Lebihan, Laetitia; Haeck, Catherine; Merrigan, Philip

Working Paper

Universal childcare and long-term effects on child well-being: Evidence from Canada

Research Group on Human Capital - Working Paper Series, No. 15-02

Provided in Cooperation with:
University of Quebec in Montreal, School of Management Sciences (ESG UQAM), Research Group on Human Capital (GRCH)

Suggested Citation: Lebihan, Laetitia; Haeck, Catherine; Merrigan, Philip (2017) : Universal childcare and long-term effects on child well-being: Evidence from Canada, Research Group on Human Capital - Working Paper Series, No. 15-02, Université du Québec à Montréal, École des sciences de la gestion (ESG UQAM), Groupe de recherche sur le capital humain (GRCH), Montréal

This Version is available at:
https://hdl.handle.net/10419/209560

Research Group on Human Capital
Working Paper Series

Universal childcare and long-term effects on child well-being: Evidence from Canada

Working Paper No. 15-02

Catherine Haeck, Laëtitia Lebihan, and Philip Merrigan

November 2017 (revised version)

Forthcoming, *Journal of Human Capital*

http://grch.esg.uqam.ca/working-papers-series/?lang=en

Universal childcare and long-term effects on child well-being : Evidence from Canada

Catherine Haeck [*] Laetitia Lebihan [*] Philip Merrigan [*†]

We evaluate the long-term effects of the Canadian province of Quebec $5 per day universal childcare policy on child and youth well-being (health, behavior, motor and social development). Treated children are followed for more than 19 years. Estimates based on a nonexperimental evaluation framework show that the negative effects on preschoolers documented in previous studies persist over time for most outcomes. Once children enter school, only the impact on emotional disorder and anxiety persists, but the magnitude is smaller than for preschool children. For teens, aged 12 to 19 years old, our estimates do not suggest that the effects persist.

Key words : universal childcare, child well-being, childcare policy, natural experiment.

JEL Classification : J13, J18, I31, I20

[*]Université du Québec à Montréal. The analysis is based on Statistics Canada's National Longitudinal Survey of Children and Youth (NLSCY) and Canadian Community Health Survey (CCHS) restricted-access Micro Data Files, which contain anonymous data. All computations on these micro-data were prepared by the authors who assume responsibility for the use and interpretation of these data. The authors would like to thank Pierre Lefebvre, Marie Connolly, the referees and participants at the ESPE, ACFAS and SCSE conferences for many helpful comments. This research was funded by the Fonds québécois de la recherche sur la société et la culture.

[†]Corresponding author : merrigan.philip@uqam.ca.

1 Introduction

To meet the increased demand for childcare and promote children's development, policymakers in several countries have implemented subsidized childcare programs. Evidence showing that early childhood interventions have higher economic returns than interventions later in life (Heckman 2006) supports this type of family oriented policy. However, much of this evidence relates to targeted early childhood interventions [1] and may not be generalizable to universal childcare policies. In fact, recent studies on the effect of universal childcare on children's outcomes find mixed results. [2]

One of the better known universal childcare programs in North America is from the Canadian province of Quebec. This program was initiated in 1997 and was highly subsidized. Childcare spaces were provided at a single low-fee of $5 per child per day ($7 as of 2004), approximately 25 percent of the full cost of care. The reform was phased in by age group, starting with 4-year-olds in 1997 and ending with 0–1-year-olds in 2000. Although the Quebec government intended to provide regulated and subsidized childcare spaces for all children too young for publicly provided kindergarten, the number of spaces in 2000 remained constrained. Over time, the constraint was eventually lifted and, by 2006, the number of spaces in the network stabilized (Haeck et al. 2015).

The policy had two major objectives : (1) increase mothers' participation in the labor market, and (2) enhance child development and equality of opportunities. A number of studies showed that the first objective was met (Lefebvre and Merrigan 2008 ; Baker et al. 2008 ; Kottelenberg and Lehrer 2013 ; Haeck et al. 2015). Together, these studies showed a large and lasting positive effect of the reform on maternal labor supply and childcare

1. For example, the Perry Preschool Program and the Abecedarian Project. See also Almond and Currie (2011) for a review.

2. For example, Baker et al. (2008), Haeck et al. (2015) and Kottelenberg et al. (2013) report negative impacts on child development and behavioral outcomes. Datta Gupta and Simonsen (2010) find that preschool had little effect on future noncognitive outcomes but enrollment in family daycare has negative effects for boys with a mother with a low level of education. Havnes and Mogstad (2011) and Felfe et al. (2015) report positive impacts on children's long-run outcomes as teenagers and adults.

utilization. In contrast, studies on the effect of the reform on child development seriously questioned the alleged benefit of the policy for children. In a seminal paper Baker et al. (2008) – henceforth BGM [3] – showed that the reform had negative effects on children's health, behavior and motor-social skills before age 5. They also found negative effects of the policy on measures of parental effectiveness and family functioning. However, these results were obtained with only a few post-policy years reflecting the early years of the program. Because of this, longer-term impacts of the policy are not addressed by the paper.

