages 6-11)					
Behaviour problems[d]	1.42	1.43	-0.01	0.519	-0.03
Positive social behaviour[d]	2.58	2.59	-0.01	0.709	-0.02
School behaviour problems[e]	1.25	1.26	0.00	0.861	-0.01
Sample size	1,111	1,047			
Child report (ages 10-11)					
Behaviour problems[d]	1.47	1.46	0.01	0.778	0.03
Positive social behaviour[d]	2.52	2.46	0.06	0.115	0.14
Sample size	248	226			
Health and safety					
Parental report (ages 6-11)					
Average health[f]	4.11	4.02	0.09 **	0.013	0.11
Any long-term problems (%)	32.43	36.98	-4.55 **	0.027	-0.09
Any injuries (%)	12.11	11.66	0.45	0.747	0.01
Sample size	1,109	1,041			
Child report (ages 10-11)					
Average health[f]	3.85	3.84	0.01	0.905	0.01
Sample size	235	217			

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test-Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Behaviour problems and positive social behaviour are rated on a scale from 1 ("never") to 3 ("often").

[e]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[f]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Cognitive Performance and Academic Achievement

Children in the middle cohort took the PPVT-R (a test of children's understanding of language) if they were 6–7 years old and a math skills test if they were 7–11 years old and in Grade 2 or above.[5] Average scores in the control group indicate that this group of children functioned poorly on these tests. On the PPVT-R, average scores of 91 correspond to a percentile score of 27 (similar to that of the youngest children in the sample). And 37 percent of control group children scored below a standard score of 85, indicating very low receptive language skills. Mean scores on the math skills test indicate that these children answered half the items on the test correctly.

Program impacts on children's math scores were significant, as can be seen in the higher scores on the math skills test in the program group relative to scores for children in the control group. Children in the program group answered 56 percent of items on the test correctly, while children in the control group answered 52 percent of the items correctly, indicating that children in the program group on average correctly answered one item more than children in the control group. Program impacts on children's PPVT-R were in the same direction, favouring program group members, but only approached significance ($p = .11$, indicating that there is an 11 percent probability that the difference between the program and control groups is due to random chance). For both the math test and the PPVT-R, the effect sizes (in the range of .13–.14) suggest that these effects are small; the increase in the math test corresponded to a move from the 50th percentile to just below the 55th percentile.

The remainder of the first panel of the table presents the program and control group means on parental and child report measures of academic functioning. Parental reports measures (for children ages 6–11) are average scores of parents' evaluations of how well their children were doing across three academic areas (math, reading, and writing), ranging from 1 ("not very well at all") to 5 ("very well"). Children of parents in the control group scored an average of 3.6 on this scale. Children's own reports (for children ages 10–11) were based on average scores across three subjects: English, math, and science. Also, according to parental reports, 11 percent of children had repeated a grade level in school.

In regard to program impacts, parental reports of their children's academic performance were significantly higher in the program group than in the control group. When reports for each academic area were examined separately, program impacts were significant for children's functioning in math, but not for reading and writing (not shown in the table). These findings are consistent with the program impacts found on the cognitive test measures, described earlier. SSP had no impact, however, on the likelihood of children's performing below average in any one subject or having repeated a grade level in school. This finding suggests that extreme difficulties in school functioning were not being affected by SSP. As with the impacts on children's test scores, the effect on academic achievement is significant but small (with an effect size of .11). In percentile terms, however, children in the program group moved from just under the 45th percentile to just above the 55th percentile.

For children ages 10–11, program impacts were not found on their own reports of their academic functioning; unlike the parental report measures, the child report measures showed

[5] A different math test was given to children in each grade level in school. Children in Grade 2 were administered tests consisting of 26 items, while children in Grade 3 and above were administered tests consisting of 34 items.

no impact of SSP. There are three reasons why program impacts might differ across these parental and child report measures. First, the sample sizes for the child report measures are much smaller than those for the parental report measures, limiting the power to detect significant program impacts; program impacts of the same magnitude would be less likely to be significant in the child report than the parent report measures. Second, parents and children may have different perceptions of children's functioning in school. Third, because only children ages 10–11 were assessed on the child report measures, program impacts may be less strong for older children than for younger children within the range of ages 6–11.

The findings suggest that the third explanation is the most plausible. The program impact on average achievement in the child report measure is smaller than that in the parental report measure; the size of the sample therefore appears not to be the issue. Also, the consistency in findings across the parental report and cognitive test outcomes suggests that program impacts may not be biased by parental perceptions of children's functioning. Finally, analyses were conducted comparing impacts on the parental report measures for the youngest children in this cohort (ages 6–8) with those for older children in this cohort (ages 9–11). The findings suggest that program impacts are indeed strongest for the youngest children (not shown in the table). Program group parents of children ages 6–8 reported higher average academic achievement for their children than did corresponding control group parents. There were, however, no significant program group impacts on parental report measures of academic functioning for children ages 9–11.

Given that seven cognitive/academic measures were examined and only two showed significant impacts, how much confidence can be placed in the conclusion that SSP affected children's cognitive outcomes? First, correspondence in impacts between independent means of assessing child functioning lends greater credibility to the findings. The consistency across the math test and the parental report measures lends greater support to the hypothesis that SSP increased children's cognitive and academic outcomes. Also, the similarity in the direction of effects across all the cognitive test and parental report achievement measures is unlikely to be due to chance. The lack of consistency of the parental report and math measures with the child report measures seems to be due to the age of children assessed rather than to differences in impacts across different assessments. Second, greater weight should be given to the cognitive test scores than to either the parental or the child report measures, because they were scored blind to program group status. Since parents know their own assignment to the program or control group, one might question whether children were really performing better or whether parents in the program group simply reported them as doing so (either because the program made them perceive their children as doing better or because they wanted to make the program appear more effective). Therefore, the positive program impact on the math skills test should be regarded as a better test of the program impact than the parental or child report measures. In sum, there is some evidence that SSP had a small positive impact on children's general cognitive/academic functioning.

Behaviour and Emotional Well-Being

The middle panel of Table 3.2 presents the data for children's behaviour outcomes. Parental report measures included data on children's behaviour problems and positive social behaviour (measured on a scale from 1 to 3). As with the youngest children, measures of behaviour problems for this middle cohort included items tapping children's hyperactivity, conduct problems, and internalizing (anxiety and depression) behaviour. Most of the items were the same as those for the younger cohort of children. For this age group, however, children's reports of their own behaviour were provided as well as parents' own reports. (Greater detail regarding these measures is provided in the text box on p. 44). As in the findings for the younger children, parents in the control group reported higher levels of positive social behaviour than of behaviour problems, giving their 6- to 11-year-olds an average score of 2.59 out of a possible 3 for positive social behaviour and only an average of 1.43 out of a possible 3 for behaviour problems. Parents also reported on contacts from their children's schools regarding behaviour problems, on a scale that ranged from 1 (for one contact or none) to 3 (four or more contacts). In terms of these school behaviour problems, parents reported very few contacts; the average was close to the lowest possible score of 1.

For all the parental report measures of children's behaviour, no program impacts were found. Parents in the program and control groups reported similar levels of child functioning in terms of behaviour problems and positive social behaviour, and they were equally likely to be contacted by the school regarding children's behaviour problems at school.

Children's own reports of their behaviour (for children ages 10–11) are consistent with these results on parental reports. No program impacts were found for children's own reports of their behaviour problems or of their positive social behaviour. Also, there were no program impacts on 10- to 11-year-old children's reports of delinquency, smoking, drinking, or drug use (not shown in the table).

Health and Safety

In general, parents in the control group in this sample reported relatively high levels of health (an average score of 4 out of a possible 5), as the third panel of Table 3.2 shows. Children's own reports were consistent with, but slightly lower than, parental report measures. Both parental and child report measures are based on average scores across four questions regarding children's general health, with high scores indicating better health. Items tapped the extent to which children were in good health and the frequency that children were sick.

While reports of general health were positive in the control group, there were also high levels of long-term health problems, with over one-third of the children in the group being reported as having been diagnosed with a long-term health problem that limited their ability to participate in some activities. The most common types of health problems mentioned were allergies, asthma, bronchitis, learning problems, and emotional problems. Also, almost 12 percent of the children in the control group were reported to have had a serious injury over the last year.

Parental reports (but not child reports) suggested favourable program impacts in the area of child health. According to parental reports, children in the program group were in significantly better health than children in the control group. Also, there was a five-

percentage-point reduction in the proportion of children having any long-term health problems. As with the cognitive outcomes, the consistency across these two measures of children's health functioning supports the conclusion that SSP improved children's health functioning. Again, however, the effects of SSP are small (around .10 effect size).

As was done with the academic achievement measures, the findings for the younger and older children within the 6–11 cohort were analyzed separately to determine whether the effects were stronger for younger children (ages 6–8) than for older children (ages 9–11). Such a difference in impacts could explain the lack of correspondence between the parent and child assessments of children's health. As with the academic outcomes, significant program impacts on children's health were found only for the younger and not for the older children in this cohort, suggesting that the lack of correspondence between parental and child report measures is due to the different ages assessed and not to any disagreement between parents and children regarding children's health functioning.

The research findings just described lend credibility to the hypothesis that SSP improved children's health functioning. Without an independent measure of children's health (for example, from a health professional), however, the findings on the parental report measures cannot be verified.

Why might SSP affect children's health, particularly children's long-term health problems? While problems like kidney and heart problems are unlikely to be affected by increases in maternal employment and family income due to SSP, benefits may occur for problems like asthma, bronchitis, and learning and emotional problems which can have roots in home environments. The research on the effects of family income on child health suggests, however, that the strength of the relation between family income and child health outcomes is much less than between family income and children's cognitive outcomes.[6]

Discussion

The finding that SSP had small positive impacts on children's cognitive and health outcomes but not on behavioural outcomes for children in the middle cohort[7] is consistent with research on the association between poverty and children's outcomes, and suggests a stronger association between poverty and children's cognitive outcomes as compared with children's behavioural outcomes.[8] In addition, the more pronounced impacts for the youngest children in this cohort, who were ages 3–5 at random assignment, are consistent with research suggesting that income may play a stronger role in predicting children's outcomes for preschool than for older school-age children.[9] Although no program impacts were found for the younger cohort in the sample (ages 3–5 at the 36-month follow-up), the findings for the youngest children in the middle cohort suggest that SSP may have modest positive impacts on children, at least in selected areas of functioning. It is worth keeping in mind that the positive impacts of SSP likely occurred for the one-third of the program group that took

[6]Duncan and Brooks-Gunn, 1997.

[7]When examined separately by child gender, the impacts of SSP on children's outcomes for children in the middle cohort were much more pronounced for girls than for boys. However, the differences in program impacts between boys and girls were generally insignificant. Also, there were generally no differences in program impacts by province. The results of these analyses are presented in Appendix C.

[8]Duncan and Brooks-Gunn, 1997.

[9]Ibid.

up the supplement and yet were large enough to produce significant overall impacts when all families were examined together.

The impacts on children in the middle cohort are small and are not prevalent across many measures of children's functioning. Therefore, one interpretation of the findings is that SSP is having very little impact on children's functioning. More definitive conclusions about the effects of a program like SSP will depend on comparisons of the findings in this study with those in several related studies that are currently under way. Moreover, follow-up of these children at 54 months after random assignment will indicate whether these small positive impacts can persist into later childhood. Such findings will be examined in a future report.

IMPACTS ON CHILD OUTCOMES FOR THE OLDER COHORT

Program impacts on children's cognitive and academic functioning, behaviour and emotional well-being, and health outcomes are shown in Table 3.3. It is important to remember that in this cohort the response rates for the children's own reports of their functioning were very low; therefore, the same findings might not emerge if a larger proportion of the eligible sample were analyzed.

Table 3.3: SSP Impacts on Child Outcomes for the Older Cohort at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Math score[a] (ages 12-14)	0.45	0.46	-0.01	0.746	-0.03
Sample size	280	281			
Parental report					
Average achievement[b]	3.43	3.54	-0.11 *	0.073	-0.11
Below-average, any subject (%)	32.61	32.39	0.22	0.938	0.00
Any grade repeated (%)	37.00	35.66	1.34	0.602	0.03
Dropped out of school (ages15-18) (%)	11.25	8.71	2.54	0.253	0.09
Sample size	726	673			
Adolescent report					
Average achievement[b]	3.50	3.57	-0.07	0.156	-0.09
Below-average, any subject (%)	18.91	14.26	4.65 **	0.049	0.13
Sample size	512	470			
Behaviour and emotional well-being					
Parental report					
School behaviour problems[c]	1.40	1.34	0.06 *	0.095	0.09
Sample size	740	677			
Adolescent report					
Frequency of delinquent activity (ages 12-14)[d]	1.35	1.38	-0.03	0.459	-0.06
Frequency of delinquent activity (ages 15-18)[d]	1.40	1.34	0.07 **	0.025	0.21
Any smoking (%)	26.52	22.13	4.39 *	0.096	0.11
Drinks once a week or more (%)	8.91	4.65	4.27 ***	0.005	0.20
Any drug use (%)	18.63	14.34	4.29 *	0.057	0.12
At risk for depression (ages 15-18) (%)	45.74	47.14	-1.39	0.754	-0.03
Sample size	568	509			

(continued)

Table 3.3: SSP Impacts on Child Outcomes for the Older Cohort at the 36-Month Follow-Up (Cont'd)

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Health					
Parental report					
Average health[e]	4.10	4.13	-0.04	0.475	-0.05
Any long-term problems (%)	38.99	38.11	0.88	0.763	0.02
Sample size	576	530			
Adolescent report					
Average health[e]	3.83	3.84	-0.01	0.765	-0.02
Sample size	553	493			

Sources: Calculations from the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[c]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[d]Frequency of delinquent activity is rated on a scale from 1 ("never") to 4 ("five or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Cognitive Performance and Academic Achievement

The first row of the table presents children's performance on the math skills test, for children ages 12–14. In the control group, children scored on average .45, indicating that they answered 45 percent of the items on the test correctly. This score is lower than the average score of children in the middle cohort. The data suggest that there were no program impacts on children's scores on the math skills test for children in this older cohort.

As with the younger groups of children, parents rated their children's academic achievement on a scale from 1 to 5, with high scores indicating higher achievement. This item is based on an average score across parental ratings of children's performance in math, reading, and writing for children ages 12–14 and math, science, and writing for children ages 15–18. Children in the older cohort in the control group were reported by parents to be performing at a level of 3.5 on average. Also, one-third of the control group children in this age range were reported to be doing very poorly in school (below an average score of 3). In general, the older children seemed to be performing worse in school than the middle cohort, among whom one-fourth of the children were reported to be doing very poorly in school. Average scores reported by children (based on children's ratings ranging from 1 to 5 in math, science, and English) were consistent with maternal reports, but fewer children reported doing poorly in any one subject (below an average score of 3) than the parental report measures indicated.

Unlike the findings for the math skills test, where there was no significant difference between program and control groups, parental reports suggest that SSP may be affecting children's academic achievement. According to the parental reports, children in this cohort were performing worse in school on average than corresponding children in the control group. Analyses were conducted separately for the 12- to 14-year-olds and for the 15- to 18-year-olds, to see if there were any age differences within this older cohort that might explain the lack of correspondence between the parental report and achievement test measures. These analyses suggested that the negative program effects on parental reports of achievement were significant for the 12- to 14-year-olds and not significant for the 15- to 18-year-olds. Since the 12- to 14-year-olds were the children who took the math tests, the lack of correspondence between the math test and the parental report measures seems not to be due to differences in the ages of children assessed. For the 12- to 14-year-olds, program group children were rated by parents as doing significantly less well in math courses. For the 15- to 18-year-olds, program impacts were negative for all three academic areas considered (math, science, and writing), but none was statistically significant (not shown in the table).

There was no program impact on parental reports of grade repetition, with approximately one-third of children in this age range ever repeating a grade level in school. Only parents of children ages 15–18 were asked about children's school dropout. There was no program impact on school dropout, with about nine percent of children in the control group dropped out of school at the 36-month follow-up. These findings on grade repetition and school dropout suggest that SSP did not have an effect on children's major difficulties in school.

Program impacts on children's own reports of their academic functioning were consistent with findings in the parental report measures. Children in the program group were almost five percentage points more likely to report doing below average in any subject than children in the control group. Program impacts on average achievement were in the same direction but not significant.

Again, how confident can one be in the findings on children's achievement? The effects on achievement measures are small, but there are program impacts on both parental and adolescent report measures. Effects are slightly stronger for the child support measures. While children may be more accurate than parents in assessments of their functioning, the low response rates on the child surveys make the conclusions based on the child report measures more tenuous. The scores on the math test do not independently verify the parental and adolescent report measures. Again, the test scores should be given greater weight than the parental and adolescent report measures. Since test scores are available only for children ages 12–14, the program impact on the full sample of children cannot be known on this better cognitive measure. The fact that parental reports of a negative impact on achievement are strongest for the children in this 12–14 age group, however, suggests that it is not the age of children assessed, but the nature of the assessment, that is accounting for the differential findings on children's achievement. In sum, the findings suggest that the program may be negatively affecting older children's achievement in school, but the effects are small and are not evident in independent measures of children's cognitive functioning.

Behaviour and Emotional Well-Being

The second panel of Table 3.3 presents measures of children's behaviour and emotional well-being. Parents in the control group reported that they had been contacted about their children's behaviour problems in school in the past year on average between never or one time (a score of 1) and two or three times (a score of 2); the scale used for this measure ranged from 1 to 3 (four or more times). In their own reports, 22 percent of the children reported smoking currently, 14 percent reported having tried drugs, and five percent reported using alcohol at least weekly in the last six months. Delinquent activity was scored on a 1–4 scale, such that an average of 1.3 to 1.4 falls between "never" and "once or twice." A high rate of depression was found among adolescents in this sample. On the basis of the high frequency of depressive symptoms reported by the children, 47 percent of children in the control group were judged to be at risk for depression (see the accompanying text boxes for further information regarding the delinquency and depression scales).

Measure of Delinquent Activity

Children ages 10–18 were asked about the frequency of a number of delinquent acts. Most items focussed on the last six months. Example items included "Did you skip a day of school without permission?" "Did you get drunk?" and "Did you run away from home?" Children ages 10–14 were asked about only seven items, while children ages 15–18 were asked about a wider range of delinquent activity, including theft, starting fires, and using weapons. Each item was scored on a scale of 1 (never) to 4 (five or more times). The average frequency across seven items for the 10- to 14-year-olds and 13 items for the 15- to 18-year-olds was computed for each child.

For many of the measures of children's behaviour, children in the program group seemed to be faring more poorly than children in the control group. Program group parents reported having been contacted significantly more often regarding children's behaviour problems in school. Analyses of the child report measures are consistent with this finding. Children ages 15–18 in the program group reported a greater frequency of delinquent activity than corresponding children in the control group (although this was not the case for children ages 12–14). While this effect was small, it was larger than the other impacts for children reported thus far, with an effect size of .21. Such an effect indicates that these children moved from just below the 60th percentile on this measure to between the 65th and 70th percentiles. A more detailed examination of the delinquent activity, based on an analysis of a summary score of two items in the delinquency scale, suggests that the higher scores of the program group children were due to such behaviour as staying out late or staying out all night without parental permission, rather than the more serious forms of delinquency reported, which included skipping school, beating up other children, engaging in illegal activity like stealing and carrying weapons, and problems with the police (not shown in the table). Greater detail on these subscales is presented in Appendix B.

A larger proportion of program group children than control group children reported engaging in substance abuse. While 14 percent of children in the control group reported any drug use, almost 19 percent of program group members reported such drug use. For 15- to 18-year-olds, the type of drug use could be examined. This analysis suggested that the program impact was confined to use of marijuana, rather than drugs like cocaine, LSD, PCP, and heroin. The magnitude of the program impact on smoking was comparable (about four percentage points). Also, children in the program group reported more frequent alcohol use than children in the control group, with a greater proportion of program than control group children having more than one drink per week. While almost nine percent of children in the program group reported drinking at least once a week, fewer than five percent of children in the control group reported such drinking. While significant, these program impacts on children's drinking, smoking, and drug use are small in terms of effect sizes. For example, a five-percentage-point increase in one of these measures would mean that 50 more children in the program group (out of the 1,000 children analyzed) than in the control group engaged in that activity. There were no program impacts on children's depression risk.

It is important to recall that the response rates on the adolescent measures were low, and therefore the sample analyzed may be unrepresentative of the total sample. It is unclear whether the same results would emerge if all children had responded to the survey. The lack of bias found in the response bias analysis (discussed in greater detail in Chapter 2 and Appendix A), however, gives credibility to the analyses conducted. These indicated that it is not likely that the effects on behaviour are being underestimated. (Recall that the only significant difference in impacts between the fielded sample and the responding sample indicated that a negative program impact on behaviour problems in school was being underestimated.)

Two other pieces of evidence lend greater confidence to the results. First, the correspondence between child and parent reports of children's behaviour (although parents reported on only a single measure, children's behaviour in school) gives greater credibility to the child report measures. Second, the consistency in findings (in direction and significance) across the child report measures lends greater weight to the hypothesis that SSP has unfavourable impacts on older children's behaviour.

How concerned should one be about these unfavourable program impacts on children's behaviour? The effects are small in magnitude. The findings suggest program group children may be engaging in more experimentation with drugs and alcohol, and are staying out late but that they are not involved in theft or aggressive activity and, importantly, are not more involved with police. These results do suggest some, but not undue, concern about the effects of SSP for older children.

Health

In general, both parents and adolescents reported that the older cohort was in relatively good health, with an average close to 4 on a 5-point scale. Adolescents reported slightly less positive health outcomes than their parents assessed, perhaps because they did not always communicate minor illnesses to their parents.

Relatively high rates of health problems were found for control group children in this older cohort, however. For example, 38 percent of control group children were reported by parents to have long-term health problems (including asthma, bronchitis, and learning and

emotional problems). No program impacts on children's health outcomes were found on either parent or child reports, nor were there program impacts on child reports of average health.

Measure of Depression

Children ages 15–18 were asked about the number of days in the past week they had experienced each of 10 depressive symptoms.* These items were a subset of the Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977), which has been used extensively in previous studies. Items were scored on a scale ranging from 0 ("rarely or never") to 3 ("5–7 days"). Total scores represent the sum of scores across the individual items. Previous work identified a threshold (a score of 16 out of 60) at or above which scores may be indicative of clinical depression. A corresponding threshold (a score of 8 out of 30) was identified for this smaller subset of items; children who scored above this cut-off were scored as at risk of depression. Technical details about this scale are presented in Appendix B.

*An additional item was asked of children but was not included in the scale. The item, "Everything I did was an effort," was not answered in accordance with the other items. It was suspected that some children interpreted this item to mean "I put everything into everything I do" and thus scored it differently than would be expected. See Appendix B for details.

Discussion

These findings suggest that SSP had some small but unfavourable impacts on the oldest children's functioning.[10] Children in the program group who were in adolescence at the 36-month follow-up were performing worse in school than their counterparts in the control group. The findings on academic achievement were consistent across parental and child report measures but were not confirmed via the math test. The most consistent findings for children seem to be in the area of children's behaviour, with children in the program group engaging in minor delinquent activity more frequently than children in the control group. It is important to note, however, that these effects are small and do not reflect major delinquent activity.

Given the large number of tests performed, and the relatively small magnitude of the effects, it might be concluded that there are very few program impacts for this older cohort of children. Similar findings in related studies currently under way would lend greater credibility to these findings.

As with the impacts on the middle cohort of children, it is possible that these small effects overall may be masking more pronounced effects for the children in the families that took up the supplement. If the program impact is confined to this one-third of the program group, it must be large enough to overcome the lack of effects in the rest of the program group.

[10]Program impacts on children's outcomes for this older cohort of children were also examined by child gender and by province. Program impacts appear to be slightly larger for girls than for boys, but not significantly so. Program impacts generally did not differ by province. The results of these analyses are presented in Appendix C.

Why might SSP affect older children in ways that hurt their achievement and increase minor delinquent behaviour? Research on the effects of poverty on children suggest that income level in early childhood, rather than in adolescence, is associated with adolescent outcomes.[11] Therefore, income increases in adolescence may have the smallest influence on children's outcomes relative to income increases for younger children. In addition, there may be difficulties associated with the transition to adolescence, particularly in high-risk communities. Adult supervision may be especially important during this period to protect children from the dangers associated with peer contact, particularly high-risk behaviour.[12] The next chapter will examine the extent to which the increased employment for mothers in SSP led them to seek supervised programs for their children. While the increased income provided under SSP would have provided some opportunities to invest in children's activities, older children would not legally need care after school hours, when parents may still be working.