We extend their research on universal childcare in two ways. First, we estimate the impact of the Quebec childcare reform on eligible children beyond the preschool period. Analyzing the impact of the policy on youth aged 5 to 19 years old eligible for low-fee childcare since birth allows us to study the long-term effects of the policy on children who were highly exposed to the reform. Negative impacts documented by BGM on health, cognitive and behavioral development in the preschool years may have persisted once children entered school. Or, they may not have persisted in the long run. For example, it is possible that exposure to childcare early on reinforced the development of the immune system [4] such that the negative health effects documented in BGM may have turned positive during the school years. [5] Documenting the long-term effects of universal childcare on eligible children is crucial to our understanding of the overall impact of such programs, yet few studies do so using a quasi-experimental design. [6] Datta Gupta and Simonsen (2010, 2016) are an exception. These

3. BGM has been cited over 600 times.

4. See for example the hygiene hypothesis that states that a lack of early childhood exposure to infectious diseases may weaken the natural development of the immune system (e.g. Strachan 2000).

5. A large literature documents the increased risk of infections in large daycare settings for children aged 0–3 years old. This finding is generally attributed to increased germ exposition in a group setting and the immaturity of the immune system at this age. These effects appear to be short-lived, however, and may even be reversed once children start formal schooling around ages 5 to 6 (Côté et al. 2010 ; Raynault et al. 2011.)

6. In a working paper, Baker, Gruber, and Milligan (2015) investigate the long-term effects of the Quebec policy on older children. Using the same strategy as in 2008, they show that the non-cognitive deficits persist to school ages. We expand this strategy by suggesting that children are exposed to the program differently and assume a dose-response relationship. We also consider other policies that may affect the treated cohorts. We return to the differences with this paper later in the empirical section.

authors find that preschool had little effect on noncognitive outcomes, as well as mathematics, at age 7, but that it improved student's test scores in Danish.

Second, we estimate the impact of the reform over a longer observation period than BGM – with six years of additional data. In practice BGM captured the short-term effects of the reform up to 2003. At the time of their study few treated 4-year-olds were eligible for low-fee childcare since birth. Because the number of spaces increased rapidly until 2006, the estimated short-term impacts in BGM may reflect not only the impact of childcare per se but also that of the overall adjustment to a new social norm and the rapid deployment of a large-scale childcare network. As the network stabilizes, the effects could be different. Kottelenberg and Lehrer (2013) and Baker, Gruber and Milligan (2015) extended the observation period to 2006 but estimated the average effect of the reform on all treated children irrespective of the treatment period. Our empirical strategy allows us to measure whether the effects found in previous research are transitional or persist over time.

We use two Statistics Canada data sets for policy estimation : the National Longitudinal Survey of Children and Youth (NLSCY) (8 biennial waves : 1994 to 2009) and the Canadian Community Health Survey (CCHS) (2001 to 2014). Children surveyed in these data constitute a representative sample of the population of Canadian children and youths. A nonexperimental evaluation framework based on multiple pre- and post-treatment periods is used to estimate the policy effects. Effectively, we compare Quebec children before and after the reform to comparable children in the Rest of Canada (RofC). Our empirical strategy allows us to differentiate the intensity of treatment for each cohort, given the gradual implementation of the policy.

Our estimates suggest that, overall, the reform had negative effects on preschool children's health, motor-social development and behavior. However, for some outcomes, our estimates by wave suggest that the effects decrease over time and eventually become statistically insignificant by 2008. The negative effects of the reform on the well-being of preschoolers are mainly driven by children of highly educated mothers who were the first to react to the policy

by increasing their labor supply. Also, for older children aged 5 to 9 years old, we find strong evidence of a persistent adverse effect only for emotional disorder and anxiety. Finally, for youths aged 12 to 14 and 15 to 19, we cannot find robust evidence that the Quebec childcare policy produced lasting negative effects on health and behavior.

This paper is structured as follows. Section 2 describes Quebec's family policy. The data set used is presented in Section 3. Section 4 describes the methodology. Empirical results are presented in Section 5. Section 6 concludes the paper.

2 Daycare reform in Quebec [7]

In the late 1990s, the government of Quebec initiated the gradual implementation of a low-fee childcare network for children under 5 years of age. The low-fee childcare spaces could be purchased at a single price : $5 per day per child. On September 1, 1997, only the 4-year-olds were eligible for low-fee spaces. On September 1, 1998, the 3-year-olds became eligible for subsidized childcare. They were followed by the 2-year-olds on September 1, 1999. Finally, on September 1, 2000, all children aged less than 59 months – not entitled to kindergarten because their fifth birthday occurs after September 30 – became eligible for subsidized childcare. While all children five or less, not in publicly provided kindergarten, were eligible, the number of available spaces at the time still did not meet the demand. Between 2000 and 2012, the number of low-fee spaces increased from 85,000 to 217,000 spaces and thereby released the capacity constraint. In 2004, the price of low-fee childcare increased from $5 to $7 per day per child. Overall the total number of regulated spaces in Quebec more than tripled between 1996 and 2013 from 78,864 to 258,366 regulated spaces, and the total government subsidy reached 2.3 billion dollars for fiscal year 2012-2013 (Conseil du Trésor -Quebec, Budget 2012-2013). In contrast, the number of subsidized childcare spaces in the other Canadian provinces was relatively small compared with the Province of Quebec and

7. For a more precise description of the reform up until 2008 see Haeck et al. (2015).

changed little between 1997 and 2009 (Haeck et al. 2015). This reform drastically changed the way in which preschool children were cared for in Quebec, while no comparable changes were observed elsewhere in Canada. Figure 1 (evidence for this claim) presents a time series of the mean hours (conditional and nonconditional on the use of childcare) per week that children aged 1 to 4 years old spent in their primary care arrangement in Quebec and the RofC. Haeck et al. (2015) show not only that a much larger percentage of infants and toddlers started to attend daycare in Quebec following the reform, but that the intensity of care for those attending daycare also increased. In contrast, no significant changes in the hours of care has occurred in the RofC.

The daycare reform pursued two objectives : (1) increasing mothers' labor force participation, while balancing the needs of the workplace and in the households ; and (2) enhancing child development and equality of opportunities. The first objective has been studied extensively in the literature. Lefebvre and Merrigan (2008), BGM, Kottelenberg et al. (2013), and Haeck et al. (2015) together show large and lasting positive effects on maternal labor supply and childcare utilization. Results on child development are less conclusive. The impact on children likely depends on the quality of care provided, the intensity of care, the age of the child in care and family background. The network mainly consisted and still consists of two modes of care : center-based and home-based. Both are regulated by the government and must follow standards with regards to the number of children to educator ratio and an educational program. Center-based facilities additionally also must employ a certain number of qualified employees. Even so, two major studies evaluating the quality in the early years of the program (ISQ 2004 ; Japel et al. 2005) found that the average quality was at best satisfactory and in many cases low or not acceptable, particularly for children in lower-income families.

Along with low-fee childcare, the reform implemented changes for school-age children as well. First, full-day kindergarten replaced half-day kindergarten for 5-year-olds in school as of September 1998. Second, before- and after-school daycare were now also offered to children

aged 5 to 12 on school premises – also at the low-fee of $5 per day per child and $7 as of 2004. As mentioned earlier, our empirical strategy controls for changes impacting older children.

3 Data

To estimate the long-term impacts of the reform on children, we use two data sets : (1) the National Longitudinal Survey of Children and Youth (NLSCY), and (2) the Canadian Community Health Survey (CCHS). The NLSCY is a long-term biennial survey designed to measure the well-being of Canadian children. The survey started in 1994–1995 (wave 1) and ended in 2008–2009 (wave 8). This implies that we observe young children in Canada 4 years prior to the implementation of the reform and for more than 10 years after its implementation. In the NLSCY, we observe children aged 0 to 9 throughout the 1994-2008 period. We begin our investigation by replicating earlier results on preschoolers but over a longer observation period, as the program matures. In particular, we test whether the adverse effects of the program persist after 2006, when the number of spaces in the network stabilized and efforts in qualification and to improve educators' salaries were undertaken by the government (Lefebvre et Merrigan, 2008 ; Haeck et al., 2015). We then determine whether the effects on preschoolers persist when the policy is no longer contemporaneously effective, that is when children are in school (ages 5-9). Table A.1 shows the number of years of eligibility to low-fee childcare for children observed in the NLSCY. It also shows that some age groups are not observed in certain waves. For example, children aged 8 and 9 years old are not observed in 2004 (wave 6). As a result, given the structure of NLSCY, school-age children are split into two groups : the 5–7-year-olds and the 8–9-year-olds. In order to avoid overlapping of treated and untreated children in the same wave, we exclude wave 3 data for children 0 to 7 years old.[8] This approach is also supported by the fact that the number of regulated childcare spaces did not change in the early years of the reform (before 1999). At that time, existing spaces were converted to low-fee spaces (see Figure A.1 in Haeck et al.

8. BGM also exclude wave 3 data in their analysis on preschoolers.

2015). Nonetheless, we assess the robustness of our results to this restriction in the empirical section.

Table A.1 clearly shows that the number of years of eligibility to low-fee childcare increased over time. As such, children aged 0 to 4 in BGM were treated for only a few months to 2 years (waves 4 and 5).[9] In this study, we add an additional 6 years of data and we also observe school-age children. This allows us to estimate the effects on preschoolers over a longer period. It also enables us to analyze the long-term impacts of the reform on school-age children (aged 5 to 9 years old). In both groups, we now observe children that were eligible to low-fee childcare since birth and were therefore highly exposed to the reform (up to 5 years of treatment).

The CCHS is a cross-sectional survey that collects information on the health status, health care utilization and health determinants of the Canadian population aged 12 or more (Statistics Canada 2006). The survey started in 2001, with biennial samples for 2001, 2003 and 2005 and yearly samples since 2007. We use all available surveys, until 2014 and select a sample of youths aged 12 to 19. We distinguish between 12–14-year-olds and 15–19-year-olds[10] in our CCHS sample because of differences as to how intensely each group was exposed to the program. Finally, in order to avoid overlapping of treated and untreated youths in the same wave, we exclude 2009-2010 data for children aged 15-19 years old. Again, we verify the robustness of our results to this restriction in the empirical section.