DIFFERENCES IN IMPACTS ACROSS THE THREE COHORTS

Table 3.4 shows the effect sizes of the impacts on child outcomes for the three age cohorts of children. There were some important differences in the patterns of effects for the three cohorts of children in the sample. SSP had no effect on the younger children in the sample. For the middle cohort of children, there were some small positive effects for children's cognitive/academic and health outcomes, but no program impacts on children's behaviour and emotional well-being. For the older cohort, there was some evidence that children in the program group may be performing slightly less well in school and may be slightly more likely to engage in problem behaviours than comparison children in the control group.

As indicated in Chapter 2, the three age cohorts differ markedly in their baseline characteristics. Some of these differences are demographic (for example, younger children tend to come from younger parents and to have fewer siblings); some reflect different family experiences (for example, younger children are more likely to come from never-married parents as opposed to divorced parents); and some suggest that older children come from more "at risk" families (for example, older children are more likely to have parents with a longer history of IA receipt and with physical and emotional problems). These issues raise the question whether the differences in program impacts are due to differences in children's age or differences in these baseline characteristics. For example, one might ask whether the unfavourable program impacts for the older children are due to a greater vulnerability during adolescence or due to the fact that they come from the highest risk families.

[11]Duncan and Brooks-Gunn, 1997.
[12]Posner and Vandell, 1999.

Table 3.4: SSP Summary of Impacts on Child Outcomes at the 36-Month Follow-Up, in Effect Sizes, by Child Age

Outcome	Younger Cohort[a]	Middle Cohort[b]	Older Cohort[c]
Cognitive/academic functioning			
Standardized tests			
PPVT-R score[d] (ages 4-7)	0.05	0.13	
Sample size	828	585	
Math score (ages 7-14)		0.14 **	-0.03
Sample size		1,321	561
Parental report (ages 6-18)			
Average achievement		0.11 **	-0.11 *
Below-average, any subject		-0.06	0.00
Any grade repeated		0.05	0.03
Dropped out of school (ages 15-18)			0.09
Sample size		1,997	1,399
Child and adolescent report (ages10-18)			
Average achievement		0.05	-0.09
Below-average, any subject		-0.06	0.13 **
Sample size		465	982
Behaviour and emotional well-being			
Parental report			
Behaviour problems (ages 3-11)	0.01	-0.03	
Positive social behaviour (ages 3-11)	-0.06	-0.02	
School behaviour problems (ages 6-18)		-0.01	0.09 *
Sample size	1,032	2,158	1,417
Child and adolescent report			
Behaviour problems (ages 10-11)		0.03	
Positive social behaviour (ages 10-11)		0.14	
Frequency of delinquent activity (ages 12-14)			-0.06
Frequency of delinquent activity (ages 15-18)			0.21 **
Any smoking (ages 12-18)			0.11 *
Drinks once a week or more (ages 12-18)			0.20 ***
Any drug use (ages 12-18)			0.12 *
At risk for depression (ages 15-18)			-0.03
Sample size		474	1,077
Health and safety			
Parental report			
Average health (ages 3-18)	-0.05	0.11 **	-0.05
Any long-term problems (ages 3-18)	-0.04	-0.09 **	0.02
Any injuries (ages 3-11)	-0.04	0.01	
Sample size	1,043	2,150	1,106
Child and adolescent report			
Average health (ages 10-18)		0.01	-0.02
Sample size		452	1,046

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Only children who were in the home at random assignment and at the 36-month follow-up period were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Younger cohort children were ages 3–5 at the 36-month follow-up.

[b]Middle cohort children were ages 6–11 at the 36-month follow-up.

[c]Older cohort children were ages 12–18 at the 36-month follow-up.

[d]The PPVT-R is a test of children's understanding of words.

In order to address this question, multivariate analyses were conducted. In these analyses, summary outcome measures were created for each area of child functioning (cognitive/academic, behaviour/emotional well-being, and health). Standard scores were created for each measure, and average scores were computed across the measures assessed for any individual child. For example, if a child had both a math test score and a parental report of her achievement, her summary score consisted of the average of these two standardized scores. If a child also had reported on his own functioning (in the child survey), this score was also included in his average score. Greater detail regarding this analysis is presented in Appendix D.

Using these summary outcome variables, analyses were conducted to examine whether any differences in baseline characteristics in program impacts accounted for the differences in impacts among the age groups. There were eight major baseline characteristics that differed markedly across the three age cohorts: maternal age, number of children, marital status, number of years ever employed, IA history, physical problems, emotional problems, and depression (all measured at baseline).

The results of this analysis suggest that developmental differences and not differences in family background characteristics accounted for the differences in impacts among the age groups. More specifically, there were significant differences in program impacts between the middle and the oldest cohorts in children's academic/cognitive and behaviour/emotional well-being outcomes that were not accounted for by the fact that older children have older mothers, come from larger families, and have parents with a longer history of IA receipt. The differences between the impacts for the middle and older cohorts appear to be driven by the very different responses of these children to similar changes in parental behaviour brought about by SSP.

IMPACTS ON CHILD OUTCOMES FOR SUBGROUPS OF FAMILIES

As indicated in Chapter 2, there is a fair amount of diversity among the families in the child report sample within each of the age cohorts. Some families had been on welfare for an extended period of time, and the parents may have had limited skills to make work an attractive alternative to Income Assistance. These parents may have been encouraged to work with the offer of the earnings supplement. For other families, significant barriers to employment, like physical problems or depression, may have kept the parents from working even with the offer of SSP. Finally, there is a small group of families who are relatively less at risk, in which the parents might have gotten full-time work even in the absence of SSP. For these families, the SSP supplement provided a large income gain but may have had little effect on their transition from Income Assistance to employment.

Analyses were conducted to examine the extent to which parental background characteristics measured at baseline (marital status, parental age, length of time on Income Assistance, high school diploma, presence of a physical problem, number of children, depression risk) differentiated the program impacts on children's outcomes. Whereas in the previous section these differences were examined *across* age cohorts, in this analysis these differences are examined *within* each of the age cohorts. In general, impacts did not differ by subgroup. There was no clear pattern of effects to suggest that program impacts were

concentrated among either the more or the less disadvantaged families in any of the age groups.

CONCLUSION

The findings suggest that SSP had very different impacts on children depending on their age. For the younger cohort, no program impacts were found. Given how young these children were at the start of the program, such a finding is reassuring. For the middle and older cohorts, there is some suggestion that SSP influenced children's outcomes, perhaps benefiting children in the middle cohort and negatively affecting the older cohort of children. Another reading of the tables, however, might suggest that there are very few effects of SSP for children's outcomes. While the consistent pattern of effects within age groups and domains of child functioning lends credence to the results, further research currently being conducted will be critical to provide more definite conclusions about how a program like SSP may affect children.

Fortunately, there are several opportunities for such comparison. First, the parents of the children in this sample will be interviewed at 54 months after random assignment (18 months after the surveys presented in this report were conducted) about their children's behaviour and functioning. That study will allow an opportunity to examine whether the findings on the middle and older cohorts of children persist. Second, a companion study to the one reported here was conducted with parents who were applicants to the IA system.[13] As in the study discussed in this report, program group members were offered the earnings supplement if they engaged in full-time work. These parents, however, were told that they would not qualify for the earnings supplement until they had received Income Assistance for one year. Parents and children in this sample are being interviewed 72 months after random assignment (or 60 months after they would have been eligible for the SSP earnings supplement). These data will provide an opportunity to investigate whether findings consistent with those reported here emerge in a similar study (although after the end of the period in which parents could receive the supplement). Third, other experimental evaluations of programs that offer financial incentives are being conducted in the United States and can provide further information about how programs that increase parental employment and family income affect children. In particular, the Minnesota Family Investment Program is examining the effects on children of enhanced earnings disregards in the context of a mandatory employment program.[14] Together these studies will help to provide evidence regarding the robustness of the findings reported here.

Even if the effects are robust, how important are such small program impacts for children's future well-being? School achievement and cognitive performance have been found to be important predictors of later adolescent achievement and adult employment, but general health has not been shown to be associated with long-term functioning.[15] These findings suggest that the benefits of SSP to the cognitive and academic — but not the health — outcomes of the middle cohort of children may have lasting consequences. While

[13]This study is known as the applicant study. See Michalopoulos, Robins, and Card, 1999.
[14]Gennetian and Miller, 2000.
[15]Caspi et al., 1998, and Mussen et al., 1990.

these effects are small overall, they may be confined to the small proportion of children in families who took up the supplement and, therefore, may have important implications for children's development.

While delinquency and conduct problems in adolescence have been found to be associated with academic problems and unemployment,[16] it is unclear whether the increases in minor delinquent activity may affect children's future functioning. Fortunately for children's long-term outcomes, there were no program impacts on adolescents' major delinquent activity. The transition to adolescence can be very difficult for children in high-risk families, however, and the findings suggest that SSP may not aid children in making this transition smoothly.

The next chapter explores how SSP may have affected other aspects of family functioning beyond children's outcomes. These analyses also provide some hypotheses about *how* SSP might have affected children. That is, they may suggest some of the processes by which children may have been influenced by SSP.

[16]Caspi et al., 1998.

Chapter 4:
Impacts of SSP on Family Functioning, Child Care, School and Residential Changes, and Family Structure

In this chapter, the impacts of SSP on parental functioning, parenting, child care, school and residential changes, and family structure are discussed. These findings allow for a better and more detailed understanding of the ways in which SSP affected the entire family. Moreover, because these impacts may be important intermediate outcomes between SSP's impact on its intended targets (employment and income) and children's outcomes, as the literature described in Chapter 1 suggests, they may help us to better understand the possible pathways by which SSP may have affected children.

The chapter addresses the following questions:

- How does SSP affect parental functioning and parenting behaviour?
- How does SSP affect the type and amount of child care children experience? How does it affect the activities in which they participate? For the older children, how does it affect their household responsibilities and their own employment?
- What is the impact of SSP on changes in children's school and residence? Does SSP encourage families to move and to change the schools children are enrolled in?
- What is the impact of SSP on parental marital status? Does SSP have any effect on children's contact with their biological father?

Chapter 2 shows that SSP's impact varied by age of child. These findings raise two additional questions:

- What were the pathways by which each cohort of children was influenced by SSP? Did the program affect the family and child care environments of children in ways that might have led to the impacts of the program observed on children's outcomes?
- Why do children of different age cohorts have such different program impacts? Were the pathways by which the program affected children different for the three age groups? Or do children of different cohorts simply respond differently to similar family changes?

The theoretical work reviewed in Chapter 1 suggests that there are two primary pathways by which children may be affected by changes in maternal employment and family income: through changes in parental socialization and through changes in resources. Changes in parental socialization include changes to parental functioning and parenting behaviour. Changes in resources include the material resources parents provide for their children and the environments in which parents place their children (like child care, schools, and neighbourhoods). The intermediate outcomes considered in this chapter include assessments of both of these pathways. They may suggest some of the ways SSP may have affected children.

The chapter is organized as follows: In the first section, the impact of SSP on the intermediate outcomes considered in this chapter are presented *separately* for each age group. Then, comparisons across the age groups are discussed to determine whether any differences help to explain the differential program impacts for the three age groups of children.

FINDINGS IN BRIEF

- **SSP had almost no effect on parenting behaviour and parental functioning for families with the younger, middle, and older cohorts of children**. Any effects of SSP on children do not appear to be related to changes in family socialization patterns.
- **SSP increased child care participation for the younger cohort of children**. For younger children, SSP decreased the amount of time parents reported spending with their children. Also, SSP increased the use of both formal and informal care arrangements.
- **For families with children in the middle cohort, SSP increased child care and children's participation in after-school activities but the effects were smaller than for families with younger children**. Parents in the program group reported more informal child care for their children than parents in the control group. Program group parents also reported that their children were spending more time in after-school activities than their control group counterparts.
- **Program group children in the middle cohort were more likely than children in the control group to change schools and residences, and were more likely to visit with their second parent**. These program impacts, however, were small.
- **For the oldest cohort of children, SSP had no impacts on children's child care or after-school activities but did increase children's engagement in chores and employment**. Given that SSP significantly increased parents' full-time employment, it is notable that there is no corresponding increase in older children's after-school arrangements. Adolescents in the program group appear to be taking on greater responsibilities as their parents engage in more employment, rather than being cared for by someone else. They reported doing more household chores, and they were more likely to engage in more than 20 hours per week of employment.
- **SSP impacts on family structure for families with the oldest children differed by province**. SSP significantly increased marriage and second-parent contact for children in New Brunswick and significantly decreased marriage and second-parent contact for children in British Columbia. The reason for these divergent findings is not clear, but both suggest greater family transitions for families with older children.

IMPACTS FOR FAMILIES OF THE YOUNGER COHORT OF CHILDREN

In this section, the impacts of SSP on family functioning, child care, residential changes, and family structure are examined for families with younger children. These may help to explain how families with young children fared in the context of SSP. One might hypothesize that full-time employment is more stressful for mothers with younger children, as mothers may be more ambivalent about leaving their younger children and have greater difficulty in managing work and family demands with younger children at home. Also, one might assume that parents increased their use of child care as they moved into full-time employment, since younger children would not yet be in school settings.

In the last chapter, an examination of the impact of SSP on children's cognitive performance, behaviour and emotional well-being, and health showed no program impacts for the youngest cohort of children. In the first chapter, however, SSP was shown to have increased both parental employment and family income for parents with young children. Why didn't these impacts translate into changes in children's functioning? This section takes a look at impacts on intermediate outcomes as a step in developing hypotheses about why SSP did not affect the youngest children in the sample. More specifically, it examines how SSP affected the child care and parenting young children experienced.

Impacts on Family Functioning

Table 4.1 presents information on parental functioning and parenting behaviour that might indicate whether SSP had any impact on the socialization patterns of families with younger children. Measures of parental functioning include parental health, alcohol use, parenting problems, and depression. Parental health was measured with a single item assessing general health. In the control group, almost 13 percent of parents reported being in below-average health. There was no program impact on parental reports of health using this measure.

Parents also reported on the number of times over the past year that they had five or more drinks in a row. Parents in the control group reported having this many or more drinks just over three times on average. SSP reduced the number of times parents used alcohol at this level by one time on average, a small program impact (with an effect size of .16). While this favourable program impact is encouraging, there were no other corresponding impacts on parental functioning for parents of this age group. There were no program impacts on parental reports of parenting problems or depression risk. Parenting problems were measured on a scale of 1 to 5, with 5 indicating that parents reported a great deal of difficulty caring for their children. Approximately one-third of parents in both program and control groups reported levels of depressive symptoms that put them at risk for clinical depression. (See the text box on the following page for a more detailed description of the measure of parental depression.)

Table 4.1: SSP Impacts on Family Functioning for Families With Younger Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Parental functioning and parenting behaviour					
Parental functioning					
Below-average health (%)	11.95	12.80	-0.84	0.702	-0.03
High alcohol use (times in last year)	2.23	3.18	-0.95 ***	0.009	-0.16
Parenting problems[a]	1.88	1.97	-0.09	0.137	-0.10
At risk for depression (%)	33.18	36.76	-3.58	0.264	-0.07
Sample size	435	461			
Parenting behaviour (parental report)[b]					
Warm parenting[c]	3.94	4.00	-0.06 *	0.059	-0.12
Negative parenting[c]	2.14	2.15	-0.01	0.717	-0.02
Consistent discipline[c]	3.88	3.85	0.03	0.511	0.04
Sample size	497	527			
Parental time with all children[d]	4.30	4.44	-0.14 *	0.063	-0.13
Sample size	435	458			

Sources: Calculations from the 36-month follow-up parent survey.

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Parenting problems are rated on a scale of 1 to 5, with 5 indicating great difficulty caring for children.

[b]Parenting behaviour was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[c]These items are rated on a scale of 1 ("never") to 5 ("many times each day").

[d]Parental time with all children is rated on a scale of 1 ("less than 10 hours") to 5 ("more than 40 hours").

Measure of Depression Risk

Parents were asked about the number of days in the past week they had experienced each of 11 depressive symptoms, a subset of the widely used Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977). Items were scored on a scale ranging from 0 ("rarely or never") to 3 ("five to seven days"). Total scores represent the sum of scores across the individual items. Previous work has identified a threshold (of 16 out of 60) for determining whether a person is at risk for depression. A corresponding threshold of 9 out of 33 was computed for this reduced set of items, at or above which parents were scored as being at risk for depression. Technical details about this scale are presented in Appendix B.

The next three rows of the table show average scores in the program and control groups on three parenting scales: warm parenting, negative parenting, and consistent discipline. For each of these scales, the score is averaged across multiple items of parenting behaviours, which are rated from 1 to 5; more information on the items in these scales is presented in the following text box. In both the program and the control groups, parents reported higher levels of warmth and consistent discipline than negative parenting behaviours.

Measures of Warm and Negative Parenting and Consistent Discipline

Parents of children ages 3–14 were asked about their parenting behaviour with each of their children. Items were answered on a 5-point scale ranging from 1 ("never") to 5 ("many times each day"), or from 1 ("never") to 5 ("all of the time"). The technical details of these scales are presented in Appendix B.

The items tapped three distinct subscales:

Warm parenting. Parents of children ages 3–14 were asked questions about parenting behaviour that assessed the warmth they expressed to their children. Items included "How often do you praise your child?" and "How often do you and your child laugh together?" All items were re-scored if necessary so that high scores indicated high warmth, and an average score was computed across the items included in the scale.

Negative parenting. Parents of children ages 3–14 were asked about negative parenting behaviours as well. Examples of items on this scale are: "How often do you tell him that he is not as good as others?" and "Of all the times that you talk to her about her behaviour, what proportion is disapproval?" Items were re-scored, if necessary, such that high scores indicated more negative parenting, and, as with warm parenting, an average score was computed across the items included in the scale.

Consistent discipline. Parents of children ages 3–14 were also asked about their disciplinary practices. Items focussed on how consistently the parents carried out disciplinary actions. For example, items on this scale included "When you give her a command to do something, what proportion of the time do you make sure she does it?" and "If you tell him that he will be punished if he doesn't stop doing something and he keeps doing it, how often will you punish him?" Items were re-scored, if necessary, such that high scores indicated consistent discipline, and an average score was computed.

SSP impacts on parenting were rare. Program group parents reported less warm parenting than control group parents but this program impact was small. On measures of negative parenting and consistent discipline, program and control groups did not differ. In Chapter 1, two pathways were identified through which SSP's effects on employment and income may affect children — through resources and socialization. Parental functioning and parental behaviour are both measures of children's socialization. The findings presented here suggest that there is no clear pattern of favourable or unfavourable impacts of SSP on children's socialization for children in the youngest age group.

The final row of the table presents information on parental time for parents of young children. Parents were asked how many hours per week they spent caring for all their children (not including time when their children were sleeping). Scores ranged from 1 ("less than

10 hours") to 5 ("more than 40 hours"). On average, parents in the control group reported spending 30–39 hours per week with their children (a score of 4 on the 5-point scale). As would be expected, with the increase in full-time employment, parents in the program group reported spending fewer hours with their children than did parents in the control group. Again, this effect was small.

Impacts on Child Care and Residential Moves

Data on child care are presented in Table 4.2. Child care participation was collected only on the youngest child in each family, and only for the 18 months prior to the 36-month follow-up interview. Data on child care expenditures include information for all children in the family, and for the month preceding the 36-month interview. The child care participation data presented in this section are for children ages 3–5 at the 36-month follow-up who were also the youngest children in the family. The child care expenditure data presented are for all children in the family in families where the youngest child was 3–5 years old.

Table 4.2: SSP Impacts on Child Care and Residential Changes for Families With Younger Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Expenditures[a]					
Monthly child care expenditures ($)	56.79	38.22	18.58 **	0.030	0.17
Sample size	370	371			
Child care for youngest child[a]					
Any child care (%)	62.70	50.94	11.76 ***	0.001	0.23
Any centre care (%)	29.46	21.56	7.90 **	0.014	0.19
Any after-school programs (%)	3.24	1.89	1.36	0.243	0.10
Any informal child care (%)	43.51	36.12	7.40 **	0.040	0.15
Hours in child care in last week	17.90	12.33	5.58 ***	0.001	0.29
Changed care 2+ times (%)	5.95	3.24	2.71 *	0.078	0.15
Sample size	370	371			
Residential moves					
Any residential moves (%)[b]	79.33	74.95	4.38	0.104	0.10
Sample size	474	503			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, and the 36-month follow-up parent survey.

Note: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The child care participation data are for children ages 3–5 at the 36-month follow-up who were also the youngest children in the family. Child care expenditure data are for families whose youngest children were ages 3–5 at the 36-month follow-up. Except for hours in child care in last week, all child care participation data are for the 18 months prior to the 36-month follow-up interview. Child care expenditure data include expenses for all children in the family in the month prior to the 36-month follow-up interview.

[b]This item includes all moves in the 36-month follow-up period.

Half of all parents in the control group used some form of child care for their youngest children, with a greater proportion of parents using informal rather than centre care arrangements. Informal care arrangements included relative or non-relative care in or out of the child's home (excluding sibling care). Only a very small proportion of control group families (three percent) reported changing child care arrangements twice or more in the last six months.

SSP's impact on child care was consistent with the impact of the program on full-time employment. Parents in the program group with young children spent significantly more on child care than did parents in the control group. For 3- to 5-year-old children who were the youngest children in the family, SSP increased the proportion in any child care arrangement by 12 percentage points from 51 percent to 63 percent. Increases in centre care and informal care arrangements were similar, with program group children approximately eight percentage points more likely to be in either form of care. Program group parents also reported that their youngest child was in child care a greater number of hours in the last week than was reported by control group parents. Program group parents were also more likely to report greater instability of care arrangements, however, with program group parents more likely to change child care twice or more in the last six months. The impacts on the use of child care are much larger than impacts on family functioning. Effect sizes on the use of any child care and hours in child care are approaching the moderate level.

Because SSP increased family income, parents in the program group may have used their increased resources to change the neighbourhoods in which their children lived. The second panel on the table reports the proportion of families that experienced any residential moves over the 36-month follow-up period. While 75 percent of control group parents had moved at least once over the follow-up period, 79 percent of program group parents had moved; this difference only approached significance ($p = .104$), and the effect is small.

Impacts on Family Structure

Table 4.3 reports the impacts of SSP on the marital history of the parent and on children's contact with the second parent.[1] A three-year marital history — based on the information provided from the baseline, 18-month, and 36-month follow-up surveys — was constructed for each family. According to this information, only about one-fourth of parents in the control group were ever married (or in a common-law relationship) at some point over the follow-up period. SSP had no impact on family structure for parents of young children. SSP did not increase the number of months parents were married or the likelihood that they were married at some point over the follow-up period.

Contact with the biological father was assessed using data from the parent survey, which provides a measure of father contact whether or not the mother is living with the father. Almost two-thirds of children in the control group have contact with their second biological parent (typically the father). Most of this contact is visitation rather than joint custody arrangements with the second parent. SSP had no effect on children's contact with their second parent.

[1] For the three percent of families in which the parent participating in the SSP study is a father, this variable represents the contact of the child with the biological mother. For all other families, this variable represents the child's contact with the biological father.

Table 4.3: SSP Impacts on Family Structure for Families With Younger Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Marital history of parent					
Ever married during follow-up (%)	24.14	23.75	0.39	0.884	0.01
Number of months married during follow-up	4.11	4.15	-0.03	0.953	0.00
Sample size	493	518			
Child's contact with second parent (%)[a]					
Any contact	67.47	63.53	3.93	0.184	0.08
Living with second parent	19.16	16.54	2.62	0.272	0.07
Visits with second parent	42.32	40.23	2.09	0.495	0.04
Sample size	500	532			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, and the 36-month follow-up parent survey.

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Contact was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

Because marriage impacts for the 36-month core sample differed by province, marriage was examined separately for the two provinces.[2] For the families of these young children, there were no significant program impacts on marriage in either province (not shown in the table).

Summary of Impacts on Intermediate Outcomes for Young Children

In sum, program impacts for the youngest group of children were found in child care but not in family functioning. For these children, SSP decreased the amount of time parents reported spending with their children and increased the likelihood that children were in formal and/or informal child care arrangements. Program impacts on child care were small to moderate in size. SSP had almost no effect on parenting behaviour and parental functioning, however. This finding suggests that SSP may have affected young children primarily through changes in child care environments, rather than changes in family socialization patterns. Although, as was as discussed in Chapter 3, the increases in child care were not accompanied by any impacts of SSP on the functioning of these young children, in either a positive or a negative direction.

[2]See Michalopoulos et al., 2000, for greater detail regarding these marriage impacts by province.