Given the policy phase-in, children of different age groups were treated differently by the policy over the years. Table 1 summarizes the various treatments by age group while presenting the eligibility of children according to their age and NLSCY/CCHS wave. Thus, we distinguish four cohorts defined by their eligibility status : (1) not eligible, (2) partially

9. Kottelenberg and Lehrer (2013) use waves 1 to 7 but do not study the progressive effect, cycle by cycle, and focus on preschoolers only.

10. We use the Public Use Micro Data File from Statistics Canada's CCHS where observed individuals are classified by age groups (12-14 ; 15-19 ; 20-24 ; 25-29, etc.). From 2007, CCHS data are annual. In the CCHS public files, data from a single survey cover two years (e.g. 2013-2014). For simplicity and in particular for the figures, we code a cycle using the first year in the survey (e.g. 2013 represents 2013-2014).

eligible, the estimated effects for this group are symbolized by β^P, (3) fully eligible but observed in the early survey waves, β^{FE}, and (4) fully eligible but observed in the later survey waves, β^{FL}. Children never eligible to the childcare reform are in the first cohort. In the NLSCY, this cohort includes children aged 0 to 7 years old in waves 1 and 2 and children aged 8 and 9 years old in waves 1 to 4. In the CCHS, all youths observed in 2005 or before were ineligible, as well as those aged 15 to 19 years old observed in 2008 or before. The second cohort includes children partially treated by the reform : these children were all eligible to low-fee childcare but only for a maximum of 3 years. As mentioned earlier, waves including children that were not treated and children that were, are excluded from our main sample. The third cohort includes children that were treated since birth, but were still in the early years of the program. Finally, the fourth cohort includes children that were eligible since birth and were observed in the later years of the program. Table 1 reveals that for the 8–9–year-olds and the 15–19–year-olds we only observe children that were partially treated. For the 5–7–year-olds and the 12–14–year-olds we observe children that were fully treated but only in the early years of the program. Finally, as to fully treated children in the later waves of the program, we only observe children aged 0 to 5 years old. As it will become clear in the next sections, the timing and duration of eligibility should always be kept in mind when interpreting the results on the effects of the policy.

In the NLSCY, to measure the effect of subsidized childcare on child health and compare our results to BGM's, we constructed the following dummy outcome variables : (1) excellent child health in general ; (2) child injury requiring medical attention in the past 12 months ; (3) asthma attack in the past 12 months ; (4) never had a nose or throat infection ; and (5) never had an ear infection. All health outcomes are reported by the person most knowledgeable about the child – almost always the mother – and are available for children aged 0 to 9 years old. One exception is nose/throat and ear infections which are only available for children aged 0 to 3 years old. We also use the normalized Motor and Social Development (MSD) score available in the NLSCY for children aged 0-47 months old. This score is used to measure fine

and gross motor skills, perception and cognitive skills, communication and language, and the social development of children. Children's behavioral measures vary by age group. For the 2–3-year-olds, four parent-reported measures are available : (1) hyperactivity-inattention score ; (2) emotional problems and anxiety score ; (3) physical aggression and opposition score ; and (4) separation and anxiety score. For the 4–9-year-olds, four parent-reported measures of behavior are also available : (1) hyperactivity-inattention score ; (2) emotional problems and anxiety score ; (3) physical aggression and conduct problems score ; and (4) indirect aggression score. Although the measures may seem identical, the subquestions differ slightly by age group and over the cycles. To ensure comparability over time, we harmonized the measures such that they are perfectly comparable over time and follow the definitions used by Statistics Canada as of wave 4. The subquestions used for each measure are reported in Appendix Table A.2. For each of the behavioral scores, a higher score indicates an increased level of behavioral disorder. A number of control variables are available using the NLSCY. We use the sex of the child ; the mother and father's highest level of education — less than a high school diploma, high school diploma, some post-secondary education, with post-secondary diploma (omitted) ; the age group of the mother and father at child's birth — 14–24 years old (omitted), 25–29, 30–34, 35 or more ; a dummy for whether the mother or father was born in Canada or not ; the size of the area of residence — five groups from rural to 500,000, or more (omitted) ; the presence of older children — no older child (omitted), one older child, at least two older children ; the presence of younger children — no younger child (omitted), one younger child, at least two younger children ; the presence of children of the same age ; and dummy variables for the age of the child. Summary statistics for children aged 0–9 years old in Quebec and the RofC pre- and post-reform are presented in Appendix Table A.3.

The CCHS contains several indicators that are used in the literature to measure subjective well-being or to inform analysts on behaviors related to health (Bradshaw et al., 2007 ; UNICEF Office of Research, 2013). In the CCHS, we examine several self-assessed health outcomes : (1) overall health ; (2) asthma attack in the past 12 months ; (3) mental health ;

(4) sense of belonging to the local community ; (5) life satisfaction ; (6) drank alcohol in the past 12 months ; (7) doesn't smoke ; and (8) stress. All health outcomes are available for individuals aged 12 or older, except for the stress measure which is only available for individuals aged 15 years old or older. Except for the smoking dummy, health outcomes are coded such that a higher score indicates a worse outcome. To ensure comparability over time, we have also harmonized the measures such that they are perfectly comparable over time. Appendix Table A.4 provides details on each measure. The controls used in the regressions with CCHS data are : the sex of the child ; the highest level of education in the family — less than a high school diploma, high school diploma, other post-secondary education, with a post-secondary diploma (omitted) ; the number of children in the household aged 0-5 years old and 6-11 years old ; and a dummy for whether the child was born in Canada or not. Summary statistics for children aged 12–19 years old in Quebec and the RofC pre- and post-reform are presented in Appendix Table A.5.

4 Empirical strategy

To estimate the long-term effects of subsidized childcare we use a nonexperimental evaluation framework based on multiple pre- and post-treatment periods. We have two groups (Quebec and the RofC) observed before and after the policy, but only Quebec children are affected by the reform. The treatment group includes Quebec's children before and after the start of the reform, and the control group includes children of the same age in the RofC observed in the same year. Periods of pre- and post-treatment depend on the age of the child (see Table 1). To account for the gradual implementation of the policy, we allow the effects of treatment to differ in each of the post-reform waves. The empirical model is as follows :

$$Y_{it} = \alpha + \theta Q_{it} + \sum_{t=1}^{T} \gamma_t D_t + \sum_{t=p}^{T} \beta_t W_t Q_{it} + \Phi X_{it} + \varepsilon_{it} \tag{1}$$

where Y_{it} represents the outcome of child i in wave t. Outcomes studied here are child health,

behavior and motor-social development. The term Q_{it} is a dummy variable taking the value 1 if the child i lives in Quebec in wave t and 0 otherwise. The wave dummies D_t capture aggregate effects common to all children in Canada, $t = 1$ marks the first cycle of available data : wave 1 for the NLSCY and 2001 for the CCHS. T marks the last period of available data : wave 8 for the NLSCY and 2014 for the CCHS. To account for the phase-in, by age, of the policy, a set of dummies W_t for each of the post-reform waves interacted with Q_{it} is included. The term W_t takes the value of 1 if the wave is greater than or equal to $p = 4$ for children 0–7 years old (NLSCY), $p = 5$ for children 8–9 years old (NLSCY), $p = 2007$ for children 12–14 years old (CCHS), and $p = 2011$ for children 15–19 years old (CCHS) (see Table 1). The term X_{it} is a vector of socioeconomic control variables and ε_{it} is an error term.

Following BGM, we compute cluster-robust standard errors. In the NLSCY, clusters are based on birth-year cohort and province. In the CCHS, they are based on year and province. [11] Because we estimate impacts for multiple outcomes simultaneously, we also adjust our p-values following Simes (1986). This correction assumes that our outcomes are correlated with one another and avoids the possibility of overrejecting the null hypothesis when studying multiple correlated outcomes. Our adjusted p-values are computed by sub-group (health ; development ; behavioral scores by age), [12] as suggested by Shaffer (1995).

Our empirical strategy relies on two critical assumptions. First, in the absence of the reform, mean outcomes of Quebec and RofC children would have followed a similar trend. We cannot observe untreated children in Quebec post-reform, but we can observe trends in the outcome variables for the treatment and control group prior to the reform. Figures 2 and 3 show the evolution of a few outcome variables pre- and post-treatment using the NLSCY and CCHS data, respectively. Prior to the reform, the trends are very similar. [13] Other threats to this assumption are shocks impacting the outcome of one group but not that of the other during our observation period. Canada-wide policies are common to both

11. For CCHS data, we have age groups and therefore do not observe year of birth.
12. These subgroups are specified in the regression tables.
13. We return to the figures later in the empirical section.

groups and therefore are unlikely to affect them differently. Province specific policies are, however, a serious concern. In Quebec, three reforms were implemented during the period we observe. First, in July 1997, universal nontaxable family allowances were replaced by a tax benefit contingent on family income as well as family status. Second, in January 2005, the Quebec government implemented a new working income supplement for low-income households (mostly favoring single-parent families working near the minimum wage, Haeck et al., 2015). Hence, benefits for single mothers display substantially more provincial variation than those for two-parent families (BGM). Following BGM and Kottelenberg et Lehrer (2013, 2014), we focus on two-parent families to avoid interference with other policies targeting low-income families. In the Appendix Tables A.13-A.19, we show findings for samples of children in single-parent families and merged samples of children from both family types. We return to this issue later in the empirical section. Third, Quebec implemented a comprehensive school reform starting in 2000 and phased-in over the years across grades. Haeck et al. (2014) show that the reform had a negative impact on the math scores of children. For children in school, we therefore focus exclusively on health and behavioral outcomes not impacted by the school reform.

Second, our approach assumes no selection based on province-specific transitory shocks. First, when the policy was announced, ineligible children were already born. Parents could not have delayed conception to be eligible. Second, although parents outside of Quebec could have moved to Quebec to benefit from the childcare reform, migration data does not support this hypothesis (for more details, see Lefebvre et al. 2009).