IMPACTS FOR FAMILIES OF THE MIDDLE COHORT OF CHILDREN

In this section, the effects of SSP on family functioning, changes in child care and school, and family structure for families with children in the middle cohort — that is, children ages 6–11 — are examined. Employment may not be as stressful for parents of school-age children as it is for parents of younger children. Children of this age still need care in the afternoon after-school hours, however, and thus parents in the program group are likely to increase the child care experiences of their early-school-age children. The increase in income due to SSP may make it possible for parents in the program group to purchase such activities while they work.

The analyses presented in Chapter 2 suggest that SSP increased parental employment and family income for parents of children in the middle age group. At the same time, as Chapter 3 shows, there was some evidence that SSP had small positive impacts on children's cognitive and health outcomes. One hypothesis for the favourable program impacts on children in this age group may be that parents become less stressed as a result of increased family income. Such a reduction in parenting stress may lead to more positive parenting practices, resulting in benefits for children's health and development. Also, parents who are working may provide a positive role model for children in this age group. Another explanation for the positive impacts may be in the increases in child care arrangements parents provide for their children. Parents may place children in this age group in more varied and structured activities after school. Not only may such activities provide child care for children while parents work full time, but they may also provide a structured learning environment for children's academic and cognitive outcomes. The results presented in this section should contribute to an understanding of whether the data support any of these hypotheses.

Impacts on Parental Functioning and Parenting

Data on parental functioning and parenting are presented in Table 4.4. In the control group, 18 percent of parents reported, in answer to a single question regarding parents' general health, that they were in below-average health. Program group parents were less likely to be in below-average health, but the difference between the program and control groups was not significant. Both control group parents and program group parents on average reported having had five or more drinks in a row about 2.7 times in the past year, and both sets of parents had relatively low levels of parenting problems. The parenting problems measure is based on a single question about the problems a parent had caring for her children and is rated on a scale from 1 ("not difficult") to 5 ("very difficult"). Program and control groups did not differ on this measure or the measure of alcohol use.

Parents also reported on the frequency of experiencing depressive symptoms. Parents who reported a high frequency of depressive symptoms were scored as being at risk for depression, on the basis of previous research (see text box on p. 66 for greater detail regarding this measure). In the control group, just over one-third of parents reported being at risk for depression. Surprisingly, SSP significantly increased the proportion of parents at risk for depression by five percentage points. Although the effect size on this measure was small (.11), this impact may not bode well for children, especially if parental behaviour changes as a result of an increase in depression.

Table 4.4: SSP Impacts on Family Functioning for Families With Middle Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Parental functioning and parenting behaviour					
Parental functioning					
Below-average health (%)	15.38	18.24	-2.85	0.125	-0.07
High alcohol use (times in last year)	2.75	2.67	0.08	0.783	0.02
Parenting problems[a]	2.03	2.07	-0.03	0.526	-0.03
At risk for depression (%)	42.08	36.82	5.26 **	0.032	0.11
Sample size	819	795			
Parenting behaviour (parental report)[b]					
Warm parenting[c]	3.63	3.64	-0.01	0.632	-0.02
Negative parenting[c]	2.10	2.09	0.01	0.831	0.01
Consistent discipline[c]	3.81	3.83	-0.02	0.509	-0.03
Sample size	1,119	1,049			
Parenting behaviour (child report)[b]					
Authoritative parenting[c]	4.09	3.97	0.12	0.128	0.14
Negative/inconsistent parenting[c]	2.25	2.24	0.01	0.817	0.02
Sample size	237	209			
Parental time with all children[d]	4.17	4.27	-0.10 *	0.096	-0.08
Sample size	815	790			

Sources: Calculations from the 36-month follow-up parent survey and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Parenting problems is rated on a scale of 1 to 5, with 5 indicating great difficulty caring for children.

[b]Parenting behaviour was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[c]These items are rated on a scale of 1 ("never") to 5 ("many times each day").

[d]Parental time with all children is rated on a scale of 1 ("less than 10 hours") to 5 ("more than 40 hours").

Both parents and children reported on parental behaviour, responding to a series of items regarding particular behaviours. Parents reported on their warm parenting, negative parenting, and consistent discipline. Children reported on their parents' authoritative parenting (a combination of warm, democratic, and limit-setting parenting) and negative and inconsistent parenting. All the parenting scales ranged from 1 to 5. (See text box on p. 67 for more information regarding the warm, negative, and consistent discipline measures. See the following text box for information on the authoritative and negative/inconsistent dimensions.) In both the program and the control groups, parents reported more warm and consistent parenting than negative parenting behaviours. Children's report ratings are at similar levels to those collected via parental report. Surprisingly, no program impacts on parenting were found; despite a small increase in parental depression due to SSP, parental behaviour as reported was not affected by the program.

Measures of Authoritative Parenting and Negative/Inconsistent Parenting

Children ages 10–18 and parents of children ages 15–18 were asked about parents' authoritative parenting (Baumrind, 1971, and Maccoby and Martin, 1983) and their negative and inconsistent parenting. Items were answered on a 5-point scale ranging from 1 ("never") to 5 ("many times each day") or from 1 ("never") to 5 ("all of the time"). The technical details of these scales are presented in Appendix B.

The items tapped two distinct subscales:

Authoritative parenting. Authoritative parenting is a parenting style that includes a combination of warmth and democratic parenting, but with appropriate (and consistent) limit-setting. Some items were similar to the warm-parenting dimension described earlier for younger children ("How often do you smile at her?" "How often do you praise him?"), while others captured the extent to which parents were democratic with their children ("How often do you listen to her ideas and opinions?" and "How often do you solve a problem together when you disagree about something?"). Items were re-scored such that high values indicated greater warmth and greater democracy in parenting. Authoritative parenting was computed as the average score across the items on the scale.

Negative/inconsistent parenting. In this scale, some items captured a negative parenting style ("How often do you get angry and yell at him?" "How often do you hit her or threaten to do so?"), and others captured an inconsistent disciplinary style ("How often do you keep rules only when it suits you?" "How often do you soon forget a rule you have made?"). Items were re-scored such that high scores indicate more negative and more inconsistent parenting. The total score was computed by averaging the items in the scale.

The last row in this table presents data on parental time with children. Scores ranged from 1 ("less than 10 hours") to 5 ("more than 40 hours"). Program group parents reported spending significantly less time with their children than their control group counterparts. This finding is not surprising given the increase in employment observed for program group parents of children in this age group relative to control group parents. Nevertheless, this effect is very small.

Impacts on Child Care, Children's Activities, and School and Residential Changes

Another possible pathway by which SSP may have influenced children's functioning is through changes in child care and activities. Table 4.5 presents data in this area. Because information on child care arrangements was collected for the youngest child in the family only, the data presented on child care participation are for those children who are the youngest in the family and who are in the middle age group of 6–11. The data presented on child care expenditures include money spent on all children in the family in the month prior to the 36-month follow-up, but only for families whose youngest child was 6–11 years old.

Table 4.5: SSP Impacts on Child Care, Children's Activities, and School and Residential Changes for Families With Middle Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Expenditures[a]					
Monthly child care expenditures ($)	41.36	18.77	22.59 ***	0.000	0.38
Sample size	634	583			
Child care for youngest child[a]					
Any child care (%)	45.43	39.97	5.46 *	0.055	0.11
Any centre care (%)	8.52	7.03	1.49	0.335	0.06
Any after-school programs (%)	6.78	6.86	-0.08	0.957	0.00
Any informal child care (%)	36.91	31.73	5.18 *	0.058	0.11
Hours in child care in last week	10.05	7.04	3.01 ***	0.004	0.19
Changed care 2+ times (%)	3.31	2.06	1.25	0.180	0.09
Sample size	634	583			
Children's activities (parental report)[b]					
Any activity at least once per week (%)	96.95	95.42	1.53 *	0.063	0.07
Days per month in all activities	16.63	16.15	0.48 *	0.083	0.07
Days per month in supervised activities	6.30	5.92	0.38	0.170	0.06
Sample size	1,115	1,048			
Children's activities (child report) (ages 10-11)[b]					
Any activity at least once per week (%)	91.79	91.56	0.23	0.926	0.01
Days per month in all activities	14.96	14.70	0.26	0.691	0.04
Days per month in supervised activities	9.46	8.71	0.75	0.294	0.10
Sample size	267	237			
School changes and residential moves					
Any school changes (%)[b]	43.90	39.46	4.44 **	0.043	0.09
Two or more school changes (%)[b]	18.79	14.30	4.49 ***	0.691	0.13
Sample size	1,031	996			
Any residential moves (%)[c]	67.90	63.36	4.54 **	0.045	0.09
Sample size	891	868			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, the 36-month follow-up parent survey, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The child care participation data are for children ages 6–11 at the 36-month follow-up who were also the youngest children in the family. Child care expenditure data are for families whose youngest children were ages 6–11 at the 36-month follow-up. Except for hours in child care in the last week, all child care participation data are for the 18 months prior to the 36-month follow-up interview. Child care expenditure data include expenses for all children in the family in the month prior to the 36-month follow-up interview.

[b]These measures were assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[c]This item includes all moves in the 36-month follow-up period.

In the control group, almost 40 percent of children were ever in child care in the last 18 months prior to the 36-month interview. Information on both formal programs (centre-based day care and after-school programs) as well as informal programs (relative and non-relative care in or out of the child's home) is presented. Participation in informal care far

exceeded participation in more formal programs, with 31 percent of the children in informal care compared with seven percent in centre care and seven percent in after-school programs. This difference is not surprising, given that many of the children in this group were in school most of the day during the follow-up period. Parents in this sample did not report any use of "self" care (that is, having children care for themselves alone; not shown in the table).[3]

SSP increased parents' spending on child care by $23 on average in the month prior to the 36-month follow-up. SSP increased participation in child care by five percentage points, and this increase was confined primarily to informal care arrangements. Children in the program group also spent more hours in care in the last week, but these effects were small, and much smaller than those for families with younger children. Program and control groups did not differ in frequency of changes in child care arrangements.

The second and third panels present parental and children's reports of children's after-school activities. Note that these data include all children in the middle cohort, unlike the child care participation data, which include only children who are the youngest of their families. In addition to parental reports on children ages 6–11, children ages 10–11 reported on their own participation in activities. These activities differ from the "after-school programs" in that they are not considered child care but enrichment activities. They included unsupervised sports and supervised sports, lessons, and clubs. The outcomes examined are children's participation in some form of activity at least once a week and the number of days spent per month in these activities (see the following text box for greater detail regarding these measures). Parents in both groups reported that almost all children participated in some form of activity at least once per week, and did so on average 16 weekdays in the month. Participation in supervised activities was much lower, occurring on average about six weekdays per month. Children's own reports of activities were consistent with parental reports.

SSP increased children's participation in after-school activities but these effects are very small. According to the parental reports, children in the program group were more likely to engage in any activity at least once per week, and participated more days in all activities, than children in the control group. There were no program impacts on children's own reports of participation in activities, however. This discrepancy may be due in part to the smaller sample of children on which the child report measures are based or to the focus on children ages 10–11 in the child report measures.

The bottom panel presents data on children's school and residence changes. In the control group, almost 40 percent of children experienced a change in schools, and just over 60 percent of families had at least one residential move over the three-year follow-up period. Children in the program group were slightly more likely to experience a change in schools and residence than corresponding children in the control group. SSP increased the proportion of children experiencing any school change by four percentage points and also increased the proportion of children experiencing frequent school changes (defined as two or more changes

[3]One possible reason for the lack of self-care reported is that parents who reported that they did not use any child care did not respond to any questions in the child care section. Therefore, only parents with other forms of child care arrangements were asked about children's self-care. Children who were not in other child care arrangements would be scored as not participating in self-care. It is likely that parents with other forms of child care are the least likely to have their children caring for themselves.

in the past three years). The large majority of school changes reported were due to residential moves; families in the program group were more than four percentage points more likely to experience any residential moves than families in the control group. The data presented in Chapter 2 shows no differences between program and control groups in housing or neighbourhood quality at the 36-month interview, however, meaning that children were moving into new neighbourhoods that were not significantly different from their old neighbourhoods.

Measures of Children's After-School Activities

Both parents of children ages 6–14 and children themselves ages 10–18 were asked about children's participation in after-school activities in the past year. Four different activities were addressed: (1) sports involving teaching or instruction (apart from physical education in school); (2) sports without a coach or instructor; (3) lessons in music, art, or other non-sport activities (outside of school); and (4) clubs, groups, or community programs with adult leadership. Responses were scored on a 1–4 scale ranging from "about every day" to "rarely." From these items, three variables were created to assess children's participation in after-school activities:

Any activity at least once per week. Children who scored a 1 ("about every day") or 2 ("about every week") in any of the four activities assessed were scored as participating in any activity at least once per week and scored as "100." Children who participated less than weekly in all activities were scored as "0."

Number of days in any activity/number of days in supervised activities. Because children may participate in multiple activities, and what is of most interest is the number of days children were engaged in activities, a summary score was computed across children's participation in the activities assessed. Children's scores on the 1–4 scale on each of the activities were re-scored to correspond to the likely number of days children participated in each activity every month. Scores of 1 ("daily") were scored as 20 (five days for four weeks each month); scores of 2 ("weekly") were scored as 4 (one day for four weeks each month); scores of 3 ("monthly") were scored as 1; and scores of 4 ("rarely") were scored as 0. A sum of these re-scored values was computed across all activities (and capped at 20, the highest possible score) for the *number of days in all activities.* A similar sum of these re-scored values (also capped at 20) was computed across only the supervised activities (supervised sports, lessons, and clubs) for the *number of days in supervised activities.* Unfortunately, because the exact day of the week the child participated in the activity was not specified, children who participated in two activities on the same day would be credited with participating in two days of activities.

Impacts on Family Structure

In Table 4.6, SSP impacts on family structure and contact with the second parent are shown. Data on marital history are based on information collected in the 18-month and 36-month follow-up interviews. These data suggest that about 20 percent of parents in the control group were ever married (or in a common-law relationship) over the follow-up period. Program and control groups did not differ in the proportion of families who were ever married or in common-law relationships, or in the number of months parents were in such relationships.

Table 4.6: SSP Impacts on Family Structure for Families With Middle Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Marital history of parent					
Ever married during follow-up (%)	20.23	19.62	0.61	0.742	0.02
Number of months married during follow-up	3.48	3.21	0.27	0.490	0.03
Sample size	939	897			
Child's contact with second parent (%)[a]					
Any contact	63.83	58.53	5.30 **	0.011	0.11
Living with second parent	11.19	12.06	-0.87	0.525	-0.03
Visits with second parent	43.96	38.27	5.69 ***	0.007	0.12
Sample size	1,116	1,061			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, and the 36-month follow-up parent survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Contact was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

In the parent survey, parents were asked about their children's contact with the second biological parent and the type of contact they had (for example, living in a joint custody arrangement or visitation only). SSP significantly increased children's contact with their second biological parent, by five percentage points, from 59 percent in the control group to 64 percent in the program group. This increase in contact was due to more frequent visiting with the second parent rather than living with this second parent in a joint custody situation. As with the other impacts for the middle age group of children, these impacts are small.

Marriage impacts for the 36-month core sample differed by province.[4] Therefore, marriage impacts on families with children in the middle age group were examined separately for the two provinces, but no program impacts were found on marriage in either province for parents of children in this age group (not shown in the table).

Summary of Impacts on Intermediate Outcomes for Children in the Middle Age Group

SSP increased child care and children's activities for children in this middle age group. Parents in the program group reported more child care for their children than did parents in the control group, particularly informal care. Parental reports also indicated that program group children were spending more time in after-school activities than their control group counterparts. In addition, children in the program group were more likely to change schools

[4]See Michalopoulos et al., 2000, for greater detail regarding these marriage impacts by province.

and residences than children in the control group and were more likely to have visiting contact with their second parent. All of these program impacts are small.

Program impacts on parental functioning and parenting were extremely rare, suggesting that the benefits to children's functioning likely were not due to changes in children's socialization. While parents in the program group were more likely to be depressed than those in the control group, the lack of corresponding findings of changes in parenting behaviour suggests that, at least in the short term, increases in parental depression due to SSP may not be negatively affecting children.

While we can only speculate about the possible pathways that may have led to the small favourable program impacts for children in the middle group, the findings point to several key changes in children's lives that may be associated with the favourable program outcomes. Research suggests that after-school activities can benefit children by providing a safe, structured learning environment for children.[5] Parents in the program group may have relied on both these arrangements to a greater extent than parents in the control group as they engaged in longer hours of employment. The greater participation in such activities may explain, at least in part, the benefits to academic and cognitive performance found for children in the program group. Another possibility is that changes in schools and residences may also have played a role in the benefits of the program, although the impacts on family hardship described in Chapter 2 do not suggest that the neighbourhoods were of better quality for program group families of children in this age group. Finally, the small impacts on children's contact with the second parent may have had some benefits for children. Overall, the most likely explanation for the small impacts on children's cognitive outcomes is through increases in children's child care arrangements brought about by SSP.

It is important to note that the effects on these intermediate outcomes are small. While the employment and income impacts of SSP are relatively large, these did not translate into big changes in children's home and child care environments. This finding may explain why impacts on child outcomes are small as well and are seen only in limited areas of child functioning.

IMPACTS FOR FAMILIES WITH CHILDREN IN THE OLDER COHORT

Parents of older children are likely to respond to changes in employment and income very differently from parents of younger children. They may not feel the ambivalence that parents of younger children feel as they engage in employment, as older children do not require the parental attention of their younger peers. Parents of older children may not feel they need to provide structured care for their children while they work, and, as they engage in activities outside of the home, they may depend on their children more to help with household chores and care for younger siblings. Children may also be encouraged to work as a result of parents' employment, and their working parents may provide important role models for them. They may also be left unsupervised during the afternoon, however, and even during the evening hours as parents engage in full-time work outside of the usual workday.

[5]Posner and Vandell, 1994, 1999.

The analysis of SSP's impacts on the older cohort of children (presented in Chapter 3) suggests some small negative program impacts, particularly for children's substance use and minor delinquent activity. Why might older children respond negatively to the increases in parental employment and family income brought about by SSP? One possibility is that parents of older children responded to the stress associated with their increased employment with more negative parenting behaviours. Children may have responded to these changes with acting-out behaviour. Alternatively, increases in parental employment may have resulted in less supervision of children in this cohort. While older children do not need care in the way that younger children do, they do require supervision in the transition to adolescence, and may benefit from participation in supervised activities. In addition, parents of older children may over-burden their children with household tasks as they engage in more full-time employment. This section examines the extent to which these various pathways were affected by SSP.

Impacts on Parental Functioning and Parenting

Table 4.7 presents the data on parental functioning and parenting behaviour. Almost 30 percent of parents in the control group reported being in below-average health, and parents in the control group reported high alcohol use (drinking five or more drinks in a row) 2.5 times in the past year. There were no program impacts on either of these measures of parental functioning.

Parenting problems were based on a single question about the difficulty parents had caring for their children, ranging from 1 ("not difficult") to 5 ("very difficult"). Program and control groups reported similar levels of parenting problems. Parents also reported how often they had experienced each of 11 depressive symptoms over the past week (for greater detail regarding this measure, see text box on p. 66). On the basis of a summary measure developed from these items, almost 44 percent of parents in the control group reported depressive symptoms that put them at risk for clinical depression. Program and control groups did not differ in their risk of depression.

Both parents and children were asked a series of items tapping parenting behaviour. Slightly different sets of items were asked of parents of children ages 12–14 and parents of children ages 15–18. For parents of the younger children, reports of warm parenting, negative parenting, and consistent discipline were examined. For older children, parental and adolescent reports of parents' authoritative parenting (warm, democratic, and limit-setting parenting) and negative/inconsistent parenting were assessed. All parenting scales were based on an average score across a small set of parenting questions, which was scored on a 1–5 scale. (More information on these parenting measures is provided in the text boxes on pp. 67 and 73.) Parents reported higher levels of positive parenting behaviours than negative parenting behaviours. Children's own reports show slightly higher levels of negative parenting styles than parental report measures.

Program impacts on parenting behaviour were extremely rare. The only difference that was statistically significant indicated more negative parenting among program group than control group parents of 15- to 18-year-old children. According to all the other parental and child report measures, however, SSP did not appear to influence parenting behaviour.

Table 4.7: SSP Impacts on Family Functioning for Families With Older Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Parental functioning and parenting behaviour					
Parental functioning					
Below-average health (%)	27.23	28.57	-1.35	0.617	-0.03
High alcohol use (times in last year)	2.14	2.47	-0.32	0.358	-0.05
Parenting problems[a]	2.20	2.28	-0.08	0.236	-0.07
At risk for depression (%)	44.62	43.86	0.77	0.799	0.02
Sample size	573	539			
Parenting behaviour (parental report)[b]					
Warm parenting (ages 12-14)[c]	3.42	3.39	0.03	0.549	0.04
Negative parenting (ages 12-14)[c]	2.08	2.07	0.01	0.816	0.02
Consistent parenting (ages 12-14)[c]	3.67	3.67	0.00	0.972	0.00
Authoritative parenting (ages 15-18)[c]	4.05	4.09	-0.04	0.396	-0.06
Negative parenting (ages 15-18)[c]	2.24	2.16	0.08 *	0.055	0.14
Sample size	382	360			
Parenting behaviour (adolescent report)[b]					
Authoritative parenting[c]	3.74	3.73	0.01	0.865	0.01
Negative/inconsistent parenting[c]	2.34	2.39	-0.05	0.278	-0.07
Sample size	550	494			
Parental time with all children[d]	3.90	3.94	-0.04	0.651	-0.03
Sample size	563	525			

Sources: Calculations from the 36-month follow-up parent survey and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Parenting problems are rated on scale of 1 to 5, with 5 indicating great difficulty caring for children.

[b]These measures were assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[c]These items are rated on a scale of 1 ("never") to 5 ("many times each day").

[d]Parental time with all children is rated on a scale of 1 ("less than 10 hours") to 5 ("more than 40 hours").

The final row on the table presents information on parental time with children in the home, scored on a 5-point scale ranging from 1 ("less than 10 hours") to 5 ("more than 40 hours"). Despite the increases in parental employment, parents of older children did not report spending less time with all their children.

Impacts on Child Care, Children's Activities, and Residential and School Changes

Data on children's child care and after-school activities are presented in Table 4.8. The data on child care were collected only for children in this age group who were also the youngest children in the family. Data on child care expenditures include all children in the family, but only for families whose youngest child was 12–18 years old. Not surprisingly, children in this age group were very unlikely to be in any form of care arrangement. Informal care arrangements (relative and non-relative care in or out of the child's home) were

relatively uncommon, with less than six percent of control group children in this form of care over the 18 months prior to the 36-month interview. Despite the increases in maternal employment found for the children in this age group, there were no increases in expenditures for or use of child care by program group members when compared with their control group counterparts. Given that these children may not require adult supervision, these findings on child care are not surprising.

Children and parents also reported on children's participation in unsupervised sports and in supervised sports, lessons, and clubs (see text box on p. 76 for more detail regarding these measures). A large proportion of children in the control group participated in some activity at least once per week (92 percent, according to parental report measures), but these children on average participated in all activities twice as many days over the month as in supervised activities. Children's own reports were consistent with the parental reports.

SSP had no impact on children's after-school activities for the older cohort of children. The level of participation in lessons, sports, and clubs in the program and control groups did not differ, according to both parental and adolescent report measures. SSP did significantly increase children's engagement in household chores, however. Children's engagement in household chores was measured on a scale ranging from 1 ("rarely") to 5 ("almost every day") and included children's care of younger siblings as well as other household tasks. While the program impact on household chores is small, it does suggest that parents in the program group may have relied on their older children more often than parents in the control group as they engaged in greater levels of employment.

The oldest children in the cohort (ages 15–18) also reported on their own work experience. In both the program and control groups, approximately 85 percent of these children were in school at the 36-month follow-up, and 35 percent of the children were engaged in employment. While there were no program impacts on whether or not these adolescents were working, there was a program impact on the number of hours they worked. Older adolescents in the program group were more likely than their counterparts in the control group to be working over 20 hours per week. While only eight percent of children in the control group worked more than 20 hours, 15 percent of children in the program group worked more than 20 hours, a modest and statistically significant program impact.

The bottom panel of the table reports school changes and residential moves for the older cohort of children. Just over one-third of the children in the control group had changed schools in the past three years, and 12 percent had changed schools at least twice. SSP significantly increased the proportion of children experiencing two or more school changes by five percentage points, a small program impact, but an equal proportion of children in both groups had experienced any school changes. The large majority of school changes were due to residential moves.

Table 4.8: SSP Impacts on Child Care, Children's Activities, and School and Residential Changes for Families With Older Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Expenditures[a]					
Monthly child care expenditures ($)	1.29	1.22	0.08	0.943	0.00
Sample size	379	345			
Child care for youngest child[a]					
Any after-school programs (%)	0.00	0.58	-0.58	0.138	-0.08
Any informal child care (%)	3.69	5.51	-1.81	0.243	-0.08
Hours in child care in last week	0.96	0.28	0.68	0.147	0.32
Sample size	379	345			
Children's activities (parental report) (ages 12-14)[b]					
Any activity at least once per week (%)	91.53	92.35	-0.82	0.686	-0.03
Days per month in all activities	14.96	15.14	-0.17	0.751	-0.02
Days per month in supervised activities	7.44	7.11	0.32	0.572	0.04
Sample size	365	353			
Children's activities (adolescent report)[b]					
Any activity at least once per week (%)	86.29	85.69	0.61	0.775	0.02
Days per month in all activities	13.19	13.46	-0.27	0.581	-0.03
Days per month in supervised activities	7.37	7.78	-0.41	0.413	-0.05
Frequency of doing household chores	4.03	3.92	0.11 *	0.087	0.10
Sample size	568	510			
Work and school (adolescent report) (ages 15-18)[b]					
Working (%)	35.49	35.17	0.33	0.938	0.01
Currently in school (%)	83.96	85.59	-1.63	0.602	-0.05
In school and working (%)	29.69	30.93	-1.24	0.758	-0.03
Working 0 hours per week (%)	71.43	75.60	-4.17	0.305	-0.10
Working 1 to 9 hours per week (%)	7.52	6.70	0.82	0.729	0.03
Working 10 to 19 hours per week (%)	6.02	9.57	-3.55	0.156	-0.12
Working 20 or more hours per week (%)	15.04	8.13	6.90 **	0.017	0.25
Sample size	292	236			
School changes and residential moves					
Any school changes (%)[b]	38.61	37.17	1.43	0.576	0.03
Two or more school changes[b]	16.92	12.37	4.56 **	1.677	0.14
Sample size	745	686			
Any residential moves (%)[c]	54.05	51.10	2.94	0.307	0.06
Sample size	618	589			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, the 36-month follow-up parent survey, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The child care participation data are for children ages 12–18 at the 36-month follow-up who were also the youngest children in the family. Child care expenditure data are for families whose youngest children were ages 12–18 at the 36-month follow-up. Except for hours in child care in last week, all child care participation data are for the 18 months prior to the 36-month follow-up interview. Child care expenditure data include expenses for all children in the family in the month prior to the 36-month follow-up interview.

[b]These measures were assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[c]This item includes all moves in the 36-month follow-up period.

About half the children in the control group had any residential moves over the three-year follow-up period. There were no program impacts on children's residential moves. This is surprising given the decreases in neighbourhood quality in the program group. As indicated in Chapter 2, program group parents of children in the older cohort reported living in worse neighbourhoods than corresponding control group parents. There are two possible explanations for this finding. Program group members may have been more likely to move for employment than control group members, and these moves may have brought them to worse environments. The findings reported here on residential mobility contradict this hypothesis. Alternatively, parents may have perceived their neighbourhood as lower quality as their children engaged in deviant behaviour. This second hypothesis is consistent with the greater levels of delinquency among program group children relative to their control group counterparts.

Impacts on Family Structure

The findings on family structure are shown in Table 4.9. Only about 15 percent of parents of adolescent children were married at some point over the follow-up period. However, almost two-thirds of children in this age group were reported to have contact with their second parent. Much of this contact was in the form of visiting, rather than living with, this second parent. Overall, SSP had no impact on marital status changes or second-parent contact.

Table 4.9: SSP Impacts on Family Structure for Families With Older Cohort Children at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Marital history of parent					
Ever married during follow-up (%)	15.61	14.71	0.90	0.658	0.03
Number of months married during follow-up	2.69	2.44	0.25	0.558	0.03
Sample size	647	605			
Child's contact with second parent (%)[a]					
Any contact	62.62	61.01	1.60	0.531	0.03
Living with second parent	8.98	8.55	0.43	0.772	0.02
Visits with second parent	41.88	42.90	-1.02	0.694	-0.02
Sample size	756	690			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, and the 36-month follow-up parent survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Contact was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

As has been noted earlier, however, SSP had differential impacts on marital status in the two provinces where the study was conducted.[6] The impacts of SSP on family structure are shown by province in Table 4.10. For older children, there were important differences by province. In British Columbia, SSP significantly *decreased* the proportion of children living with the second parent by six percentage points, while in New Brunswick SSP significantly *increased* the proportion of children living with the second parent by an equal amount. These impacts are approaching the moderate level (with effect sizes in the .2 range). Also, in New Brunswick program group parents were married for a greater number of months over the follow-up period than control group parents, a small but statistically significant program impact.

Table 4.10: SSP Impacts on Family Structure for Families With Older Cohort Children at the 36-Month Follow-Up, by Province

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
	British Columbia				
Marital history of parent					
Ever married during follow-up (%)	11.18	12.91	-1.73	0.514	-0.05
Number of months married during follow-up	1.63	2.37	-0.74	0.186	
Sample size	304	302			
Child's contact with second parent (%)[a]					
Any contact	62.43	62.70	-0.27	0.943	-0.01
Living with second parent	5.78	11.91	-6.13 ***	0.006	-0.19
Visits with second parent	43.35	40.13	3.23	0.399	0.07
Sample size	345	319			
	New Brunswick				
Marital history of parent					
Ever married during follow-up (%)	19.53	16.50	3.03	0.319	0.08
Number of months married during follow-up	3.62	2.51	1.12 *	0.077	
Sample size	343	303			
Child's contact with second parent (%)[a]					
Any contact	62.77	59.57	3.20	0.359	0.07
Living with second parent	11.68	5.66	6.02 ***	0.003	0.26
Visits with second parent	40.63	45.28	-4.65	0.190	-0.09
Sample size	410	371			

Sources: Calculations from the 18-month follow-up core survey, the 36-month follow-up core survey, and the 36-month follow-up parent survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Contact was assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[6]Michalopoulos et al., 2000.

In New Brunswick, the increase in marriage along with the increase in children living with the second parent could mean either that parents in the program group are marrying the adolescents' second biological parent (and so children are living with both biological parents in the same household) or that parents in the program group are marrying someone else and older children are reacting to these changes by increasing custodial contact with the second parent. Further examination of the data suggests that in the increased contact with the second biological parent, the child is living with the second parent in a shared custody arrangement, not in a household with both biological parents.

In British Columbia, older children in the program group are significantly less likely to be living with the second biological parent. Again, there are two possibilities: either the second biological parent is less likely to be living with both the child and the first parent or the child is less likely to be in a shared custody situation. The data (not shown in the table) suggest that both processes are happening; program group children are less likely to be living with both biological parents in the same household than control group children and are less likely to be in shared custody. These findings are consistent with the marriage impacts on the full 36-month sample for parents in British Columbia, which suggested that program group parents were less likely to be married than their control group counterparts.

Summary of Impacts on Intermediate Outcomes for Older Children

These results suggest that while SSP increased employment and income for families with the older cohort of children, there was little impact on the intermediate outcomes that might influence children's outcomes. As with families with the younger and middle age group of children, almost no impacts on parental functioning or parenting behaviour were shown in the measures provided by the parent and child surveys.

Interestingly, SSP had no impacts on children's child care or after-school activities. While SSP did significantly increase full-time employment, there was no corresponding increase in children's after-school arrangements, perhaps because parents considered these children old enough to care for themselves. Some forms of delinquency (for example, conduct problems) may be linked more closely with negative parenting behaviour rather than with lack of parental supervision. Interestingly, SSP increased the type of delinquent behaviours (for example, staying out late) that are more closely associated with lack of parental supervision than with other difficulties in parent-child interactions.

More children in the program group than in the control group reported doing chores, suggesting that these children may have been asked to take on greater family responsibilities while parents worked. The findings suggest that they also may be engaging in higher levels of employment. While there is little research on whether greater household responsibilities are beneficial for adolescents, several studies have suggested that high levels of employment in adolescence may be associated with greater alcohol use and delinquency.[7] Researchers have suggested that associating with young adults and taking on adult responsibilities may encourage adolescents to engage in adult risk-taking behaviour earlier.[8]

[7]Mortimer et al., 1996, and Steinberg and Dornbusch, 1991.
[8]Ibid.

SSP impacts on family structure differed by province. SSP significantly increased parental marriage and second-parent contact for children in New Brunswick and significantly decreased both for children in British Columbia. The reasons for these differing patterns of change for the two provinces are unclear. The findings of greater family structure and custodial changes for older children in the program group may be important, however, regardless of the direction of change. Research suggests that older children are very vulnerable to such family changes as marriage and divorce, which affect adolescents' roles and responsibilities.[9] If this is the case, then the family changes observed in both provinces may be driving some of the unfavourable program impacts for adolescents in SSP.

COMPARISON OF IMPACTS ACROSS FAMILIES OF CHILDREN IN THE THREE AGE COHORTS

The effect sizes of the program impacts on parental functioning, parenting, child care, and family structure for each of the three age groups are shown in Table 4.11.

Table 4.11: SSP Summary of Impacts on Intermediate Outcomes at the 36-Month Follow-Up, in Effect Sizes, by Child Age

Outcome	Younger Cohort[a] Effect Size	Middle Cohort[b] Effect Size	Older Cohort[c] Effect Size
Parental functioning and parenting behaviour			
Parental functioning			
Below-average health	-0.03	-0.07	-0.03
High alcohol use	-0.16 ***	0.02	-0.05
Parenting problems[d]	-0.10	-0.03	-0.07
At risk for depression	-0.07	0.11 **	0.02
Sample size	896	1,614	1,112
Parenting behaviour (parental report)[e]			
Warm parenting (ages 3-14)[f]	-0.12 *	-0.02	
Negative parenting (ages 3-14)[f]	-0.02	0.01	
Consistent parenting (ages 3-14)[f]	0.04	-0.03	
Authoritative parenting (ages 15-18)[f]			-0.06
Negative parenting (ages 15-18)[f]			0.14 *
Sample size	1,024	2,168	742
Parental time with all children[g]	-0.13 *	-0.08 *	-0.03
Sample size	893	1,605	1,088
Child care for youngest child[h]			
Any child care	0.23 ***	0.11 *	
Any centre care	0.19 **	0.06	
Any after-school programs	0.10	0.00	-0.08
Any informal child care	0.15 **	0.11 *	-0.08
Hours in child care in last week	0.29 ***	0.19 ***	0.32
Changed care 2+ times	0.15 *	0.09	
Sample size	741	1,217	724

(continued)

[9]McLanahan, 1997.

Table 4.11: SSP Summary of Impacts on Intermediate Outcomes at the 36-Month Follow-Up, in Effect Sizes, by Child Age (Cont'd)

Outcome	Younger Cohort[a] Effect Size	Middle Cohort[b] Effect Size	Older Cohort[c] Effect Size
Work and school (adolescent report) (ages 15-18)[e]			
Working			0.01
Currently in school			-0.05
Hours worked per week			0.26 **
Sample size			528
Children's activities (parental report)[e]			
Any activity at least once per week		0.07 *	-0.03
Days per month in all activities		0.07 *	-0.02
Days per month in supervised activities		0.06	0.04
Sample size		2,163	718
School changes and residential moves			
Any school changes[e]		0.09 **	0.03
Two or more school changes[e]		0.13 ***	0.14 **
Sample size		2,027	1,431
Any residential moves[i]	0.10	0.09 **	0.06
Sample size	977	1,759	1,207
Marital history of parent			
Ever married during follow-up	0.01	0.02	0.03
Number of months married during follow-up	0.00	0.03	0.03
Sample size	1,011	1,836	1,252
Contact with second parent[e]			
Any contact	0.08	0.11 **	0.03
Living with second parent	0.07	-0.03	0.02
Visits with second parent	0.04	0.12 ***	-0.02
Sample size	1,032	2,177	1,446

Sources: Calculations from the 36-month follow-up parent survey, the 36-month follow-up child survey, and the 36-month follow-up core survey.

Notes: Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]Younger cohort children were ages 3–5 at the 36-month follow-up.

[b]Middle cohort children were ages 6–11 at the 36-month follow-up.

[c]Older cohort children were ages 12–18 at the 36-month follow-up.

[d]Parenting problems is rated on a scale of 1 to 5, with 5 indicating great difficulty caring for children.

[e]These measures were assessed separately for each child in the family. Standard errors were adjusted to account for shared variance between siblings.

[f]These items are rated on a scale of 1 ("never") to 5 ("many times each day").

[g]Parental time with all children is rated on a scale of 1 ("less than 10 hours") to 5 ("more than 40 hours").

[h]The child care participation data for all age groups are for the youngest children in the family at the 36-month follow-up interview. Except for hours in child care in last week, all child care participation data are for the 18 months prior to the 36-month follow-up interview.

[i]This item includes moves in the 36-month follow-up period.

Parental Functioning and Parenting

For parents of the three age cohorts of children, impacts of SSP on parental functioning and behaviour were rare. The findings suggest that SSP does not have an effect on parenting behaviour and functioning as measured in this study. While research has suggested that employment and income may be associated with changes in parental functioning and parenting, the analyses do not indicate that SSP had any consistent impacts on these areas of family functioning. Because there are no clear effects of SSP on parental functioning or parenting for any of the age groups, differences in impacts on children's outcomes cannot be linked to differences in impacts on family socialization pathways.

Program impacts on parental time were greatest for parents of the youngest children and smallest for families with older children. That is, program group parents of younger children reduced the time they spent with their children relative to the control group (with an effect size of .13) more than did parents of older children (effect size of .03). This difference is not surprising given the greater needs of younger children for care and the hours spent in school by older children whether or not their parents are working.

Child Care and Children's Activities

Unlike the findings on the parental functioning and parenting measures, impacts of SSP on child care did differ slightly across the three age groups of children. For the youngest and middle cohorts of children, program group parents were more likely to be using child care than their control group counterparts. For the youngest cohort, SSP not only modestly increased both formal and informal child care arrangements but also slightly increased the instability of such care. For children in the middle cohort, program group parents reported not only slightly more informal care, but also slightly more participation in after-school activities, relative to control group parents. These effects are smaller than those for the youngest cohort of children. For the older cohort, despite increases in parental employment similar to those for the younger children, there were no differences between the program and control groups in children's after-school activities or in child care arrangements. In general, impacts on participation in child care and activities shrank with children's increasing age, in much the same way that impacts on parental time with children shrank over the three age groups of children. Small to moderate program impacts were found for parents of the younger cohort; small program impacts were found for parents of children in the middle cohort; and no program impacts were found for parents of the older cohort of children in the sample.

These small differences in program impacts on child care and children's activities may be associated with some of the differences seen in children's outcomes. The small positive program impacts on cognitive outcomes for children in the middle cohort stand in contrast to the small but negative program impacts on older children's behaviour. Considerable research has suggested that activities may benefit both middle childhood and adolescent children, by providing a structured learning environment for children after school.[10] It is possible that the difference in outcomes between the middle childhood and adolescent children were due to these differences in impacts on their activities.

[10]Posner and Vandell, 1994, 1999.

School and Residential Changes

As with child care, differences in program impacts on residential and school changes were found for the three age groups of children. For the middle cohort, families in the program group were slightly more likely to move than families in the control group. In addition, program group children in the middle cohort were slightly more likely to experience school changes (primarily because of these residential moves). For younger children, families in the program group were more likely to move than families in the control group, but this difference was just short of statistical significance. For families of older children, program and control groups were equally likely to move and were equally likely to experience school changes. Program impacts for the older children were found only for frequent changes of schools.

These findings suggest that another possible reason for the difference between the outcomes for the middle childhood and adolescent children may lie in differences in children's school and residential changes. Children in the middle cohort may have benefited from changes in schools and residences if these led to improvements in neighbourhood and school quality. The analysis of neighbourhood quality discussed in Chapter 2, however, suggests that parents may not be moving to better neighbourhoods. Unfortunately, there are no corresponding data to assess the quality of children's schools. While it is possible that the benefits to the middle cohort of children relative to their older peers might be due to these changes in residence, it is unlikely that such improvement would occur in the absence of changes in neighbourhood quality. However, the differences in impacts of school changes may account for some of the differences in impacts on children's outcomes.

Family Structure

Differences in impacts on family structure were also found across the three age groups of children. For the younger children, no program impacts on family structure were found. For the middle cohort of children, the only family structure difference was in children's visiting with the second parent; there were no impacts on marital status or living arrangements for this group. For the older cohort of children, however, program impacts were found, although they differed by province. In both cases, they suggest that there are greater changes in living situations for older children in the program group relative to children in the control group.

In New Brunswick, parents of older children in the program group were more likely to marry than corresponding parents in the control group, but their children were living more often with the second biological parent (outside of the primary parent's home). The data suggest that parents of these older children in New Brunswick are marrying someone other than the child's biological parent and that, in response, children are increasing their contact with the non-resident biological parent. Perhaps children seek their biological parents when a new step-parent enters their home, or perhaps non-resident biological parents seek greater custody of their children when a step-parent is introduced into the household. In any case, these changes suggest increases in step-families for older children in the program group.

In British Columbia, the oldest children in the program group were reported to have less contact with their second biological parents than their peers in the control group. Children in the program group were less likely to live with both biological parents in the same household and were also less likely to live in a joint custody situation than children in the control group.

These changes suggest that in British Columbia, SSP reduced father involvement for the older children in the sample.

The changes in living arrangements in both provinces may be associated with the small program impacts found for children's substance use and minor delinquency for children in this age group. While SSP did not have any impact on family structure for the younger and middle cohorts of children, older children in both provinces did experience greater family changes in the program than in the control group. Research has found that such changes as marriage and divorce can be difficult for older children and often result in changes in behaviour.[11] It is possible that the small negative impact of SSP on older children that is not seen for their younger peers may be due to these greater family changes.

CONCLUSION

The results of these analyses suggest that some of the differences in the impacts of SSP on children's outcomes across the three age groups may be due to differences in the pathways by which children were affected by SSP. While parents responded similarly across the three age groups in terms of their economic outcomes, they differed in regard to changes in child care, children's activities, residences and schools, and family structure. These differences are most pronounced for the middle cohort of children compared with the older cohort, where the differences in children's outcomes are also pronounced. Small differences in child care, children's activities, and family structure may be driving some of the differences in impacts on children's outcomes for the middle and older cohorts of children.

On the other hand, differences in the pathways by which children are influenced by SSP do not help to elucidate the reason why the younger and middle cohorts of children respond differently to SSP. Differences in the intermediate outcomes between the younger and middle cohorts of children were not very pronounced; SSP significantly increased child care for children in both cohorts. Differences in impacts on children's outcomes were found between these two age cohorts, however, in that only for the middle cohort of children are any program impacts observed, although these are small in magnitude.

It is likely that increases in maternal employment and child care are perceived differently by very young children and by their peers in the middle cohort. For example, younger children may be more sensitive to maternal separations and variations in day care quality than older children. The lack of program benefits for the younger children, therefore, may be due to the offsetting influence of income and employment on the one hand and child care on the other. If so, differences between very young children and the middle age group of children may not be due to differences in parental responses to the program but to differences in children's responses to similar experiences.

It is important to note, however, that these findings are not conclusive about the pathways by which SSP affected children. While the random assignment design allows the attribution of any differences between program and control groups to the effects of SSP, it does not permit an unbiased estimate of the link between the intermediate outcomes and outcomes for

[11] McLanahan and Sandefur, 1994, and McLanahan, 1997.

children in the two groups. Therefore, any suggested pathways for these different age groups should be regarded only as hypotheses consistent with the data and with previous research.

The findings in the child study suggest that SSP had little effect on the home environments of children, as assessed by the measures used in this study. The primary way children seem to be affected by SSP is in out-of-home changes, like child care and activities, and changes in schools and residences. These changes may have translated into the small program impacts on children's functioning observed for the middle and older cohorts of children.

Appendix A:
Assessing the Effect of Survey Non-Response on Estimated Impacts

As indicated in Chapter 2, not all families with children between 3 and 18 years old completed the child assessments. The *baseline sample* (of 5,686 families) includes all families who completed a baseline survey. Most of these families would have been eligible to complete the child assessments (the *eligible baseline sample)*. Ten percent of these families, however, could not be contacted or refused to participate in the 36-month survey, which included assessments of their employment, income, and earnings. Of those families who completed the 36-month survey and who were eligible to complete the child assessments (the *fielded sample)*, almost 20 percent did not complete any child assessment, and a greater percentage chose not to participate in one of the assessments (for example, to take the tests or to complete the child surveys). As with the adult survey, sometimes families could not be contacted; sometimes their children were not at home to participate in the tests or the child surveys; and sometimes the parents or children refused to participate. If the families who chose not to participate were very different from those who did participate, then two forms of bias could occur. First, average outcomes for survey respondents might not accurately represent outcomes for the entire group. Second, the impacts of the program calculated with survey respondents might lead to incorrect conclusions about the true effects of the program. Even if average outcomes are different among respondents and non-respondents, impacts may not differ if the program has the same effect for respondents and non-respondents. However, if this latter form of non-response bias is large, it has important implications for the conclusions drawn from this report. Both forms of bias are explored in this section.

RESPONSE RATES

Response rates are computed as the number of children or parents who completed the survey (the *respondent sample)* out of the number who were eligible to complete the survey (the *fielded sample)*. In the case of the child assessments, the fielded sample includes only parents who had already completed the 36-month interview on employment, earnings, and income (90 percent of the parents in the baseline sample). Across all of the child assessments, the response rate was 81 percent (the proportion of children on which any data were collected). Response rates were 77 percent for the parent survey, 77 percent for the PPVT-R, 67 percent for the math test, and 64 percent for the child surveys.[1] These response rates, particularly for the math test and the child surveys, are quite low. Therefore, close scrutiny of differences between responders and non-responders is necessary to ensure that there is no bias to the impact estimates presented in this report.

[1]The response rate was higher for the child survey conducted with the 10- to 14-year-olds (66 percent) than for the child survey conducted with the 15- to 18-year-olds (57 percent).

Response rates were very similar between program and control groups (at most three percentage points). In no instance is the difference in program and control groups in response rates statistically significant. If non-responders in the program and control groups are similar, then the impact estimates presented in this report should not be biased. This is examined in the section that follows.

MEASURES OF BASELINE CHARACTERISTICS

Table A.1 presents baseline characteristics of the eligible baseline sample (those families who, given the ages of their children at baseline, should have completed a child assessment) and the respondent sample (those families who completed a child assessment). For each measure, the sample mean (the mean of the program and control groups combined) of the eligible baseline sample is presented in the first column, and the difference between the program group and the control group for this sample is shown in the second column. The third and fourth columns contain the same information for the respondent sample. The fifth column compares the means on the baseline measures for the two samples. This column can provide information about the extent to which the respondent sample is similar to the eligible baseline sample. The final column provides information on whether differences between the program and control groups differ between the two samples. That is, this column indicates the extent to which the program and control groups are more or less different in the responding sample than in the eligible baseline sample. Because impact estimates are based on program-control differences, it is very critical that baseline measures of the program and control groups be similar. If non-response makes the program and control groups dissimilar, then impact estimates based on the responding sample would be biased.

The analysis suggests that there are some differences in sample means between the baseline sample and the responding sample. More specifically, the baseline sample was less likely to be female, less likely to be young, and less likely to be never married (rather than divorced, separated, or widowed). In terms of welfare and work history, baseline sample members were more likely to be short-term welfare recipients (although they had received higher average welfare payments), and more likely to have ever had a paid job. These findings suggest that the least disadvantaged members of the eligible baseline sample were non-respondents. The eligible baseline sample was less likely to report that child care or school, and more likely to report that an illness, personal responsibility, and competition, were reasons for not working. Members were less likely to feel that they could find child care, and more likely not to need child care, suggesting that more sample members with older children were non-respondents. This suggestion is consistent with the lower response rates for the older than for the younger children in the sample. In addition, the eligible baseline sample was more likely to be of First Nation ancestry. There is a slightly higher proportion of first cohort sample members in the eligible baseline sample, and a slightly higher proportion of families from British Columbia.