In order to measure the robustness of the results obtained with the double-difference estimator (DD), we add an additional control group to our CCHS data set : youths aged 20-24 and never eligible to the program. We then estimate triple-difference models (DDD). This will purge from the DD estimators any post-policy effect specific to Quebec that is common to the 12–24-years-old. We will discuss in the next section the pertinence of using

the 20-24 years olds as an additional control group in our study. [14]

5 Econometric results

We start by providing evidence on the effects of the program on the well-being of preschool children. These include the 0 to 4-year-olds and also the 5-year-olds not yet in school. Relative to former studies, here, we take into account the intensity of treatment of children because the policy was progressive over time and some children were treated partially, while others fully. We also assess whether the initial impact on young children persisted as the program matured, especially from 2006, with the NLSCY data.

We then present the results once these children enter school. Using NLSCY data, we estimate the effects of the program on the 5–7-year-olds and the 8–9-year-olds. We also study the effects of the policy on youths aged 12 to 14 and 15 to 19 using CCHS data.

This allows us to estimate the contemporaneous effect of the reform on preschool children, and the spillover effects into the school years, while taking account of the intensity of treatment. We present the estimates per wave in the tables, along with the average effect over the entire post-reform period. We also report whether children were treated partially (β^P) , full early (β^{FE}) or full late (β^{FL}), based on Table 1. We report the coefficients, standard errors and results from several statistical tests. Estimated coefficients that are statistically significant based on adjusted p-values are presented in bold. The adjusted p-values [15] make use of a Simes p-value adjustment procedure to account for multiple correlated outcomes. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. To ease the interpretation of our results, all non-binary outcomes were restandardized for all respondents to have a mean of zero and a standard deviation (SD) of one. The coefficients can thus be interpreted in terms of changes in standard

14. It is not possible to estimate triple-difference models using the NLSCY data due to missing data for age groups necessary for DDD estimation and also because outcomes differ by age group.

15. The adjusted p-values are available on request.

deviations. We will focus on the estimates in bold.

5.1 Child outcomes : the NLSCY

Estimated effects for the full sample. Table 2 presents the estimated effects of the subsidized childcare policy on preschool children's health, motor-social development and behavior. The results for children in school aged 5 to 7 years old and 8 to 9 years old are presented in Table 3.

Results show that the reform has an average negative impact (Table 2, β_{4-8}) on 9 outcomes out of 14 for preschool children. In this specification, effects are constrained to be the same for all post-reform cycles. These results are in line with BGM. When we permit the policy effects to vary by wave, we find that for some outcomes, the effects tend to become smaller over time, a pattern of fade out. To validate this statement, we run a specification with a dummy for the entire post-period (β_{4-8}) and another dummy for the full late period (β_{7-8}). For health outcomes, we find that previously documented adverse effects persist over time. It is only for the behavioral scores of the 4–5-year-olds, that the coefficient (β_{7-8}) is significantly negative. For these outcomes we observe coefficients β_{7-8} that are consistently negative (indicating fade out), large in magnitude and statistically significant. However, almost in each case this result appears to be driven mainly by the wave 8 estimate. For anxiety, the test result suggests some fade out, but the wave-specific estimate for wave 7 (39 percent of a SD) is well within the range of the estimates for earlier treated waves (ranging from 36-45 percent of a SD) while the estimate for wave 8 is smaller (although still substantial at 25 percent of a SD). For aggression, the test result suggests even more fade out, but again the wave-specific estimate for wave 7 (18 percent of a SD) is in the range of the estimates for the earlier waves (from 22-24 percent of a SD), but the estimate for wave 8 is completely different (the opposite sign compared to the estimates for the other waves and quite small). A novel result is the negative impact (β_{7-8}) for hyperactivity, but again, it appears the wave 8 estimate drives a lot of the fade out effect. For preschoolers, previous studies also estimated

the impact of the reform on motor and social development (MSD). The average effect from 2000 to 2008 is negative but not different from zero. Our wave-specific estimates also suggest that the reform generally did not have an impact on MSD, except in wave 4, where the impact is negative. We note however that given the standard errors on this measure, we do not have the power to detect an effect much less than 16 percent of a standard deviation. As of wave 8, the coefficient is no longer negative, but remains insignificant. Overall, our results suggest that the reform had limited impacts on MSD. In sum, the results indicate some fade out that substantively starts in the final wave of the data (wave 8).

We performed several statistical tests to gauge the stability of the effects over time (Table A.6). First, we test the equality of policy effects, where $H_0 : \beta_4 = \beta_5 = ... = \beta_8$. Except for injuries, ear infection, MSD and separation scores, the null hypothesis of equality of effects between the waves is rejected. This implies that for most outcomes the effects differ over time. Second, we test whether all effects are equal to zero. We fail to reject the null only for injuries, the MSD score and separation-anxiety for the 2–3 year-olds. This suggests that the policy generally has an impact on young children. Third, we test whether the impact is different from zero for both 2006 and 2008 ($H_0 : \beta_7 = \beta_8 = 0$). These children were fully treated in the later years of the program. For half of the outcomes (health, ear infection, MSD score, behaviors for 2–3-year-olds, and indirect aggression for the 4–5-year-olds), the null hypothesis is not rejected. Fourth, we test whether the effects observed in the later waves (2006 and 2008) are different from those of the earlier waves ($H_0 : \beta_{456}=\beta_{78}$). For all behavioral scores of the 4–5-year-olds, the null hypothesis of equality is rejected. This suggests that the size of the effects is different between the two periods as previously discussed. Finally, we perform a one-tailed test where we report p-values for the test $\beta_{7-8}>\beta_{4-6}$ (excellent health ; never nose/throat and ear infections ; MSD score) and $\beta_{7-8}<\beta_{4-6}$ (all other outcomes). Again, for all behavioral scores of the 4–5-year-olds, the null hypothesis is rejected. For child health and the MSD score, we also reject the null hypothesis. Kottelenberg et al. (2013) also show that for child health and the MSD score, the magnitude of the effects decreased up until 2006.