Table A.1: Comparison of Eligible Baseline Sample and Respondent Sample in Baseline Characteristics of Parents

Characteristic	Eligible Baseline Sample[a] Sample Mean	Eligible Baseline Sample[a] Difference in Program/Control Groups	Respondent Sample[b] Sample Mean	Respondent Sample[b] Difference in Program/Control Groups	Difference in Sample Means	Difference in Program/Control Group Differences
Gender (%)						
Female	93.35	-0.58	97.21	-0.30	-3.86 ***	0.27
Age (%)						
19-24	19.49	-1.22	23.22	-0.64	-3.73 ***	0.58
25-29	21.16	0.17	23.74	-0.34	-2.58 *	-0.51
30-39	42.93	0.71	40.73	0.35	2.20	-0.36
40-49	14.31	-0.41	11.22	0.34	3.09 ***	0.75
50 or older	2.11	0.75 **	1.08	0.28	1.03 **	-0.46 *
Marital status (%)						
Never married	44.05	-0.62	52.18	-0.64	-8.13 ***	-0.02
Divorced, separated, or widowed	53.59	0.82	45.71	0.94	7.88 ***	0.12
Education						
Completed education (%)						
Less than high school education	52.28	-0.41	53.00	-1.74	-0.72	-1.34
Completed high school, no post-secondary education	34.94	2.20	35.97	2.23	-1.03	0.04
Some post-secondary education	12.78	-1.79 **	11.03	-0.49	1.75	1.30
Enrolled in school at baseline (%)	13.94	0.25	14.34	0.46	-0.40	0.21
Recent welfare history						
Number of months on Income Assistance in prior 3 years (%)						
10-23	27.06	-2.54 **	22.07	-2.20	4.99 ***	0.33
24-35	31.87	-0.37	34.91	-0.60	-3.04 *	-0.23
All 36	41.07	2.91 **	43.02	2.80	-1.95	-0.11
Average IA payment in prior month ($)	889.39	7.61	852.87	1.93	36.53 ***	-5.67
Work history and labour force status						
Ever had a paid job (%)	95.97	0.82	93.96	1.32	2.01 **	0.50
Average years worked	7.60	0.02	6.58	0.05	1.01 ***	0.04
Labour force status at baseline (%)						
Employed 30 hours/week	6.51	-1.08	7.06	-0.83	-0.55	0.26
Employed < 30 hours/week	12.68	0.45	13.25	-0.26	-0.57	-0.71
Looking for work, not employed	22.89	-0.49	22.01	-1.56	0.88	-1.07
Neither employed nor looking for work	57.92	1.12	57.68	2.65	0.24	1.53 *
Activity-limiting conditions (%)						
Reported physical problem[c]	24.98	-1.55	23.51	-0.60	1.47	0.95
Reported emotional problem[d]	8.17	1.15	7.01	1.71 *	1.16	0.56
Emotional well-being						
At risk for depression (%)	27.16	0.01	26.18	-0.37	0.98	-0.38
Children						
Number of children under age 19 (%)						
1	47.29	-1.99	46.27	-1.92	1.02	0.07
2	36.16	2.35 *	36.80	1.90	-0.64	-0.45
3 or more	16.55	-0.36	16.93	0.03	-0.38	0.39
Not working and couldn't take a job in prior 4 weeks because of (%)[e]						
Any reason	55.18	2.49 *	52.20	3.23 *	2.98 *	0.74
Own illness or disability	14.22	0.41	11.79	1.68	2.43 **	1.27 **
Lack of adequate child care	13.78	0.24	16.10	-1.10	-2.32 *	-1.34
Personal or family responsibility	23.88	0.60	21.18	1.74	2.70 *	1.15
Going to school	7.11	-0.20	9.34	-0.31	-2.23 **	-0.10
No transportation	6.32	0.23	7.72	0.23	-1.40	0.00
Too much competition	3.78	-0.09	1.83	-0.23	1.95 ***	-0.15
Not enough education	8.87	0.32	9.00	-0.11	-0.13	-0.43
Not enough experience or skills	7.81	0.09	8.03	-0.52	-0.22	-0.61
Other	6.93	1.31 *	5.55	0.92	1.38 *	-0.40

(continued)

Table A.1: Comparison of Eligible Baseline Sample and Respondent Sample in Baseline Characteristics of Parents (Cont'd)

Characteristic	Eligible Baseline Sample[a] Sample Mean	Eligible Baseline Sample[a] Difference in Program/Control Groups	Respondent Sample[b] Sample Mean	Respondent Sample[b] Difference in Program/Control Groups	Difference in Sample Means	Difference in Program/Control Group Differences
Opinions and expectations						
"If I got a job, I could find someone I trust to take care of my children" (%)						
Agree	65.08	-1.05	70.85	-1.51	-5.77 ***	-0.47
Disagree	17.77	0.19	18.41	0.52	-0.64	0.33
No care required	17.15	0.85	10.74	0.99	6.41 ***	0.14
Ethnic background (%)						
First Nation ancestry	10.26	0.07	8.57	0.39	1.69 *	0.33
Asian ancestry	3.86	0.33	4.81	-0.19	-0.95	-0.52
French-speaking	11.82	-0.74	13.56	0.30	-1.74	1.04
Immigration (%)						
Not born in Canada	13.50	-0.43	13.10	-1.01	0.40	-0.58
Immigrated in last 5 years	1.93	-0.37	2.76	-0.63	-0.83	-0.26
Period of intake (%)						
November 1992-October 1993	39.49	0.81	33.89	-0.01	5.60 ***	-0.82
January 1994-March 1995	60.51	-0.81	66.11	0.01	-5.60 ***	0.82
Province (%)						
British Columbia	61.30	1.05	48.47	-0.55	12.83 ***	-1.61
New Brunswick	38.70	-1.05	51.53	0.55	-12.83 ***	1.61
Sample size	**4,373**		**3,231**			

Sources: Calculations from the baseline survey and IA administrative records.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, differences in outcomes between sample means, and differences in treatment group differences. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "eligible baseline sample" is made up of parents who completed a baseline survey and who would be eligible (on the basis of child age) to complete a child assessment.

[b]The "respondent sample" is made up of parents who responded to the parent survey and the parents of children who responded to the child surveys and tests.

[c]Sample members were considered to have an activity-limiting physical condition if they answered yes to any of the following: "Do you have a long-term physical condition that limits you in the kind or amount of activity you can do (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?" Those who were not working generally did not answer the "at work" part of the question, so their classifications are based on answers to other parts. The conditions reported were not necessarily permanent. Of the sample members who reported an activity-limiting physical condition at the baseline interview, over one-third indicated no such problems at the 18-month follow-up interview.

[d]Sample members were considered to have an activity-limiting emotional condition if they answered yes to any of the following: "Are you limited in the kind or amount of activity you can do because of a long-term emotional, psychological, nervous, or mental health condition or problem (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?"

[e]Multiple responses allowed.

Despite these differences in sample means, there are very few differences between treatment and control groups in the responding sample, and the responding sample does not have more differences between the treatment groups than the eligible baseline sample. More specifically, the only statistically significant differences in the respondent sample were in whether the respondent reported having an emotional problem and in whether the respondent mentioned a reason for not working. There are only three measures in which the differences in the program and control groups were different for the eligible baseline and the respondent sample: in the proportion of mothers over 50, in the proportion of sample members neither employed nor looking for work, and in the proportion of sample members mentioning that they could not work in the four weeks prior to baseline because of an illness or disability. This analysis suggests that the program and control groups in the respondent sample are very

similar, and as similar as the program and control groups in the eligible baseline sample. Therefore, non-respondents must have been similar in the program and control groups.

The same analysis was conducted to compare the fielded sample (those families who had completed the 36-month interview and were eligible to complete a child assessment) with the respondent sample. The results are presented in Table A.2. Many of the same differences in sample means emerged in this analysis as in the comparison of the respondent sample and the eligible baseline sample. More specifically, members of the fielded sample were less likely to be female and were less likely to be never married at random assignment (rather than divorced, separated, or widowed). The fielded sample families were somewhat less at risk in terms of their educational, work, and welfare history, being more likely to have had some post-secondary education, more likely to have received welfare for a short period, and more likely to have ever had a paid job. Again, this suggests that non-respondents were less at risk than respondents. Finally, they were more likely to be in the second cohort and from British Columbia. More importantly for the estimate of program impacts, program and control groups were still similar in the respondent sample, and, except for a few measures, program and control groups are as similar in the responding sample as in the fielded sample.

Table A.2: Comparison of Fielded Sample and Respondent Sample in Baseline Characteristics of Parents

Characteristic	Fielded Sample[a] Sample Mean	Fielded Sample[a] Difference in Program/Control Groups	Respondent Sample[b] Sample Mean	Respondent Sample[b] Difference in Program/Control Groups	Difference in Sample Means	Difference in Program/Control Group Differences
Gender (%)						
Female	95.42	0.45	97.24	-0.29	-1.82 ***	0.16
Age (%)						
19-24	20.62	1.76	23.36	-0.47	-2.74	1.29 *
25-29	24.12	0.07	23.69	-0.42	0.43	-0.49
30-39	41.64	0.77	40.72	0.29	0.92	-0.48
40-49	11.86	0.35	11.16	0.33	0.70	-0.01
50 or older	1.75	0.58 *	1.08	0.27	0.67	-0.31 *
Marital status (%)						
Never married	46.97	-1.02	52.22	-0.59	-5.25 ***	0.43
Divorced, separated, or widowed	50.74	1.31	45.69	0.90	5.05 **	-0.41
Education						
Completed education (%)						
Less than high school education	50.07	-0.66	52.92	-1.80	-2.85	-1.14
Completed high school, no post-secondary education	36.34	1.69	35.96	2.24	0.38	0.55
Some post-secondary education	13.59	-1.03	11.12	-0.44	2.47 *	0.59
Enrolled in school at baseline (%)	15.88	-0.15	14.49	0.55	1.39	0.70
Recent welfare history						
Number of months on Income Assistance in prior 3 years						
10-23	28.80	-3.10 **	22.22	-2.26	6.58 ***	0.83
24-35	33.24	-1.09	34.95	-0.50	-1.71	0.59
All 36	37.95	4.19 ***	42.84	2.76	-4.89 **	-1.42 *
Average IA payment in prior month ($)	897.70	9.02	853.02	3.17	44.68 ***	-5.85
Work history and labour force status						
Ever had a paid job (%)	97.04	1.19 *	93.99	1.29	3.05 ***	0.10
Average years worked	7.52	0.06	6.57	0.04	0.95 ***	-0.02
Labour force status at baseline (%)						
Employed 30 hours/week	7.04	-0.96	7.00	-0.86	0.04	0.10
Employed < 30 hours/week	13.67	-0.31	13.16	-0.40	0.51	-0.10
Looking for work, not employed	23.00	-1.00	22.10	-1.74	0.90	-0.75
Neither employed nor looking for work	56.29	2.27	57.74	3.01 *	-1.45	0.74
Activity-limiting conditions (%)						
Reported physical problem[c]	22.48	-0.37	23.55	-0.50	-1.07	-0.12
Reported emotional problem[d]	5.53	1.70 **	7.04	1.83 **	-1.51	0.13
Emotional well-being						
At risk for depression (%)	24.66	0.31	26.42	-0.11	-1.76	-0.41

(continued)

Table A.2: Comparison of Fielded Sample and Respondent Sample in Baseline Characteristics of Parents (Cont'd)

Characteristic	Fielded Sample[a] Sample Mean	Fielded Sample[a] Difference in Program/Control Groups	Respondent Sample[b] Sample Mean	Respondent Sample[b] Difference in Program/Control Groups	Difference in Sample Means	Difference in Program/Control Group Differences
Children						
Number of children under age 19 (%)						
1	45.63	-2.93 *	46.21	-1.88	-0.58	1.05
2	37.55	2.68 *	36.48	1.67	1.07	-1.01
3 or more	16.42	0.17	16.78	-0.08	-0.36	-0.24
Not working and couldn't take a job in prior 4 weeks because of (%)[c]						
Any reason	53.17	4.03 **	52.40	3.43 *	0.77	-0.60
Own illness or disability	11.35	2.02 **	11.84	1.77	-0.49	-0.25
Lack of adequate child care	15.14	0.53	16.27	-0.83	-1.13	-1.36 **
Personal or family responsibility	23.65	1.22	21.28	1.90	2.37	0.69
Going to school	8.24	-0.68	9.32	-0.24	-1.08	0.45
No transportation	6.62	0.90	7.81	0.49	-1.19	-0.41
Too much competition	4.46	0.05	1.94	-0.25	2.52 ***	-0.30
Not enough education	9.73	0.17	9.07	0.02	0.66	-0.15
Not enough experience or skills	7.84	-0.16	8.06	-0.38	-0.22	-0.22
Other	6.88	1.19	5.56	0.75	1.32	-0.44
Opinions and expectations						
"If I got a job, I could find someone I trust to take care of my children" (%)						
Agree	69.57	-1.06	70.73	-1.69	-1.16	-0.63
Disagree	18.34	0.51	18.59	0.83	-0.25	0.32
No care required	12.09	0.55	10.68	0.86	1.41	0.31
Ethnic background (%)						
First Nation ancestry	9.45	0.24	8.56	0.46	0.89	0.23
Asian ancestry	4.59	0.51	4.92	-0.28	-0.33	-0.79 **
French-speaking	11.57	-0.27	13.66	0.52	-2.09	0.79
Immigration (%)						
Not born in Canada	14.54	0.36	13.26	-1.15	1.28	-1.51 ***
Immigrated in last 5 years	1.88	-0.35	2.89	-0.71	-1.01	-0.36
Period of intake (%)						
November 1992-October 1993	28.40	0.19	34.06	-0.04	-5.66 ***	-0.23
January 1994-March 1995	71.60	-0.19	65.94	0.04	5.66 ***	0.23
Province (%)						
British Columbia	62.18	0.18	48.57	-0.66	13.61 ***	-0.84
New Brunswick	37.82	-0.18	51.43	0.66	-13.61 ***	0.84
Sample size	**4,002**		**3,259**			

Sources: Calculations from the baseline survey and IA administrative records.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, differences in outcomes between sample means, and differences in treatment group differences. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "fielded sample" is made up of parents who completed a 36-month core survey and who were in families selected to complete the child assessments.

[b]The "respondent sample" is made up of parents who responded to the surveys and the parents of children who responded to the child surveys and tests and is a subset of the "fielded sample."

[c]Sample members were considered to have an activity-limiting physical condition if they answered yes to any of the following: "Do you have a long-term physical condition that limits you in the kind or amount of activity you can do (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?" Those who were not working generally did not answer the "at work" part of the question, so their classifications are based on answers to other parts. The conditions reported were not necessarily permanent. Of the sample members who reported an activity-limiting physical condition at the baseline interview, over one-third indicated no such problems at the 18-month follow-up interview.

[d]Sample members were considered to have an activity-limiting emotional condition if they answered yes to any of the following: "Are you limited in the kind or amount of activity you can do because of a long-term emotional, psychological, nervous, or mental health condition or problem (a) at home? (b) at school? (c) at work? (d) in other activities such as travel, sports, or leisure?"

[e]Multiple responses allowed.

These results give us some confidence that despite the high levels of non-response, impact estimates based on the responding sample should represent valid estimates of the program impacts. While the analysis suggests that the responders are different from non-responders, these differences did not make the program and control groups dissimilar. While these results lend greater credence to the estimates of the program impacts, it is unclear what the program impacts would have been if all families had participated in the child assessments.

ECONOMIC OUTCOMES

Because data are available for both the fielded sample and the respondent sample on employment, income, public assistance, and earnings, responders can be compared with non-responders on these economic measures as well. Two comparisons between responders and non-responders are made: in control group levels and in program impacts. In order to conduct this analysis, respondent and fielded samples in each of four components of the child assessments are examined separately: (1) parent survey, (2) PPVT-R, (3) math test, and (4) adolescent survey. These analyses were conducted to examine in greater detail whether the analyses conducted on the child assessments with lower response rates are more likely to be biased than the analyses conducted on the child assessments with higher response rates.

Tables A.3–A.6 show the fielded sample and the respondent sample for each of the child assessments (the parent survey, the PPVT-R, the math test, and the child survey); control group means and program impacts are presented for both of these samples. The first two columns present control group means and program impacts on economic outcomes, respectively, for the fielded sample. (The program group level is not shown.) The second two present the same data for the respondent sample. The fifth column compares the levels of the control groups in the two samples, and the sixth presents the difference in the impact estimates for the two samples.

A comparison of the control group means for each of the child assessments suggests very little difference between the fielded and respondent samples in economic outcomes. The parent survey (Table A.3) and the adolescent survey (Table A.6) show the only significant differences between the control groups. Parents in the respondent sample for the parent survey had slightly higher rates of ever being employed since random assignment than parents in the fielded sample for the parent survey, but this difference is very small (only one percentage point). Parents in the respondent sample for the adolescent survey had slightly higher rates of being employed full time in the six months prior to the 16-month follow-up than parents in the fielded sample for the adolescent survey, but this difference is also quite small. The differences between control group levels are not significant for the other outcomes on these assessments and for all outcomes on the other assessments (the PPVT-R and the math test).

Table A.3: Comparison of the Parent Survey Fielded Sample and Parent Survey Respondent Sample in Economic Outcomes Over the 36-Month Follow-Up

Outcome	Parent Survey Fielded Sample[a] Control Group	Parent Survey Fielded Sample[a] Program/Control Group Difference (Impact)		Parent Survey Respondent Sample[b] Control Group	Parent Survey Respondent Sample[b] Program/Control Group Difference (Impact)		Difference in Control Groups	Difference in Impacts
Employment, months 1 to 34[c]								
Months employed	10.10	2.39	***	10.31	2.62	***	-0.20	0.22
Months employed full time[d]	5.14	3.32	***	5.18	3.50	***	-0.04	0.18
Employment since random assignment (%)[c]								
Ever employed	59.12	8.01	***	60.30	8.69	***	-1.18 *	0.68
Employed full time[d]	39.97	11.74	***	40.36	12.62	***	-0.39	0.88
Monthly earnings and income, months 1 to 34[c]								
Earnings ($)	232.15	79.81	***	229.36	90.94	***	2.79	11.13
Income from Income Assistance ($)	710.65	-72.71	***	709.07	-79.35	***	1.58	-6.65
Total income from earnings, Income Assistance, and SSP ($)	953.81	152.26	***	948.75	161.46	***	5.06	9.19
Employment and income 6 months prior to interview								
Employed full time (%)	24.20	9.17	***	23.98	9.91	***	0.22	0.74
Monthly family pre-tax income ($)	1,460.46	148.40	***	1,449.06	173.22	***	11.41	24.82
Monthly income below low-income cut-off (%)	85.90	-7.91	***	86.01	-8.91	***	-0.11	-1.00 *
Sample size	**1,984**	**4,001**		**1,514**	**3,075**			

Sources: Calculations from IA administrative records, the 36-month parent survey, the 18-month core survey, and the 36-month core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, control group means, and impacts. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "parent survey fielded sample" is made up of parents who completed a core survey and who were selected to complete the parent survey.

[b]The "parent survey respondent sample" is made up of parents who responded to the parent survey and is a subset of the "parent survey fielded sample."

[c]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[d]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

Table A.4: Comparison of Peabody Picture Vocabulary Test-Revised (PPVT-R) Fielded Sample and PPVT-R Respondent Sample in Economic Outcomes Over the 36-Month Follow-Up

Outcome	PPVT-R Fielded Sample[a] Control Group	PPVT-R Fielded Sample[a] Program/Control Group Difference (Impact)	PPVT-R Respondent Sample[b] Control Group	PPVT-R Respondent Sample[b] Program/Control Group Difference (Impact)	Difference in Control Groups	Difference in Impacts
Employment, months 1 to 34[c]						
Months employed	9.21	2.93 ***	9.33	3.07 ***	-0.12	0.14
Months employed full time[d]	4.77	3.82 ***	4.79	3.92 ***	-0.02	0.10
Employment since random assignment (%)[c]						
Ever employed	58.21	11.60 ***	57.84	13.31 ***	0.37	1.71
Employed full time[d]	39.40	15.53 ***	38.88	16.61 ***	0.52	1.09
Monthly earnings and income, months 1 to 34[c]						
Earnings ($)	219.45	92.83 ***	212.45	110.73 ***	7.00	17.90
Income from Income Assistance ($)	718.93	-85.66 ***	727.74	-86.74 ***	-8.82	-1.08
Total income from earnings, Income Assistance, and SSP ($)	941.81	161.79 ***	946.07	178.63 ***	-4.26	16.83
Employment and income 6 months prior to interview						
Employed full-time (%)	23.92	10.04 ***	23.47	10.74 ***	0.45	0.70
Monthly family pre-tax income ($)	1,516.11	127.22 **	1,500.01	156.49 ***	16.10	29.27
Monthly income below low-income cut-off (%)	85.16	-8.28 ***	85.81	-8.88 ***	-0.65	-0.60
Sample size	**962**	**1,896**	**733**	**1,461**		

Sources: Calculations from IA administrative records, the 18-month follow-up core survey, and the 36-month follow-up core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, control group mean, and impacts. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "PPVT-R fielded sample" is made up of parents who completed a core survey and whose children were selected to complete the PPVT-R.

[b]The "PPVT-R respondent sample" is made up of parents of children who completed the PPVT-R and is a subset of the "fielded sample."

[c]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[d]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

Table A.5: Comparison of Math Test Fielded Sample and Math Test Respondent Sample in Economic Outcomes Over the 36-Month Follow-Up

Outcome	Math Test Fielded Sample[a] Control Group	Math Test Fielded Sample[a] Program/Control Group Difference (Impact)		Math Test Respondent Sample[b] Control Group	Math Test Respondent Sample[b] Program/Control Group Difference (Impact)		Difference in Control Groups	Difference in Impacts
Employment, months 1 to 34[c]								
Months employed	10.32	2.00	***	10.14	2.37	***	0.18	0.37
Months employed full time[d]	5.34	2.89	***	5.19	3.20	***	0.15	0.30
Employment since random assignment (%)[c]								
Ever employed	59.30	5.49	***	58.13	6.92	***	1.17	1.43
Employed full time[d]	40.70	8.70	***	39.60	9.83	***	1.10	1.13
Monthly earnings and income, months 1 to 34[c]								
Earnings ($)	237.44	71.80	***	224.06	87.53	***	13.37	15.72
Income from Income Assistance ($)	717.28	-55.95	***	728.46	-69.68	***	-11.18	-13.74
Total income from earnings, Income Assistance, and SSP ($)	971.95	154.59	***	970.37	160.41	***	1.58	5.83
Employment and income 6 months prior to interview								
Employed full time (%)	24.80	7.25	***	23.59	8.14	***	1.21	0.89
Monthly family pre-tax income ($)	1,484.89	146.11	***	1,471.62	198.28	***	13.27	52.17
Monthly income below low-income cut-off (%)	85.64	-6.94	***	86.64	-8.63	***	-1.00	-1.70
Sample size	**1,194**	**2,455**		**788**	**1,663**			

Sources: Calculations from IA administrative records, the 18-month follow-up core survey, and the 36-month follow-up core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, control group means, and impacts. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "math test fielded sample" is made up of parents who completed a core survey and whose children were selected to complete the math test.

[b]The "math test respondent sample" is made up of parents of children who completed the math test and is a subset of the "math test fielded sample."

[c]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[d]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

Table A.6: Comparison of Adolescent Survey Fielded Sample and Adolescent Survey Respondent Sample in Economic Outcomes Over the 36-Month Follow-Up

Outcome	Adolescent Survey Fielded Sample[a] Control Group	Adolescent Survey Fielded Sample[a] Program/Control Group Difference (Impact)	Adolescent Survey Respondent Sample[b] Control Group	Adolescent Survey Respondent Sample[b] Program/Control Group Difference (Impact)	Difference in Control Groups	Difference in Impacts
Employment, months 1 to 34[c]						
Months employed	10.28	2.26 ***	9.94	2.49 ***	0.34	0.24
Months employed full time[d]	5.10	3.06 ***	5.05	3.15 ***	-2.50	0.09
Employment since random assignment (%)[c]						
Ever employed	57.88	7.43 ***	56.89	8.32 ***	0.99	0.89
Employed full time[d]	38.28	10.87 ***	38.19	10.36 ***	0.09	-0.51
Monthly earnings and income, months 1 to 34[c]						
Earnings ($)	233.92	68.31 ***	219.92	68.91 ***	14.00	0.60
Income from Income Assistance ($)	722.82	-61.69 ***	731.67	-67.25 ***	-8.86	-5.56
Total income from earnings, Income Assistance, and SSP ($)	970.36	144.02 ***	966.73	143.34 ***	3.63	-0.68
Employment and income 6 months prior to interview						
Employed full time (%)	23.64	8.22 ***	22.19	9.99 ***	1.45 *	1.77
Monthly family pre-tax income ($)	1,438.45	138.45 ***	1,432.10	163.51 ***	6.35	25.07
Monthly income below low-income cut-off (%)	87.99	-7.79 ***	87.80	-7.62 ***	0.19	0.16
Sample size	**990**	**2,048**	**630**	**1,321**		

Sources: Calculations from IA administrative records, the 18-month follow-up core survey, and the 36-month follow-up core survey.