Overall for preschool children's health outcomes and for the 2–3-year-olds' behavioral outcomes, we find that previously documented negative effects are persistent. For the 4–5-year-olds, we find less persistence, but this seems to be mainly driven by the much smaller effects found in cycle 8 (2008-09).

We now turn to the results for children in school aged 5 to 7 and 8 to 9 years old (Table 3). These are the first reported empirical results on the effects of Quebec's universal childcare policy for these age groups.[16] For the 5 to 7 and 8 to 9 age groups, only 1 outcome out of 6 is significant at the 5 percent level (anxiety). For the emotional disorder and anxiety score, we indeed find a persistent average effect of 19.5 to 21 percents of a SD. How material is this effect ? The measured effect would imply that mothers post-reform changed their answers from "Never or not true" to "Sometimes or somewhat true" to one of the seven questions about anxiety behavior. This is hardly a large[17] behavioral impact, even if statistically significant.[18] The results for physical aggression are less clear but given the structure of our analysis we can rule out a persistent effect larger than 15% of a SD. The reform has no

16. We recall that the estimates deemed significant according to adjusted p-values are presented in bold and that we focus on them in our comments. In addition, given the structure of the NLSCY, school-age children are split into two groups : the 5–7-year-olds (pre-period : waves 1 and 2 ; post-period : waves 4, 7 and 8 ; excluded : waves 5 and 6) and the 8–9-year-olds (pre-period : waves 1 to 4 ; post-period : waves 5 and 7 ; excluded : waves 6 and 8 (not available)) (see section 3 and Table A.1).

17. Scaling correctly the impact of the effect to obtain the average treatment on the treated effect is in this case a difficult exercise. Clearly some children without the policy would not be in daycare. However, those who would have been in child care without the reform, are also affected by the policy as they attend different childcare settings and spend longer hours in care (Haeck et al., 2015). Finally, children at home, could be more isolated given that the vast majority of children are now in daycare.

18. Several studies have investigated the relationship between several common mental health conditions at early ages and future outcomes using the NLSCY. Baker (2011) reported statistically insignificant associations between wave 1 behavioral scores (anxiety, aggression, and prosocial behavior) measured in preschool and subsequent academic performance at ages 6-19 (grade repetition, high school dropout, math scores, and problem solving). Only hyperactivity scores at ages 2-5 were statistically significant with a sibling fixed-effect estimation method, showing evidence for a causal association with math scores of school-aged children (3.6 percent of a SD). Also using a sibling-fixed effects models, Currie and Stabile (2007) showed little effect of aggression and emotional disorder scores measured at ages 4-11 in wave 1 on several future outcomes (young adult delinquency, grade repetition in school, and math scores) at ages 12-19 in wave 5. However, a one-unit change in the hyperactivity score increased the probability of grade repetition by 1 percentage point and reduced math scores by 7 percent of a SD. Overall, these Canadian studies showed that marginal changes in mental disorders in childhood do not have important persistent effects on school-age children.

persistent negative effect on health outcomes for this age group. Because our results show that the program persistently increased early childhood exposure to infectious diseases, the hygiene hypothesis predicts better health for children in the future (e.g. Strachan 2000), which is not the case here. For hyperactivity, there is no persistent impact, although our results by family type shown below suggest that this is not the case for children of single mothers. Finally, we note for both types of aggression adverse significant effects of the same size (15% of a SD) in the case of the 8–9-year-olds in 2006-07. Overall, for these two age groups the evidence is not as strong for persistence as for the preschoolers, except for anxiety.

To consolidate our results, we present figures by age for three of our main outcomes : child never experiences nose or throat infections, hyperactivity-inattention (standardized), and emotional disorder-anxiety (standardized) (Figure 2). The paths of these outcomes in Quebec and the RofC are similar prior to the introduction of the policy – regardless of the age of the child. However, following wave 3, we observe for preschoolers an increase in hyperactivity and emotional disorder scores in Quebec, as well as a growing gap between Quebec and the RofC for the absence of nose/throat infections. For children 5 to 7 years old in school, behavioral scores between Quebec and the RofC evolve similarly, and the gap grows after wave 6. For children aged 8 and 9, there is a sizable relative rise for the hyperactivity and emotional disorder score in Quebec after wave 4. The graphs are consistent with the estimated effects above.