Notes: A two-tailed test was applied to differences between the outcomes for the program and control groups, control group means, and impacts. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Rounding may cause slight discrepancies in sums and differences.

[a]The "adolescent survey fielded sample" is made up of parents who completed a core survey and whose children were selected to complete the child survey.

[b]The "adolescent survey respondent sample" is made up of parents of children who responded to the adolescent survey and is a subset of the "adolescent survey fielded sample."

[c]Although information on employment comes from the 36-month follow-up core survey, some sample members were interviewed as early as month 35, so that the valid information on employment and earnings is available through month 34 only. Therefore, results related to employment and earnings are shown only through 34 months.

[d]Full-time employment is defined as working 30 hours or more per week in at least one week during the month.

Differences in program impacts were also extremely rare. For the PPVT-R, the math test, and the child surveys, there are no statistically significant differences in program impacts on economic outcomes for the fielded and the respondent samples. Only one difference for the parent survey sample is significant, indicating a slightly lower impact on the percentage of families below the low-income cut-off in the fielded sample than in the respondent sample; all other program impacts are not significantly different. These analyses suggest that non-response did not bias the impact estimates on the economic outcomes for those who responded to the child assessments. While it cannot be concluded that non-response did not bias the impact estimates on the child outcomes, non-response bias seems less likely given the similarity in impacts on the adult economic outcomes.

PARENTAL REPORT OF CHILD OUTCOMES

Because the adolescent surveys had such low response rates (particularly for the older cohort), it was important to examine whether there might be biases in the impact estimates on measures of children's functioning. Unfortunately, it is not possible to examine data on adolescent surveys for children who did not complete such a survey. However, it is possible to examine data on children's outcomes collected via the *parent survey* for both the responders and the non-responders to the adolescent survey, since most children who completed a child survey had a parent who completed a parent survey. Therefore, differences in impacts on parental report measures were examined for the respondent and fielded samples of the child surveys. Because there was greatest concern about the data collected on the older cohort of children, this analysis focussed only on these children (ages 12–18). The results indicate what the impacts on the parent survey measures would have been if only the children who completed the child surveys were analyzed. The results of these analyses are presented in Table A.7.

On all but one of the variables examined, average levels for the control group are similar in the fielded sample and the respondent sample. The only exception is for parental report of children's grade repetition, where the parents in the respondent sample for the adolescent survey reported a lower likelihood of their children repeating a grade than did those in the fielded sample. There are no significant differences in other aspects of children's school functioning, however, nor are there any differences in levels of behaviour problems in school or health functioning. The one significant difference suggests the small possibility that the respondent sample was less at risk than the fielded sample, but there is not strong evidence that this is the case.

Because the analyses in this report focus on differences between program and control groups, rather than differences in levels, it was important to determine whether there was any bias to the program impacts on parental report outcomes in the respondent sample. These results are presented in the last column in Table A.7. For most outcomes, there is no significant difference in program impacts in the fielded and respondent adolescent survey samples. For parental report of school behaviour problems, however, impacts are significantly different in the fielded and respondent sample. While there is a positive program impact in both samples (with the program group having higher levels of school behaviour problems than the control group), the fielded sample has a larger program impact than the respondent sample (and the impact is statistically significant only in the fielded sample).

Table A.7: Comparison of Adolescent Survey Fielded Sample and Adolescent Survey Respondent Sample in Parental Report of Child Outcomes for Older Cohort Children

Outcome	Adolescent Survey Fielded Sample[a] Control Group	Adolescent Survey Fielded Sample[a] Program/Control Difference (Impact)	Adolescent Survey Respondent Sample[b] Control Group	Adolescent Survey Respondent Sample[b] Program/Control Difference (Impact)	Difference in Control Groups	Difference in Impacts
Academic functioning						
Average achievement[c]	3.56	-0.11 *	3.56	-0.09	0.00	0.02
Below-average, any subject (%)	32.52	0.21	32.74	-1.71	-0.22	-1.92
Any grade repeated (%)	35.18	2.70	32.65	4.20	2.53 **	1.50
Dropped out of school (ages 15-18) (%)	8.82	2.89	7.54	3.23	1.29	0.34
Behaviour and emotional well-being						
School behaviour problems[d]	1.33	0.06 *	1.31	0.02	0.02	-0.04 *
Health						
Average health[e]	4.13	-0.06	4.16	-0.07	-0.02	0.00
Any long-term problems (%)	38.80	0.36	38.31	-0.59	0.49	-0.95
Sample size	**619**	**1,297**	**449**	**965**		

Source: Calculations from the 36-month follow-up parent survey and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

A two-tailed test was applied to differences between the outcomes for the program and control groups, control group means, and impacts. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

[a]The "adolescent survey fielded sample" is made up of children in families in which a core survey was completed and who were selected to complete the child survey.

[b]The "adolescent survey respondent sample" is made up of children who responded to the adolescent survey and is a subset of the "adolescent survey fielded sample."

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 4 ("5 or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

This suggests that if the parental survey data were analyzed only for children who completed the adolescent survey, the program impact on children's school behaviour problems would have been underestimated, not overestimated. Data presented in Chapter 3 suggest that SSP increased minor delinquent behaviours among adolescents. Given the low response rates, however, there was some concern that these program impacts were overestimated. More specifically, there was some concern that the higher levels of delinquent behaviours in the program group relative to the control group were due to differences in non-response in the two groups, rather than to any true effect of SSP. This analysis suggests that it is unlikely that the higher levels of minor delinquent behaviour are due to non-response bias. For most measures analyzed, there are no differences between the program impacts in the fielded sample and the program impacts in the respondent sample. In the area of children's behaviour, where the most consistent program impacts were found in the adolescent survey measures, the data suggest that the impacts may be underestimated in the respondent sample. While this analysis is limited by the small number of parental report measures for this age cohort of children, it does suggest there is little evidence of bias in the impacts on children's outcomes.

SUMMARY

These analyses suggest little evidence of biases in the impact estimates presented in this report. While there are some differences between the fielded and the respondent samples, these differences did not reflect differences between the program and control groups in baseline characteristics in the respondent sample. Also, analyses of differences between fielded and respondent samples in impacts on parental economic outcomes and on parental reports of children's outcomes do not suggest that the impact estimates based on the assessments with low response rates will be biased. Because it is impossible to know what the analyses would have been if more of the fielded sample had responded to the child assessments, however, caution is in order in interpreting the results of this study.

Appendix B:
Measures of Child and Family Functioning

This appendix describes each of the measures of child and family functioning used in this study, including technical information about these measures. A brief description of each measure is provided, along with any relevant psychometric information.

CHILD OUTCOMES

Cognitive Performance

PPVT-R score. Children ages 4–7 years were administered a Peabody Picture Vocabulary Test–Revised (PPVT-R), a test of children's receptive language ability (that is, their understanding of language). French-speaking children were administered the Échelle de vocabulaire en Images Peabody (EVIP), a test comparable to the PPVT-R. Scores on the EVIP are not equivalent to scores on the PPVT-R;[1] therefore, the French- and English-speaking children were analyzed separately. Unfortunately, the sample of children who chose to answer the test in French was too small to allow an analysis of the impact of SSP on children's functioning on the EVIP. The children's standardized PPVT-R score was computed on the basis of raw score calculations. English-speaking children's scores were converted to standard scores according to standards provided by the American Guidance Service.

Math score. A math skills test was administered to children ages 7–14 in grades 2–7. The level of the test administered was determined by the children's grade level in school. The test consisted of 26 math problems for those in Grade 2 and 34 items for those in Grade 3 and above. The test administered included a subset of items from the Canadian Achievement Tests, Second Edition (CAT/2), a mathematics test developed by the Canadian Test Centre that is administered annually in all provinces to approximately 300,000 students from Grade 2 up to the end of secondary school and college. The proportion of correct items completed out of the total number of test items was computed for each child.

Academic Achievement

Children's functioning in school was assessed by means of the parent and child surveys for children of school age (6–18 years). Parents were asked about children's functioning in three academic subjects on a 5-point scale ranging from "not very well at all" to "very well." The academic subjects considered depended on the child's age. For 6- to 14-year-olds, parents were asked about children's functioning in reading, writing, and math. For 15- to 18-year-olds, parents were asked about children's functioning in writing, math, and science.

[1]Marta Fahrenz, American Guidance Service, personal communication, May 1999.

Children ages 10–18 were asked about their functioning in English, math, and science. The following two measures were created from these scores:

Average achievement. An average score across the three academic subjects was computed, ranging from 1 ("not very well at all") to 5 ("very well").

Below average in any subject. Children who scored below a score of 3 ("average") on any one of the three academic subjects considered were scored as 100. Children who scored 3 or higher in all three academic subjects were considered average or above and scored as 0.

Two additional measures of academic achievement were also analyzed:

Grade repetition. Parents were asked whether their children had repeated any grade level in school. Children who had repeated a grade level were scored as 100, and children who had not were scored as 0.

School dropout. Parents were asked whether their 15- to 18-year-old children had dropped out of school. Children who had dropped out were scored as 100, and children who had not were scored as 0.

BEHAVIOUR AND EMOTIONAL WELL-BEING

Behaviour problems and prosocial behaviour. For children up to age 14, the parent and child surveys included a series of questions about children's behaviour. A slightly different set of items was asked of parents of three- to five-year-old children than of parents of children ages 6–14 and for children ages 10–14. All items were coded on a 3-point scale ranging from "never/not true" to "often/very true."

A confirmatory factor analysis using procrustes rotation was conducted on the items. A procrustes rotation is an oblique rotation that attempts to fit variables to factors as specified in a target matrix. In this instance, the target matrix specified four factors according to a priority theory. This analysis suggested that the items tapped four dimensions of children's functioning: (1) hyperactivity, with items such as "My child (I) can't sit still, is (am) restless, hyperactive," "My child is (I am) distractible, has (have) trouble sticking to any activity;" (2) conduct problems, with items such as "My child gets (I get) into many fights," "My child destroys (I destroy) things belonging to the family or other children;" (3) internalizing problems, with items such as "My child seems to be (I am) unhappy, sad, or depressed" and "My child cries (I cry) a lot;" and (4) positive social behaviour, with items such as "My child (I) will try to help someone who has been hurt" and "My child comforts (I comfort) children who are crying or upset." In general, the factor loadings supported the four-factor solution specified in the target matrix. In rare cases, individual items loaded on a different factor than predicted. In these cases, items were placed on a different factor from that which they most strongly loaded in order to maintain consistency across the items used in the scales for each of the three age groups. In these cases, the internal consistency was examined to ensure that the item did not detract from the internal consistency of the scale. See tables B.1–B.3 for information on the internal consistency of these individual subscales.

Table B.1: Behaviour Factor Analysis, Reports by Parents of Children Ages 3–5

Item	Behaviour Problems: Conduct Problems	Behaviour Problems: Hyperactivity	Behaviour Problems: Internalizing Problems	Positive Social Behaviour
Gets into many fights	**0.63**			
Reacts with anger with other children	**0.49**			
Cruel to others	**0.64**			
Kicks/bites/hits other children	**0.66**			
Has difficulty waiting his turn		**0.32**		
Cannot sit still		**0.63**		
Has trouble sticking to one activity		**0.77**		
Fidgets		**0.59**		
Cannot concentrate		**0.84**		
Impulsive		**0.46**		
Inattentive		**0.48**		
Gives up easily		**0.33**		
Cannot settle down for a short while		**0.73**		
Stares into space[a]		**0.18**	0.34	
Unhappy/sad/depressed			**0.48**	
Not as happy as other children			**0.40**	
Too fearful/anxious			**0.60**	
Worries			**0.60**	
Cries a lot			**0.37**	
Nervous/high-strung			**0.54**	
Has trouble enjoying herself			**0.35**	
Will try to help person who is hurt				**0.56**
Helps other kids				**0.59**
Comforts crying child				**0.63**
Helps children who feel ill				**0.75**
Praises work of less able kids				**0.55**
Alpha for scale	0.73	0.82	0.72	0.75

Source: Calculations from the 36-month follow-up parent survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown. Exceptions are otherwise noted.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never or not true") to 3 ("often or very true").

[a]The item "stares into space" was included on the hyperactivity scale to be consistent with the 6–14 and 10–14 behaviour scales and to be consistent with a priori theory.

The behaviour problems score was the average score across the items in the hyperactivity, internalizing, and conduct problems subscales. Scores on the total behaviour problems scale ranged from 1 ("never") to 3 ("often"). For the parental report measures, $\alpha = .87$ for the three- to five- year-olds and $\alpha = .92$ for the 6- to 14-year-olds. For the child report measure (ages 10–14 years) $\alpha = .89$. These α's suggest high internal reliability for this scale for each of the three scales.

Positive social behaviour was scored as the average score across the items in the positive social behaviour scale. Scores on the total prosocial scale ranged from 1 ("never") to 3 ("often"). For the parent report of the three- to five-year-olds, $\alpha = .75$; for the parent report of the 6- to 14-year-olds, $\alpha = .80$; and for child report measure, $\alpha = .75$. Again, these α's suggest high internal consistency for this scale.

Table B.2: Behaviour Factor Analysis, Reports by Parents of Children Ages 6–14

Item	Behaviour Problems: Conduct Problems	Behaviour Problems: Hyperactivity	Behaviour Problems: Internalizing Problems	Positive Social Behaviour
Steals at home	**0.51**			
Gets into many fights	**0.52**			
Destroys others' things	**0.68**			
Tells lies	**0.44**			
Physically attacks people	**0.65**			
Vandalizes	**0.64**			
Threatens others	**0.70**			
Cruel to others	**0.72**			
Steals outside the home	**0.57**			
Disobedient at school	**0.44**			
Destroys own things	**0.53**			
Cannot sit still		**0.66**		
Has difficulty waiting his turn		**0.41**		
Has trouble sticking to one activity		**0.83**		
Fidgets		**0.61**		
Cannot concentrate		**0.89**		
Impulsive		**0.47**		
Stares into space		**0.36**		
Has trouble paying attention		**0.83**		
Gives up easily		**0.43**		
Unhappy/sad/depressed			**0.66**	
Not as happy as other children			**0.58**	
Too fearful/anxious			**0.57**	
Worries			**0.71**	
Cries a lot			**0.42**	
Nervous/high strung			**0.50**	
Has trouble enjoying herself			**0.49**	
Will try to help person who is hurt				**0.51**
Helps other kids				**0.66**
Comforts crying child				**0.73**
Helps children who feel ill				**0.81**
Supports work others cannot do				**0.66**
Alpha for scale	0.85	0.87	0.79	0.80

Source: Calculations from the 36-month follow-up parent survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never or not true") to 3 ("often or very true").

School behaviour problems. Parents of children in school (ages 6–18) were asked how often in the past school year they were contacted by the school about children's behaviour problems in school. The scale ranged from 1 to 3, with 1 indicating the parent had not been contacted or had been contacted once, and 3 indicating the parent had been contacted four or more times.

Table B.3: Behaviour Factor Analysis, Child Reports, Ages 10–14

Item	Behaviour Problems: Conduct Problems	Behaviour Problems: Hyperactivity	Behaviour Problems: Internalizing Problems	Positive Social Behaviour
Steal at home	**0.49**			
Get into many fights	**0.36**			
Destroy others' things	**0.45**			
Tell lies	**0.39**			
Physically attack people	**0.63**			
Vandalize	**0.70**			
Threaten others	**0.73**			
Cruel to others	**0.68**			
Steal outside the home	**0.55**			
Destroy own things[a]	**0.21**			
Disobedient at school[a]	**0.34**	0.47		
Cannot sit still/restless		**0.60**		
Have difficulty awaiting my turn		**0.30**		
Have trouble sticking to one activity		**0.32**		
Fidget		**0.56**		
Cannot concentrate		**0.60**		
Impulsive		**0.40**		
Stare into space		**0.40**		
Have trouble paying attention[b]		**0.51**		
Give up easily[b]		**0.13**	0.37	
Too fearful/anxious[c]		0.37	**0.31**	
Unhappy/sad/depressed			**0.55**	
Not as happy as other children			**0.56**	
Worry			**0.56**	
Cry a lot			**0.56**	
Nervous/high strung			**0.50**	
Have trouble enjoying myself			**0.53**	
Will try to help person who is hurt				**0.48**
Help other kids				**0.59**
Comfort crying child				**0.71**
Helps children who feel ill				**0.72**
Support work others cannot do				**0.61**
Alpha for scale	0.82	0.77	0.75	0.75

Source: Calculations from the 36-month follow-up child survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown. Exceptions are otherwise noted.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never or not true") to 3 ("often or very true").

[a]These items were included on the conduct problems scale to be consistent with the 6–14 behaviour scale and to be consistent with a priori theory.

[b]These items were included on the hyperactivity scale to be consistent with the 6–14 behaviour scale and to be consistent with a priori theory.

[c]This item was included on the internalizing problems scale to be consistent with the 6–14 behaviour scale and to be consistent with a priori theory.

Frequency of delinquent activity. Children ages 10–18 were asked about the frequency of a number of delinquent acts. Example items included "Did you skip a day of school without permission?" "Did you get drunk? "Did you run away from home?" Except for one item about skipping school (which referred to the last month), all other items referred to the last six months. Children ages 10–14 were asked about only seven items, while children ages 15–18 were asked about a wider range of delinquent activity, including theft, starting fires, and using weapons. Each was scored on a scale of 1 ("never") to 4 ("5 or more times"). The average frequency across seven items for the 10- to 14-year-olds and 14 items for the 15- to 18-years-old was computed for each child. For the scale for the 10- to 14-year-olds, $\alpha = .78$; for the scale for the 15- to 18-year-olds, $\alpha = .72$. A factor analysis conducted on the two scales separately suggested that two subscales could be identified in common across the two age groups: (1) "staying out late," consisting of the frequency the child stayed out later than allowed and the frequency the child stayed out all night, and (2) "skipping school," consisting of the frequency the child skipped a day of school and the frequency the child skipped a class (see Tables B.4 and B.5). For the older children, two additional factors were identified from this analysis: (1) "illegal activity," consisting of the frequency the child was questioned by police, used a weapon in a fight, stole something of value over $100, or broke in someplace to steal something; and (2) "externalizing behaviour," consisting of the frequency the child beat up someone or threatened to beat up someone.

Table B.4: Delinquency Factor Analysis, Child Reports, Ages 10–14

Item	Staying Out Late	Skipping School	Factor 3
Stay out later than allowed	**0.98**		
Stay out all night	**0.52**		
Skip a day of school		**0.86**	
Skip class		**0.97**	
Get drunk[a]		0.57	
Questioned by police[a]			0.48
Ran away from home[a]			0.98

Source: Calculations from the 36-month follow-up child survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never") to 4 ("5 times or more").

[a]Items were not included on the scale because they were low-frequency items and/or they were not consistent with a priori theory.

Any smoking. Children ages 10–18 reported whether or not they smoked currently and the number of cigarettes they usually smoked. Children who currently smoked were scored as 100, and children who did not were scored as 0.

Alcohol use in the last week. Children ages 10–18 reported on their frequency of alcohol use. Children who reported weekly or more frequent alcohol use in the last six months were scored as 100, while children with less than weekly alcohol use were scored as 0.

Any drug use. Children ages 10–18 reported whether or not they had used any drugs in the last six months (not including inhalants). Children who had used drugs were scored as 100, while children who had not were scored as 0. For the children ages 15–18, separate

variables were created for "any marijuana use" and "any hard drug use," including the child's use of acid/LSD, PCP, ice, heroin, cocaine, crack, speed, or non-prescribed pills.

Table B.5: Delinquency Factor Analysis, Child Reports, Ages 15–18

Item	Staying out Late	Skipping School	Illegal Activity	Externalizing Behaviour
Stay out later than allowed	**0.82**			
Stay out all night	**0.76**			
Skip a day of school		**0.83**		
Skip class		**0.87**		
Destroy car parts[a]		0.46		
Get drunk[a]		0.45		
Questioned by police			**0.42**	
Used a weapon in a fight			**0.81**	
Stole something valued over $100			**0.81**	
Broke in to steal			**0.72**	
Ran away from home[a]				0.31
Beat up someone				**0.75**
Threatened to beat up someone				**0.69**
Started a fire purposely[a]				0.51

Source: Calculations from the 36-month follow-up child survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never") to 4 ("5 times or more").

[a]Items were not included on the scale because they were low-frequency items and/or they were not consistent with a priori theory.

At risk for depression. Children ages 15–18 were asked about the number of days in the past week they had experienced each of 11 depressive symptoms. These items were a subset of the Center for Epidemiological Studies Depression (CES-D) scale,[2] which has been used extensively in previous studies. One item detracted from the internal consistency of the scale; the item "Everything I did was an effort" was not answered in accordance with the other items. It was suspected that some children interpreted this item to mean "I put effort into everything I do" and thus scored it differently than would be expected. Therefore, only 10 items were included in the score of depression. Each item was scored on a scale ranging from 0 ("rarely/never") to 3 ("five to seven days"). A total score was computed by summing across the individual items. Previous research has identified a threshold (a score of 16 out of 60) at or above which scores may be indicative of clinical depression. A corresponding threshold (a score of 8 out of 30) was identified for this smaller subset of items; children who scored above this cut-off were scored as 100 ("at risk of depression"), and children at or below this score were scored as 0 ("not at risk"). This scale demonstrated good internal validity, with $\alpha = .80$ (excluding the item "Everything I did was an effort").

[2]Radloff, 1977.

Health and Safety

General health. Four items addressed parental reports of children's health for all children in the sample (ages 3–18). Sample items included: "He doesn't get sick often" and "She seems less healthy than other children you know." Items were asked on a 5-point scale ranging from 1 ("false") to 5 ("true"), with 3 being "sometimes false/sometimes true." Items were re-scored such that high scores indicated better health. An average score across the four items was constructed to measure children's general health. This scale had a moderate internal reliability, with $\alpha = .62$ for the parental measure and $\alpha = .64$ for the child report measure.

Long-term health problems. Parents of all children (ages 3–18) were asked to report whether their children had any long-term health problems that had lasted or would last six months or more, that had been diagnosed by a health professional, and that limited the child's participation in activities. These problems included allergies, asthma, bronchitis, kidney problems, heart diseases, epilepsy, cerebral palsy, mental handicap, and learning and emotional problems.

Injuries. Parents of all children (ages 3–18) were asked to report whether their children had experienced any injuries serious enough to require medical attention in the past 12 months. Children who had experienced an injury were scored as 100, and children who had not were scored as 0.

FAMILY FUNCTIONING

Parental Functioning

Fair or poor health. Parents were asked to rate their general health on a scale of 1 ("excellent") to 5 ("poor"). Parents who scored above a 3 were scored as being in fair or poor health and scored as 100. Parents with scores of 3 or below were scored as 0, not in fair or poor health.

High alcohol use. Parents were asked how many times they drank five or more drinks in a row in the last 12 months. This number was used as a measure of high alcohol use.

Parenting problems. Parents were asked how much trouble they have had being able to provide care for their children, using a 5-point scale ranging from 1 ("very difficult") to 5 ("not difficult at all"). The item was reverse-coded such that high corresponded to greater difficulty parenting.

At risk for depression. Parents were asked about the number of days in the last week they had experienced each of 11 depressive symptoms, a subset of the widely used CES-D scale.[3] (See page 66 for a further discussion of the items on this scale in its use for adolescents.) For parents, all 11 items were used for the summary score. Therefore, a threshold of 9 (out of 33) was computed for the items used to measure parental depression, at or above which parents were scored as "at risk for depression" and given a value of 100. This scale had high internal reliability, with $\alpha = .83$.

[3]Radloff, 1977.

Parenting Behaviour

Parents were asked about their parenting behaviour with each of their children. A different set of parenting items was asked of parents of 3- to 14-year-old children than of parents of 15- to 18-year-old children. Children were also asked to assess their parents' behaviour. The set of items asked of children ages 10–18 corresponded to those asked of parents of children ages 15–18. All items were answered on a 5-point scale ranging from "never" to "many times each day."

For the items included in the parent survey questions to children ages 3–14, a principal components factor analysis with varimax rotation was conducted. A varimax rotation specifies that the factors produced are orthogonal to one another. This analysis suggested that the items reported by parents of 3- to 14-year-olds tapped three distinct factors: (1) warm parenting, (2) negative parenting, and (3) consistent discipline (see tables B.6–B.8). For the items reported by parents of 15- to 18-year-olds and for the 10- to 18-year-old child report items, two distinct factors were tapped: (1) authoritative parenting (a combination of warmth, democratic, and limit-setting parenting), and (2) negative parenting. Items also loaded onto a third factor, parental monitoring, but the internal consistency of the scale was so low ($\alpha = .36$ for the parent report monitoring scale and .47 for the child report monitoring scale) that it was not considered for impact analysis. In a small number of cases, items double-loaded on the factors. In general, items were considered as part of the factor on which the item more highly loaded. In a few rare cases, items that loaded on a particular factor were not included as part of the scale for theoretical reasons.

Warm parenting. Parents of children ages 3–14 were asked questions about parenting behaviour that assessed the warmth they expressed to their children. Items included "How often do you praise your child?" and "How often do you and your child laugh together?" All items were re-scored so that high indicated high warmth. An average score was computed across the items included in the scale. The scale had good internal reliability ($\alpha = .77$).

Negative parenting. Parents of children ages 3–14 were asked about negative parenting behaviours as well. Examples of items on this scale are "How often do you tell him that he is not as good as others?" and "Of all the times that you talk to her about her behaviour, what proportion is disapproval?" Items were re-scored such that high indicated more negative parenting. As with warm parenting, an average score was computed across the items included in the scale. This scale has good internal reliability ($\alpha = .80$).

Consistent discipline. Parents of children ages 3–14 were also asked about their disciplinary practices. Items focussed on how consistently the parent carried out disciplinary actions. For example, items on this scale included "When you give her a command to do something, what proportion of the time do you make sure she does it?" and "If you tell him that he will be punished if he doesn't stop doing something and he keeps doing it, how often will you punish him?" Items were re-scored such that high scores indicated consistent discipline. An average score was computed by averaging the scores on the items on this scale. This scale has a lower, but still acceptable, internal reliability, with $\alpha = .65$.

Table B.6: Parenting Factor Analysis, Reports by Parents of Children Ages 3–14

Item	Warm Parenting	Negative Parenting	Consistent Discipline
Praise child	**0.72**		
Talk/play together	**0.76**		
Laugh together	**0.73**		
Do something special together	**0.67**		
Play sports together	**0.66**		
Proportion of time praise child	**0.49**		
Get annoyed when child disobeys		**0.69**	
Tell child he is not as good as others		**0.42**	
Proportion of time express disapproval		**0.56**	
Get angry when punish child		**0.60**	
Punishments depend on mood		**0.43**	
Have trouble managing child		**0.74**	
Punish for the same things		**0.72**	
How well gotten along in past 12 months[a]		**0.68**	
Child ignores punishments		**0.57**	-0.44
Child gets out of punishments		0.35	**-0.65**
Child gets away with things		0.33	**-0.67**
Make sure child obeys			**0.64**
Punish when child does not stop behaviour			**0.77**
Alpha for scale	0.77	0.80	0.65

Source: Calculations from the 36-month follow-up parent survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never") to 5 ("all the time"). Exceptions are otherwise noted.

[a]Responses for this item ranged from 1 ("very well, no problems") to 5 ("not well at all, constant problems").

Authoritative parenting. Parents of children ages 15–18 reported on their authoritative parenting and their children ages 10–18 reported on this same aspect of their parents' behaviour. Authoritative parenting is a parenting style that includes a combination of warm, democratic, and limiting-setting parenting.[4] Some items were similar to the warmth dimension described for younger children ("How often do you smile at him?" "How often do you praise her?"), while others captured the extent to which parents were democratic with their children ("How often do you listen to his ideas and opinions?" "How often do you solve a problem together when you disagree about something?"). Again, items were scored such that high values indicated greater warmth and greater democracy in parenting. Authoritative parenting was computed as the average score across the items on the scale. Internal reliability for the scale was high ($\alpha = .86$ for the parental report measure and $\alpha = .88$ for the adolescent report measure).

[4]Baumrind, 1971, and Maccoby and Martin, 1983.

Table B.7: Parenting Factor Analysis, Child Reports, Ages 10–18

Item	Authoritative Parenting	Negative Parenting	Monitoring[a]
My parent			
Smiles at me	**0.74**		
Praises me	**0.70**		
Listens to my ideas and opinions	**0.76**		
Solves problems with me	**0.70**		
Makes sure I know I am appreciated	**0.77**		
Speaks of the good things I do	**0.78**		
Seems proud of what I do	**0.77**		
Nags me about small things		**0.67**	
Only keeps rules when suits her		**0.47**	
Gets angry and yells		**0.63**	
Threatens punishment		**0.62**	
Enforces rules depending on mood		**0.66**	
Hits or threatens to hit		**0.45**	
Forgets rules has made		**0.51**	
Wants to know where I am[b]	0.44		**-0.35**
Tells me when to be home	0.34		**-0.59**
Finds out about my misbehaviour	0.33		**-0.45**
Lets me go out when I want			**0.77**
Alpha for scale	0.88	0.68	0.47

Source: Calculations from the 36-month follow-up child survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown.

Bolded factor loadings indicate items that were used to create the respective scales.

Responses for these items ranged from 1 ("never") to 5 ("very often").

[a]Alpha for monitoring items was .47, indicating the scale is not internally consistent.

[b]Item was included on the monitoring scale to be consistent with a priori theory.

Negative/inconsistent parenting. Parents of children ages 15–18 reported on their negative/inconsistent parenting, and children ages 10–18 also reported on this aspect of their parents' disciplinary style. Some items captured a negative parenting style ("How often do you get angry and yell at her?" "How often do you hit him, or threaten to do so?"), and others captured an inconsistent disciplinary style ("How often do you keep rules only when it suits you?" "How often do you soon forget a rule you have made?"). Items were scored such that high scores indicated more negative and more inconsistent parenting. The total score was computed by averaging the items that made up the scale. This scale had a relatively high internal reliability ($\alpha = .77$ for the parental report measure and $\alpha = .68$ for the adolescent report measure).

Parental time with children. Parents were asked how many hours they spent caring for all their children (not including time when their children were sleeping). Scores ranged from 1 ("less than 10 hours") to 5 ("more than 40 hours").

Table B.8: Parenting Factor Analysis, Reports by Parents of Children Ages 15–18

Item	Authoritative Parenting	Negative Parenting	Monitoring[a]
Smile at child	**0.73**		
Praise child	**0.76**		
Listen to child	**0.65**		
Solve problems with child	**0.56**		
Make sure child knows he is appreciated	**0.77**		
Speak well of what child does	**0.79**		
Proud of what child does	**0.76**		
Punish child repeatedly for the same things		**0.58**	0.38
Forget rules		**0.50**	
Nag about small things		**0.65**	
Keep rules when suits myself		**0.41**	
Get angry and yell		**0.66**	
Threaten punishment		**0.71**	
Punish depending on mood		**0.61**	
Hit or threaten to hit		**0.52**	
How well get along with child[b]		**0.47**	
Find out misbehaviour[c]		0.40	**0.26**
Know what child is doing	0.39		**0.44**
Tell child when to be home			**0.69**
Let child go out			**-0.62**
Alpha for scale	0.86	0.77	0.36

Source: Calculations from the 36-month follow-up parent survey.

Notes: Only factor items with loadings greater than or equal to |.30| are shown. Exceptions are otherwise noted.

Bolded factor loadings indicate items that were used to create the respective scales.

Except as otherwise noted, items were included on the factors on which they most highly loaded.

Responses for these items ranged from 1 ("never") to 5 ("very often"). Exceptions are otherwise noted.

[a]Alpha for monitoring items was .36, indicating the scale is not internally consistent.

[b]Responses for this item ranged from 1 ("very well, no problems") to 5 ("not well at all, constant problems").

[c]Item "find out misbehaviour" was not included on the negative parenting scale to be consistent with a priori theory.

CHILD CARE AND RESIDENTIAL MOVES

Child Care

Parents were asked in the 36-month survey about the regular child care arrangements they had used for the youngest child in the household over the past 18 months. Child care arrangements include before- and after-school programs, day care centres, care by a relative in or out of the child's home, and care by a non-relative in or out of the child's home. Parents could indicate that their children had multiple care arrangements.

Any child care. Parents who reported that their youngest children had spent time in any of the above child care arrangements were scored as 100, and those whose children had not were scored as 0.

Any centre care. Parents who reported that their youngest children had spent time in a day care centre over the last 18 months were scored as 100, while those whose children had not had this type of care, or not had other care at all, were scored as 0.

Any after-school program. Parents who reported that their youngest children had spent time in an after-school program over the last 18 months were scored as 100. Parents of children in other forms of care or without care were scored as 0.

Any informal child care. Parents who reported that their youngest child had spent time with a relative or non-relative in or out of the child's home were scored as 100, in informal care. Relatives included the other parent, siblings, and other relatives. Parents who reported only other child care arrangements or no arrangements were scored as 0.

Hours in child care in last week. Parents reported the number of hours in the last week that their youngest children spent in any child care arrangement. Parents of children not in care were scored as 0.

Changed child care 2+ times. Parents were asked the number of times the primary child care arrangement had changed in the last six months (excluding periods of care by themselves). Parents who indicated they had changed child care arrangements two or more times in the last six months were scored as 100, while those who had not, or had not used care, were scored as 0.

Children's After-School Activities

Parents of children ages 6–14 were asked about their children's participation in activities in the past year. Children ages 10–18 were also asked about their own participation in activities. Four different activities were addressed: (1) sports involving teaching or instruction (apart from physical education in school); (2) sports without a coach or instructor; (3) lessons in music, art, or other non-sport activities (outside of school); and (4) clubs, groups, or community programs with adult leadership. Responses were scored on a 1–4 scale ranging from "about every day" to "rarely." From these items, three variables were created to assess children's participation in after-school activities.

Any activity at least once per week. Children who scored a 1 ("about every day") or 2 ("about every week") in any of the four activities assessed were scored as participating in any activity at least once per week and scored as 100. Children who participated less than weekly in all activities were scored as 0.

Number of days in any activity/number of days in supervised activities. Because children may participate in multiple activities (and what is of greatest interest here is the number of days children were engaged in activities), a summary score was computed across children's participation in the activities assessed. Children's scores on the 1–4 scale on each of the activities were re-scored to correspond to the likely number of days children participated in each activity every month. Scores of 1 ("daily") were scored as 20 (five days for four weeks each month); scores of 2 ("weekly") were scored as 4 (one day for four weeks each month); scores of 3 ("monthly") were scored as 1; and scores of 4 ("rarely/never") were scored as 0. A sum of these re-scored values was computed across all activities (and capped at 20, the highest possible score) for the *number of days in all activities*. A similar sum of these re-scored values (also capped at 20) was computed across only the supervised activities

(supervised sports, lessons, and clubs) for the *number of days in supervised activities*. Unfortunately, because the exact day of the week the child participated in the activity was not specified, children who participated in the two activities on the same day would be credited for participating in two days of activities. No child, however, was given a score greater than 20 for either of these measures.

Frequency of doing household chores. Children ages 10–18 were asked the frequency with which they did regular family chores or carried out responsibilities, such as doing housework and caring for younger siblings. Responses ranged from 1 ("never") to 5 ("about every day").

Participation in school/work. Children ages 15–18 were asked whether they were in school and/or working for pay, and the number of hours they were working for pay. These items were used to determine the proportion of children in school, working, and both in school and working, and the number of hours they were working. Children who were not working were scored as working 0 hours.

Residential and School Changes

Any residential moves. Parents were asked about whether they had moved in the last three years. Families who recorded they had moved were scored as 100, while families who had not were scored as 0.

School changes. Parents of children ages 6–14 were asked whether their children had changed schools in the last three years (other than changing from elementary to middle school, for example) and, if so, how many times and the reason for the most recent change. For the assessment of *any school changes*, children who had ever changed were scored as 100, while children who had not were scored as 0. For *two or more school changes,* children who had changed schools at least twice were scored as 100, while children who had not changed schools or who had changed schools only once were scored as 0.

Family Structure

Marital history. Parents recorded the dates on which they were married, were separated, and were divorced, along with their current marital status and their marital status at random assignment and at the 18- and 36-month follow-up surveys. On the basis of this information, parents were scored as *ever married* if they were married at any time over the 36-month follow-up period (and scored as 100 if they were and 0 if they were not). Also, the *number of months married* was computed from the information provided.

Contact with second parent. Parents of children ages 3–18 were asked if their children had any contact with their second parent and, if so, the type of contact. For *any contact*, children with any contact were scored as 100 while children with no contact were scored as 0. Children who lived with their second parent, either together with the first parent or in a joint custody arrangement, were scored as *lives with second parent* and scored as 100, while children who had no contact or another form of contact were scored as 0. Similarly, children who visited their second parent either regularly or irregularly were scored as *visits with second parent* and scored as 100, and those without such contact or any contact were scored as 0.

Appendix C:
Program Impacts by Child Gender and by Province

Chapter 3 presents the impact of SSP on children's outcomes for children in three age groups. In this appendix, these impacts are described separately for girls and boys, and for children in New Brunswick and in British Columbia.

DIFFERENCES IN SSP IMPACTS BY CHILD GENDER

There are few reasons to expect differences by child gender. SSP did not treat families differently according to the children's gender, and analysis suggests that there were significant impacts on parental employment, earnings, and income for families of boys and families of girls. Also, theory on the effects of employment and income on children does not provide a clear expectation of the direction of gender differences. On the one hand, it is possible that role modeling of maternal employment may have a stronger positive effect on girls' behaviour than on boys'. On the other hand, girls may also be asked to take on more of the household responsibilities when their parents work, placing additional burdens on children struggling with the demands of adolescence and school.

Despite the difficulty of developing hypotheses about gender differences, such differences have been found in some studies.[1] For example, in the New Hope evaluation,[2] boys were found to benefit from the program more than girls, on the basis of teacher (but not parental) reports of children's functioning. The authors suggested that parents were more concerned about their boys and were more likely to put their boys in after-school activities. This increase in participation in activities might have led to the benefits of the program for boys' academic functioning and behaviour in school. In this way, the program's greater effects on boys than on girls may stem from a differential response of parents of boys and of girls to similar increases in employment.

Impacts by Child Gender for the Younger Cohort of Children

Tables C.1 and C.2 present the impacts by gender for the younger cohort of children, ages 3–5 at the 36-month follow-up. For the boys (Table C.1), there is only one statistically significant program impact, on positive social behaviour; program group boys were reported as having less positive social behaviour than control group boys. There are no program impacts for girls (Table C.2), and none of the gender differences in program impacts are statistically significant (data not shown). There is little evidence that SSP is affecting young girls' or boys' development, either positively or negatively, and there is no evidence that SSP affected boys and girls in the younger cohort differently.

[1] Quint, Bos, and Polit, 1997, and Bos et al., 1999.
[2] Bos et al., 1999.

Table C.1: SSP Impacts on Child Outcomes for Younger Cohort Boys at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive functioning					
PPVT-R score[a]	90.49	91.43	-0.95	0.589	-0.05
Sample size	188	221			
Behaviour and emotional well-being[b]					
Behaviour problems	1.53	1.50	0.03	0.257	0.11
Positive social behaviour	2.44	2.50	-0.07 *	0.064	-0.17
Sample size	230	281			
Health and safety					
Average health[c]	3.96	4.01	-0.05	0.506	-0.06
Any long-term problems (%)	31.60	30.63	0.97	0.814	0.02
Any injuries (%)	13.36	13.73	-0.37	0.903	-0.01
Sample size	231	284			

Sources: Calculations from the 36-month follow-up parent survey and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]Behaviour problems and positive social behaviour are rated on a scale from 1 ("never") to 3 ("often").

[c]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Table C.2: SSP Impacts on Child Outcomes for Younger Cohort Girls at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive functioning					
PPVT-R score[a]	93.67	91.21	2.47	0.163	0.13
Sample size	214	204			
Behaviour and emotional well-being[b]					
Behaviour problems	1.44	1.46	-0.01	0.569	-0.05
Positive social behaviour	2.57	2.57	0.00	0.906	0.01
Sample size	266	254			

(continued)

Table C.2: SSP Impacts on Child Outcomes for Younger Cohort Girls at the 36-Month Follow-Up (Cont'd)

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Health and safety					
Average health[c]	4.04	4.09	-0.04	0.526	-0.06
Any long-term problems (%)	20.51	23.81	-3.30	0.364	-0.08
Any injuries (%)	8.86	10.55	-1.69	0.513	-0.05
Sample size	272	256			

Sources: Calculations from the 36-month follow-up parent survey and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]Behaviour problems and positive social behaviour are rated on a scale from 1 ("never") to 3 ("often").

[c]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Impacts by Child Gender for the Middle Cohort of Children

Tables C.3 and C.4 show the impacts by gender for the middle cohort of children, ages 6–11 at the 36-month follow-up. For the boys (Table C.3), there is only one statistically significant program impact, in children's math scores; boys in the program group had higher math scores than boys in the control group. Program impacts are more pronounced for girls (Table C.4). For girls, positive program impacts are found for children's cognitive, behaviour, and health outcomes. More specifically, girls in the program group scored higher on the PPVT-R and math tests than girls in the control group, and both parents and children reported higher average achievement levels for girls than did their counterparts in the control group. While there were no differences between program and control groups in parental reports of girls' behaviour, girls in the program group reported higher levels of positive social behaviour than did girls in the control group. Finally, parents (but not children) reported better health of girls in the program group than did parents of girls in the control group, and fewer long-term health problems. It is interesting to note that these increases occurred for girls both on outcomes in which girls were performing better than boys (parental report of academic achievement, child report of positive social behaviour, parental report of long-term health problems) and on outcomes in which boys were performing better than girls (PPVT-R scores and child report of academic achievement).

Table C.3: SSP Impacts on Child Outcomes for Middle Cohort Boys at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Standardized tests					
PPVT-R score[a] (ages 6-7)	91.84	93.64	-1.80	0.396	-0.10
Sample size	153	133			
Math score[b] (ages 7-11)	0.56	0.53	0.04 *	0.081	0.13
Sample size	362	308			
Parental report (ages 6-11)					
Average achievement[c]	3.55	3.50	0.05	0.410	0.05
Below-average, any subject (%)	27.56	31.33	-3.77	0.197	-0.08
Any grade repeated (%)	15.81	12.50	3.31	0.139	0.10
Sample size	515	480			
Child report (ages 10-11)					
Average achievement[c]	3.84	3.97	-0.14	0.188	-0.19
Below-average, any subject (%)	8.93	6.60	2.32	0.521	0.09
Sample size	111	106			
Behaviour and emotional well-being					
Parental report (ages 6-11)					
Behaviour problems[d]	1.49	1.48	0.00	0.918	0.01
Positive social behaviour[d]	2.52	2.52	-0.01	0.734	-0.02
School behaviour problems[e]	1.38	1.40	-0.02	0.724	-0.02
Sample size	573	520			
Child report (ages 10-11)					
Behaviour problems[d]	1.52	1.47	0.06	0.177	0.19
Positive social behaviour[d]	2.36	2.43	-0.07	0.285	-0.14
Sample size	118	114			
Health and safety					
Parental report (ages 6-11)					
Average health[f]	4.05	4.01	0.04	0.412	0.05
Any long-term problems (%)	38.24	41.89	-3.66	0.218	-0.07
Any injuries (%)	11.90	13.89	-2.00	0.327	-0.06
Sample size	578	518			
Child report (ages 10-11)					
Average health[f]	3.86	3.92	-0.06	0.629	-0.07
Sample size	107	106			

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Behaviour was rated on a scale of 1 ("never") to 3 ("often").

[e]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[f]Average health is rated on a scale of 1 to 5, with 5 indicating excellent general health.

Table C.4: SSP Impacts on Child Outcomes for Middle Cohort Girls at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Standardized tests					
PPVT-R score[a] (ages 6-7)	94.72	88.40	6.33 ***	0.003	0.33
Sample size	*139*	*159*			
Math score[b] (ages 7-11)	0.56	0.52	0.04 *	0.060	0.15
Sample size	336	314			
Parental report (ages 6-11)					
Average achievement[c]	3.88	3.72	0.16 ***	0.007	0.17
Below-average, any subject (%)	17.90	20.32	-2.42	0.334	-0.06
Any grade repeated (%)	9.69	10.18	-0.49	0.797	-0.02
Sample size	499	502			
Child report (ages 10-11)					
Average achievement[c]	3.98	3.78	0.20 **	0.036	0.25
Below-average, any subject (%)	6.02	11.30	-5.29	0.143	-0.17
Sample size	132	115			
Behaviour and emotional well-being					
Parental report (ages 6-11)					
Behaviour problems[d]	1.34	1.37	-0.03	0.167	-0.08
Positive social behaviour[d]	2.66	2.65	0.00	0.962	0.00
School behaviour problems[e]	1.12	1.13	-0.01	0.782	-0.02
Sample size	537	527			
Child report (ages 10-11)					
Behaviour problems[d]	1.42	1.46	-0.04	0.316	-0.12
Positive social behaviour[d]	2.68	2.50	0.18 ***	0.000	0.43
Sample size	129	113			
Health and safety					
Parental report (ages 6-11)					
Average health[f]	4.16	4.02	0.14 ***	0.006	0.17
Any long-term problems (%)	26.13	32.12	-5.99 **	0.032	-0.13
Any injuries (%)	12.34	9.49	2.85	0.136	0.10
Sample size	534	527			
Child report (ages 10-11)					
Average health[f]	3.84	3.77	0.07	0.492	0.09
Sample size	127	111			

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Behaviour was rated on a scale of 1 ("never") to 3 ("often").

[e]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[f]Average health is rated on a scale of 1 to 5, with 5 indicating excellent general health.

Despite these apparent gender differences, it is important to note that, except in a few instances, differences between boys and girls in program impacts are not statistically significant (data not shown). That is, the program impacts for boys and girls were close enough to one another that the differences could be due to chance. Only the differences in impacts on the PPVT-R score, on children's report of average achievement, on children's report of behaviour problems and positive social behaviour, and on parental report of children's injuries, were large enough to be statistically significant.[3] Thus, it appears that the impacts of SSP are more pronounced for girls than for boys, but some of these differences may be due to chance.

Impacts by Child Gender for the Older Cohort of Children

Program impacts by gender for the older cohort of children are presented in tables C.5 and C.6. Note that the sample sizes for many of the measures discussed in this section are small, limiting the power of the statistical tests conducted. For the boys (Table C.5), there is only one statistically significant program impact; boys in the program group are less depressed than boys in the control group. There are no statistically significant program impacts on any of the cognitive and academic measures or the behavioural measures for boys. However, the size of the impacts on the behavioural measures is in the same range as the size of the impacts found for the full sample (both boys and girls in the older cohort combined; see Table 3.3). For the girls (Table C.6), there is only one statistically significant program impact on cognitive/academic measures; in parental report of children's average achievement, program group girls are performing more poorly in school than their control group peers. More consistent are findings in the area of children's behaviour, which show program impacts on girls' behaviour problems in school, delinquent behaviour (for children ages 15–18), and drinking. Parents in the program group reported more contacts with school regarding girls' behaviour problems than did parents in the control group, and program group girls reported more frequent delinquent activity and a greater likelihood of drinking at least once per week than did control group girls. Effects on delinquency and drinking are moderate in size for these girls. While for this cohort girls were generally found to be performing better than their male peers, that was not the case for all measures of children's functioning. For example, control group girls were more likely to be smoking than control group boys, but less likely to be drinking or using drugs.

Gender differences in impacts are generally not statistically significant and therefore may be due to chance (data not shown). Only the gender difference in impact on depression is statistically significant ($p = .034$). In fact, many of the program impacts on boys' behaviour, while not statistically significant, are approaching significance and in the same direction as the impacts on girls' behaviour. Therefore, these differences between girls and boys in program impacts are not very pronounced. Program impacts appear to be slightly larger for girls than for boys but not significantly so.

[3]The p-values for the differences in impacts are as follows: PPVT-R score, $p = .007$; child report of average achievement, $p = .014$; child report of positive social behaviour, $p = .002$; child report of behaviour problems, $p = .080$; and parental report of any injuries, $p = .082$.

Table C.5: SSP Impacts on Children's Outcomes for Older Cohort Boys at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Math score[a] (ages 12-14)	0.44	0.46	-0.02	0.541	-0.08
Sample size	135	125			
Parental report					
Average achievement[b]	3.31	3.34	-0.02	0.769	-0.02
Below-average, any subject (%)	37.10	40.16	-3.06	0.472	-0.06
Any grade repeated (%)	42.06	40.80	1.26	0.731	0.03
Dropped out of school (ages15-18) (%)	13.53	10.56	2.97	0.369	0.10
Sample size	377	348			
Adolescent report					
Average achievement[b]	3.47	3.53	-0.06	0.393	-0.08
Below-average, any subject (%)	19.60	15.28	4.32	0.218	0.12
Sample size	249	216			
Behaviour and emotional well-being					
Parental report					
School behaviour problems[c]	1.54	1.49	0.05	0.404	0.06
Sample size	384	346			
Adolescent report					
Frequency of delinquent activity (ages 12-14)[d]	1.38	1.47	-0.09	0.153	-0.16
Frequency of delinquent activity (ages 15-18)[d]	1.45	1.40	0.05	0.247	0.15
Any smoking (%)	25.37	19.91	5.46	0.147	0.14
Drinks once a week or more (%)	8.92	5.75	3.17	0.174	0.14
Any drug use (%)	19.78	14.77	5.01	0.133	0.14
At risk for depression (ages 15-18) (%)	32.37	42.99	-10.62 *	0.089	-0.21
Sample size	272	237			
Health					
Parental report					
Average health[e]	4.10	4.14	-0.04	0.588	-0.05
Any long-term problems (%)	41.44	43.33	-1.89	0.650	-0.04
Sample size	291	270			
Adolescent report					
Average health[e]	3.90	3.89	0.01	0.829	0.02
Sample size	264	225			

Sources: Calculations from the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[c]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[d]Frequency of delinquent activity is rated on a scale from 1 ("never") to 4 ("5 or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Table C.6: SSP Impacts on Children's Outcomes for Older Cohort Girls at the 36-Month Follow-Up

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Math score[a] (ages 12-14)	0.46	0.46	0.00	0.869	0.02
Sample size	144	156			
Parental report					
Average achievement[b]	3.56	3.73	-0.17 **	0.033	-0.18
Below-average, any subject (%)	27.94	24.80	3.14	0.416	0.07
Any grade repeated (%)	31.52	30.15	1.36	0.701	0.03
Dropped out of school (ages15-18) (%)	8.70	6.54	2.16	0.454	0.09
Sample size	348	325			
Adolescent report					
Average achievement[b]	3.54	3.61	-0.07	0.277	-0.10
Below-average, any subject (%)	18.25	13.39	4.87	0.129	0.14
Sample size	262	254			
Behaviour and emotional well-being					
Parental report					
School behaviour problems[c]	1.25	1.18	0.07 *	0.092	0.14
Sample size	355	331			
Adolescent report					
Frequency of delinquent activity (ages 12-14)[d]	1.32	1.31	0.02	0.762	0.04
Frequency of delinquent activity (ages 15-18)[d]	1.36	1.28	0.07 **	0.038	0.27
Any smoking (%)	27.59	23.99	3.60	0.330	0.08
Drinks once a week or more (%)	8.90	3.72	5.19 **	0.011	0.27
Any drug use (%)	17.57	13.97	3.60	0.239	0.10
At risk for depression (ages 15-18) (%)	58.74	50.83	7.91	0.199	0.16
Sample size	295	272			
Health					
Parental report					
Average health[e]	4.09	4.12	-0.03	0.638	-0.04
Any long-term problems (%)	36.49	32.69	3.80	0.351	0.08
Sample size	284	260			
Adolescent report					
Average health[e]	3.76	3.81	-0.05	0.525	-0.05
Sample size	288	268			

Sources: Calculations from the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[c]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[d]Frequency of delinquent activity is rated on a scale from 1 ("never") to 4 ("five or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

DIFFERENCES IN SSP IMPACTS BY PROVINCE

As with differences in program impacts by gender, there is little reason to expect differences in program impacts on children's outcomes by province. The program offer was similar in New Brunswick and British Columbia, and, more importantly, there were significant impacts on parental economic outcomes for both provinces.

Impacts by Province for the Younger Cohort of Children

Impacts for the younger cohort of children in New Brunswick and British Columbia are presented in Tables C.7 and C.8. In New Brunswick, there is only one statistically significant program impact, on children's long-term health problems, with program group children having slightly fewer long-term health problems than control group children. In British Columbia, there were no program impacts on any of the child outcomes examined. Not surprisingly, differences between the two provinces in program impacts did not emerge for any of these outcomes, except in the case of long-term health problems. These data suggest that the lack of program impacts for the younger cohort of children is similar in the two provinces.

Table C.7: SSP Impacts on Child Outcomes for the Younger Cohort at the 36-Month Follow-Up, New Brunswick

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive functioning					
PPVT-R score[a]	92.08	91.58	0.51	0.738	0.03
Sample size	188	203			
Behaviour and emotional well-being[b]					
Behaviour problems	1.46	1.47	-0.01	0.710	-0.03
Positive social behaviour	2.52	2.55	-0.03	0.464	-0.06
Sample size	257	296			
Health and safety					
Average health[c]	4.03	4.06	-0.03	0.694	-0.03
Any long-term problems (%)	26.44	32.89	-6.45 *	0.095	-0.14
Any injuries (%)	9.65	10.00	-0.35	0.891	-0.01
Sample size	260	299			

Sources: Calculations from the 36-month follow-up parent survey and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]Behaviour problems and positive social behaviour are rated on a scale from 1 ("never") to 3 ("often").

[c]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Table C.8: SSP Impacts on Child Outcomes for the Younger Cohort at the 36-Month Follow-Up, British Columbia

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive functioning					
PPVT-R score[a]	92.27	91.09	1.18	0.545	0.05
Sample size	214	222			
Behaviour and emotional well-being[b]					
Behaviour problems	1.51	1.49	0.02	0.583	0.05
Positive social behaviour	2.49	2.52	-0.02	0.540	-0.06
Sample size	239	239			
Health and safety					
Average health[c]	3.98	4.03	-0.05	0.461	-0.07
Any long-term problems (%)	24.69	20.59	4.10	0.282	0.10
Any injuries (%)	12.30	15.00	-2.70	0.386	-0.08
Sample size	243	240			

Sources: Calculations from the 36-month follow-up parent survey and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]Behaviour problems and positive social behaviour are rated on a scale from 1 ("never") to 3 ("often").

[c]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Impacts by Province for the Middle Cohort of Children

Tables C.9 and C.10 present the program impacts on children's outcomes for the middle cohort of children in the two provinces. In New Brunswick, the only significant program impacts are in the area of children's health, with program group parents reporting better health and fewer long-term health problems than control group parents. In British Columbia, program impacts are more pronounced for children's cognitive and academic outcomes, with program group children performing better on the math test, and parents in the program group reporting better average achievement and fewer of their children performing below average in school relative to their control group counterparts. On the other hand, parents in the program group also reported a greater likelihood of grade repetition than did parents in the control group. In only a few cases (parental report of children's below-average performance in school, parental report of children's positive social behaviour, and parental report of average health) are these differences in program impacts statistically significant (data not shown). Therefore, many of these provincial differences in impacts may be due to chance.

Table C.9: SSP Impacts on Child Outcomes for the Middle Cohort at the 36-Month Follow-Up, New Brunswick

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Standardized tests					
PPVT-R score[a] (ages 6-7)	92.71	90.74	1.97	0.322	0.11
Sample size	137	148			
Math score[b] (ages 7-11)	0.53	0.51	0.02	0.446	0.06
Sample size	338	330			
Parental report (ages 6-11)					
Average achievement[c]	3.74	3.65	0.08	0.148	0.09
Below-average, any subject (%)	23.03	21.22	1.81	0.489	0.04
Any grade repeated (%)	17.30	17.03	0.26	0.912	0.01
Sample size	505	514			
Child report (ages10-11)					
Average achievement[c]	4.05	4.05	0.00	0.963	0.01
Below-average, any subject (%)	5.83	5.69	0.14	0.962	0.01
Sample size	119	123			
Behaviour and emotional well-being					
Parental report (ages 6-11)					
Behaviour problems[d]	1.43	1.44	-0.01	0.527	-0.04
Positive social behaviour[d]	2.54	2.59	-0.04	0.128	-0.10
School behaviour problems[e]	1.26	1.28	-0.02	0.636	-0.03
Sample size	556	547			
Child report (ages 10-11)					
Behaviour problems[d]	1.45	1.44	0.01	0.795	0.03
Positive social behaviour[d]	2.55	2.47	0.08	0.167	0.17
Sample size	122	126			
Health and safety					
Parental report (ages 6-11)					
Average health[f]	4.13	3.94	0.19 ***	0.000	0.22
Any long-term problems (%)	32.73	39.07	-6.35 **	0.029	-0.13
Any injuries (%)	11.43	11.81	-0.38	0.844	-0.01
Sample size	559	542			
Child report (ages 10-11)					
Average health[f]	3.86	3.88	-0.03	0.816	-0.03
Sample size	117	119			

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Behaviour was rated on a scale of 1 ("never") to 3 ("often").

[e]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[f]Average health is rated on a scale of 1 to 5, with 5 indicating excellent general health.

Table C.10: SSP Impacts on Child Outcomes for the Middle Cohort at the 36-Month Follow-Up, British Columbia

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Standardized tests					
PPVT-R score[a] (ages 6-7)	93.65	90.83	2.82	0.217	0.14
Sample size	155	144			
Math score[b] (ages 7-11)	0.60	0.54	0.06 ***	0.008	0.21
Sample size	360	292			
Parental report (ages 6-11)					
Average achievement[c]	3.69	3.57	0.12 *	0.052	0.12
Below-average, any subject (%)	22.65	30.62	-7.97 ***	0.005	-0.17
Any grade repeated (%)	8.20	5.04	3.15 *	0.051	0.14
Sample size	509	468			
Child report (ages10-11)					
Average achievement[c]	3.78	3.65	0.13	0.218	0.17
Below-average, any subject (%)	8.80	13.27	-4.47	0.296	-0.13
Sample size	124	98			
Behaviour and emotional well-being					
Parental report (ages 6-11)					
Behaviour problems[d]	1.41	1.41	0.00	0.820	-0.01
Positive social behaviour[d]	2.62	2.60	0.03	0.290	0.06
School behaviour problems[e]	1.25	1.24	0.01	0.777	0.02
Sample size	554	500			
Child report (ages 10-11)					
Behaviour problems[d]	1.49	1.49	0.00	0.990	0.00
Positive social behaviour[d]	2.50	2.45	0.05	0.363	0.12
Sample size	125	100			
Health and safety					
Parental report (ages 6-11)					
Average health[f]	4.08	4.10	-0.03	0.599	-0.03
Any long-term problems (%)	32.14	34.73	-2.59	0.373	-0.05
Any injuries (%)	12.79	11.49	1.30	0.519	0.04
Sample size	559	501			
Child report (ages 10-11)					
Average health[f]	3.85	3.79	0.05	0.616	0.07
Sample size	117	98			

Sources: Calculations from the 36-month follow-up parent survey, the Peabody Picture Vocabulary Test–Revised (PPVT-R), the math skills test, and the 36-month follow-up child survey.

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The PPVT-R is a test of children's understanding of words. Scores reported are standardized scores.

[b]The math score reflects the proportion of items answered correctly on a math skills test.

[c]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[d]Behaviour was rated on a scale of 1 ("never") to 3 ("often").

[e]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[f]Average health is rated on a scale of 1 to 5, with 5 indicating excellent general health.

Impacts by Province for the Older Cohort of Children

The final set of tables, Tables C.11 and C.12, report the program impacts by province on children's outcomes for the older cohort of children. For children in New Brunswick, significant program impacts were found for parental reports of children's school behaviour problems, and for children's reports of delinquent activity, alcohol, and drug use. As with the full child sample, these program impacts indicate an increase in problem behaviours for program group children relative to their control group peers. For children in British Columbia, program impacts were significant for parental report of children's average achievement and children's own report of alcohol use. Again, these findings suggest unfavourable program impacts on children's academic functioning and behaviour. While these findings would suggest that program impacts on behaviour are more consistent in New Brunswick than in British Columbia, the impacts on children's behaviour are similar in the two provinces (for example, program impacts on smoking and drug use are about four percentage points each). None of these differences in impacts for the two provinces is statistically significant (data not shown). Therefore, such differences are likely to be due to chance.

Table C.11: SSP Impacts on Children's Outcomes for the Older Cohort at the 36-Month Follow-Up, New Brunswick

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Math score[a] (ages 12-14)	0.43	0.42	0.01	0.645	0.05
Sample size	146	146			
Parental report					
Average achievement[b]	3.44	3.47	-0.03	0.746	-0.03
Below-average, any subject (%)	34.92	31.80	3.12	0.474	0.07
Any grade repeated (%)	49.37	46.98	2.39	0.511	0.05
Dropped out of school (ages15-18) (%)	12.32	9.39	2.93	0.350	0.10
Sample size	394	364			
Adolescent report					
Average achievement[b]	3.50	3.58	-0.07	0.309	-0.09
Below-average, any subject (%)	18.42	13.58	4.84	0.135	0.14
Sample size	265	243			
Behaviour and emotional well-being					
Parental report					
School behaviour problems[c]	1.45	1.36	0.09 *	0.085	0.13
Sample size	398	364			
Adolescent report					
Frequency of delinquent activity (ages 12-14)[d]	1.35	1.37	-0.02	0.660	-0.05
Frequency of delinquent activity (ages 15-18)[d]	1.39	1.32	0.07 *	0.076	0.23
Any smoking (%)	30.07	25.59	4.48	0.246	0.10
Drinks once a week or more (%)	6.29	3.17	3.12 *	0.086	0.18
Any drug use (%)	13.40	8.88	4.52 *	0.091	0.16
At risk for depression (ages 15-18) (%)	41.84	42.86	-1.01	0.871	-0.02
Sample size	290	259			

(continued)

Table C.11: SSP Impacts on Children's Outcomes for the Older Cohort at the 36-Month Follow-Up, New Brunswick (Cont'd)

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Health					
Parental report					
Average health[e]	4.19	4.18	0.01	0.849	0.02
Any long-term problems (%)	35.77	37.99	-2.22	0.612	-0.05
Sample size	259	229			
Adolescent report					
Average health[e]	3.84	3.84	0.00	0.997	0.00
Sample size	283	252			

Sources: Calculations from the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[c]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[d]Frequency of delinquent activity is rated on a scale from 1 ("never") to 4 ("five or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Table C.12: SSP Impacts on Children's Outcomes for the Older Cohort at the 36-Month Follow-Up, British Columbia

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Cognitive/academic functioning					
Math score[a] (ages 12-14)	0.48	0.51	-0.03	0.376	-0.11
Sample size	133	135			
Parental report					
Average achievement[b]	3.43	3.60	-0.17 **	0.038	-0.17
Below-average, any subject (%)	30.69	32.85	-2.16	0.577	-0.05
Any grade repeated (%)	22.29	22.33	-0.04	0.990	0.00
Dropped out of school (ages15-18) (%)	10.00	7.89	2.11	0.501	0.08
Sample size	331	309			
Adolescent report					
Average achievement[b]	3.50	3.57	-0.07	0.322	-0.09
Below-average, any subject (%)	19.43	14.98	4.46	0.198	0.12
Sample size	246	227			

(continued)

Table C.12: SSP Impacts on Children's Outcomes for the Older Cohort at the 36-Month Follow-Up, British Columbia (Cont'd)

Outcome	Program Group	Control Group	Difference (Impact)	P-Value	Effect Size
Behaviour and emotional well-being					
Parental report					
School behaviour problems[c]	1.34	1.31	0.03	0.593	0.04
Sample size	341	313			
Adolescent report					
Frequency of delinquent activity (ages 12-14)[d]	1.35	1.39	-0.04	0.545	-0.07
Frequency of delinquent activity (ages 15-18)[d]	1.42	1.36	0.06	0.158	0.18
Any smoking (%)	22.79	18.52	4.28	0.230	0.11
Drinks once a week or more (%)	11.64	6.17	5.46 **	0.028	0.23
Any drug use (%)	24.10	20.00	4.10	0.256	0.10
At risk for depression (ages 15-18) (%)	49.65	51.30	-1.66	0.792	-0.03
Sample size	277	250			
Health					
Parental report					
Average health[e]	4.02	4.10	-0.08	0.233	-0.10
Any long-term problems (%)	41.64	38.21	3.43	0.384	0.07
Sample size	316	301			
Adolescent report					
Average health[e]	3.82	3.85	-0.03	0.654	-0.04
Sample size	269	241			

Sources: Calculations from the 36-month follow-up parent survey, the math skills test, and the 36-month follow-up child survey.

Notes: Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to differences between the outcomes for the program and control groups. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

Standard errors were adjusted to account for shared variance between siblings.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary for individual items because of missing values.

All measures are described in detail in Appendix B.

[a]The math score reflects the proportion of items answered correctly on a math skills test.

[b]Average achievement is rated on a scale of 1 ("not very well at all") to 5 ("very well").

[c]Parents of children in school were asked how often in the past school year they were contacted by the school about their child's behaviour problems in school. Responses range from 1 ("never contacted or contacted once") to 3 ("contacted four or more times").

[d]Frequency of delinquent activity is rated on a scale from 1 ("never") to 4 ("five or more times").

[e]Average health is rated on a scale from 1 to 5, with 5 indicating excellent general health.

Appendix D:
Differences in Impacts Across the Three Age Cohorts

As discussed in chapters 2 and 3, children in the three age cohorts had parents with very different baseline characteristics. Therefore, differences in program impacts across the three age cohorts may be due to differences in these characteristics. An analysis was designed to test whether this was in fact the case.

In order to conduct this analysis, summary child outcome measures were created for each domain of child functioning. Variables within each domain of child functioning (cognitive/academic, behaviour and emotional well-being, and health and safety) were standardized (as Z scores), and then an average score was computed across these standardized outcomes. If a child had a self-report and a parental report measure, his score would be the average of the standardized self-report and maternal report variables. If another child also had a math score, his score would be the average of the standardized self-report, maternal report, and math test variables. Averaging across multiple reporters and measures provides greater reliability to the measure of the construct and allows for commonly measured scores across the three age groups.

Two sets of analyses were conducted for each outcome across the three age cohorts. Separate analyses were conducted for each pair of age cohorts (younger vs. middle, middle vs. older, younger vs. older) and for each child outcome (cognitive, behaviour, and health). First, ANCOVAs were conducted with a dummy variable for the program group, a dummy variable for the child age cohort, and an interaction term of the program dummy multiplied by the age cohort. Second, ANCOVAs were conducted with these same variables, controlling for the main effect of eight baseline characteristics that differed across the three age cohorts: maternal age, number of children, marital status, number of years ever employed, Income Assistance (IA) history, physical problems, emotional problems, and depression risk (all measured at random assignment), and the interaction of each of these eight characteristics and the program dummy. The results of these analyses are presented in tables D.1–D.3.

Table D.1 examines differences in program impacts between the younger and middle cohorts of children. There were no significant differences in program impacts for any of the three child outcomes. After including the baseline-by-program interactions, differences between the younger and middle cohort in behaviour emerged. Table D.2 examines differences in program impacts between the younger and older cohorts of children. Only for child academic functioning was there a significant difference in program impacts by age group, but it was accounted for by baseline differences in program impacts. These findings suggest that there are few differences between the younger cohort and either the middle or the older cohorts in program impacts. This suggestion is not surprising given that no program impacts were found for the younger cohort of children.

Table D.1: SSP Multivariate Analyses of Differences in Impacts Between the Younger Cohort and the Middle Cohort

Independent Variables	Dependent Variables: Cognitive/Academic Functioning Sum of Squares[a]	Dependent Variables: Behaviour and Emotional Well-Being Sum of Squares	Dependent Variables: Health and Safety Sum of Squares
Differences between age groups			
Program group	1.67	0.15	0.36
Child age cohort	0.04	0.31	0.02
Interaction of program group and child age cohort	0.01	0.29	0.89
Differences between age groups controlling for differential program impact by baseline characteristics[b]			
Program group	1.15	1.56 *	0.33
Child age cohort	1.09	0.38	0.42
Interaction of program group and child age cohort	0.14	1.60 *	0.41

Sources: Calculations from the baseline survey, the 36-month follow-up parent survey, the 36-month follow-up child survey, the math skills test, and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Middle cohort children were ages 6–11 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to all analyses. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

All measures are described in detail in Appendix B.

[a]Type III Sum of Squares were calculated.

[b]In these models, the following covariates were included: age of parent, marital status (never married), number of months on Income Assistance in the past three years, number of years employed, any physical problems, any emotional problems, total number of children, at risk for depression, and interactions of each of these baseline characteristics with the program group dummy variable. For any baseline characteristics for which there were missing data, a zero was imputed for the missing data, and a dummy variable (missing/non-missing) was included in the equation (this occurred only in the case of the risk of depression variable).

Table D.2: SSP Multivariate Analyses of Differences in Impacts Between the Younger Cohort and the Older Cohort

Independent Variables	Dependent Variables: Cognitive/Academic Functioning Sum of Squares[a]	Behaviour and Emotional Well-Being Sum of Squares	Health and Safety Sum of Squares
Differences between age groups			
Program group	0.19	3.51 **	0.06
Child age cohort	0.61	1.20	0.02
Interaction of program group and child age cohort	2.44 *	1.01	0.00
Differences between age groups controlling for differential program impact by baseline characteristics[b]			
Program group	0.07	3.40 **	0.91
Child age cohort	2.11 *	1.08	5.06 ***
Interaction of program group and child age cohort	1.51	0.29	1.24

Source: Calculations from the baseline survey, the 36-month follow-up parent survey, the 36-month follow-up child survey, the math skills test, and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Younger cohort children were ages 3–5 at the 36-month follow-up.

Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to all analyses. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

All measures are described in detail in Appendix B.

[a]Type III Sum of Squares were calculated.

[b]In these models, the following covariates were included: age of parent, marital status (never married), number of months on Income Assistance in the past three years, number of years employed, any physical problems, any emotional problems, total number of children, at risk for depression, and interactions of each of these baseline characteristics with the program group dummy variable. For any baseline characteristics for which there were missing data, a zero was imputed for the missing data, and a dummy variable (missing/non-missing) was included in the equation (this occurred only in the case of the risk of depression variable).

Table D.3: SSP Multivariate Analyses of Differences in Impacts Between the Middle Cohort and the Older Cohort

Independent Variables	Dependent Variables: Cognitive/Academic Functioning Sum of Squares[a]	Dependent Variables: Behaviour and Emotional Well-Being Sum of Squares	Dependent Variables: Health and Safety Sum of Squares
Differences between age groups			
Program group	0.20	2.75 **	0.54
Child age cohort	0.60	0.48	0.00
Interaction of program group and child age cohort	4.73 ***	3.38 **	0.94
Differences between age groups controlling for differential program impact by baseline characteristics[b]			
Program group	0.10	0.64	0.03
Child age cohort	0.14	0.06	2.43 **
Interaction of program group and child age cohort	4.31 ***	1.69 *	0.07

Sources: Calculations from the baseline survey data, the 36-month follow-up parent survey, the 36-month follow-up child survey, the math skills test, and the Peabody Picture Vocabulary Test–Revised (PPVT-R).

Notes: Middle cohort children were ages 6–11 at the 36-month follow-up.

Older cohort children were ages 12–18 at the 36-month follow-up.

Only children who were in the home at random assignment and at the 36-month follow-up interview were analyzed.

A two-tailed test was applied to all analyses. Statistical significance levels are indicated as: * = 10 percent; ** = 5 percent; *** = 1 percent.

All measures are described in detail in Appendix B.

[a]Type III Sum of Squares were calculated.

[b]In these models, the following covariates were included: age of parent, marital status (never married), number of months on Income Assistance in the past three years, number of years employed, any physical problems, any emotional problems, total number of children, at risk for depression, and interactions of each of these baseline characteristics with the program group dummy variable. For any baseline characteristics for which there were missing data, a zero was imputed for the missing data, and a dummy variable (missing/non-missing) was included in the equation (this occurred only in the case of the risk of depression variable).

Table D.3 examines these same differences in program impacts for the middle and older cohorts of children. In this case, differences in program impacts were found for each of the child outcomes: cognitive/academic functioning, behaviour and emotional well-being, and health and safety. Differences in program impacts for cognitive/academic and behaviour/emotional well-being outcomes remained significant even after the inclusion of interactions between baseline characteristics and the program dummy, suggesting that these differences are not accounted for by differences in program impacts by baseline characteristics. These findings suggest that the differences in program impacts, at least in academic/cognitive and behaviour/emotional well-being outcomes between the middle and older cohorts, may be due to developmental differences between the age cohorts and not to the fact that the older cohort of children comes from families at greater disadvantage.

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