We performed a number of robustness checks but found that our results were extremely stable. We included wave 3 data for the 0–7-year-olds and added linear time trends. None of these modifications change our conclusions (see Appendix Tables A.7-A.12). For the school reform, we cannot rule out that it has impacted children treated by the childcare reform because once in school these cohorts generally overlapped.[19] Nevertheless, as mentioned

19. Students in grades 1 and 2 (Elementary Cycle 1) were introduced to the reform in September 2000. The changes were phased in for other cycles over time : September 2001 – grades 3 and 4 (Elementary Cycle 2) ; September 2003 – grades 5 and 6 (Elementary Cycle 3) ; September 2005 and 2006 – grades 7 and 8 respectively (Secondary Cycle 1) ; September 2007, 2008 and 2009 – grades 9, 10 and 11 respectively (Secondary Cycle 2). The original plan for grades 5–6 and secondary school was delayed by one year. While training for grade

earlier, the school reform had a negative impact on children's mathematics test scores and had limited impacts on behavioral outcomes when the sample was restricted exclusively to children eligible to the childcare reform (Haeck et al. 2014).

We also estimated the models by family type : a sample of children in single-parent families and a sample of children from all family types (see Appendix Tables A.13-A.16). We show that the majority of adverse effects on preschoolers' behavior persists in the first years of school for single-parent families, especially those who were treated intensively since birth.

In sum, it appears that some of the negative effects documented for younger children do not persist once they enter school. Over time, only the impact on emotional disorder and anxiety persists, but the magnitude of the effects is smaller than for preschool children. Consistent with the implementation of the reforms, these effects occur for children treated more intensely in the early years of the reform (the 4–5-year-olds in waves 5 and 6 observed in school in waves 7 and 8). Finally, when we focus on the preschoolers, our estimates suggest persistence for adverse effects documented previously, except for the 4–5-year-olds, where we provide evidence that the adverse behavioral effects were smaller in the later stages of the reform. Unfortunately, we do not observe these children in school later (see Table 1). Clearly, the reform did not benefit children on average in Quebec, but we provide evidence that some of the negative effects of the program have become smaller.

Estimated effects by mother's education. In this section, we investigate whether the estimated effects differ according to maternal education. We divide our sample in two groups : (1) children with high-school educated mothers (low education) ; and (2) with post-secondary educated mothers (high education). Tables 4 and 5 show the estimated effects – for preschool children and children aged 5 to 9 years old – by maternal education. It was shown in Haeck et al. (2015), that during the first years of the policy, labor supply effects were much stronger for better educated mothers, such that, after the reform their children had spent much more

5 and 6 teachers began as early as 2001, the implementation was delayed, from 2002 to 2003. (Haeck et al. 2014).

time in child care from birth than children with lesser educated mothers.

The negative effects of the reform on child well-being for preschoolers found in the full sample are mainly driven by children of highly educated mothers. Indeed, for preschool children whose mothers have a high education level, the reform has average negative impacts on nose/throat and ear infections, on the MSD score, and on several behavioral scores. In contrast for children whose mothers have a low education level, only effects on nose/throat infections, hyperactivity, and emotional disorders at 4–5 years old are significant (Table 4). Again, our estimates by wave also suggest that, for all children, the policy effects for some outcomes have decreased after 2005.[20]

For children aged 5–7 years old, the policy has no significant effect at the 5 percent level on the children's well-being both for children of high-educated mothers and for children of low-educated mothers (Table 5), except for anxiety in the case of the highly educated. Some persistence for the effects on this behavior is also observed for this group of mothers. For children of mothers of both types, the average effects on health are insignificant (Table 5).

For the 8-9 year-olds, no average health effects are significant for both groups except asthma in the case of children with highly educated mothers. For behavioral outcomes, we find persistence of effects for anxiety in both groups and of indirect aggression only for the lower educated mothers. Therefore, for all age groups and education groups, the effects on anxiety clearly display persistence over time.

5.2 Youth Outcomes : the CCHS

We now present the effects of the reform for youths aged 12 to 14 and 15 to 19 years old using CCHS data (Tables 6 and 7). We find that overall health worsens significantly with the policy for the 12 to 14-year-olds (0.12 of a SD) but the odds of smoking decrease (1.8 percentage point). When we distinguish by intensity, we find that, for children fully treated in the early years, general health, mental health, and life satisfaction worsen significantly.

20. The statistical tests on fadeout effects are available on request.

These effects vary between 0.08 and 0.13 of a SD. The negative effect on the overall health for 12-14 year olds may be related to the adverse effects on emotional and mental well-being (mental health and life satisfaction). For partially eligible children, only overall health worsens significantly (0.13 of a SD). However, the sense of belonging to the community and not smoking improve. We estimate a triple-differences model adding a control group, youths aged 20–24 years old who were never eligible to the reform. With DDD, the set of policy effects on the health of young people aged 12–14 vanish, except for not smoking which remains significantly positive.

For children aged 15 to 19, we only observe partially treated children (Table 7).[21] Our results suggest that the childcare reform increased the probability of not smoking by 3.5 percentage points and had no impact on other health and behavioral scores. The findings are robust to the DDD method.[22]

A close look at figures 3A-3D displaying the evolution of the average of health and well-being outcomes over the 7 cycles of the CCHS is useful for interpreting the econometric DD and DDD results. We concentrate on outcomes where we find significant DD effects for the 12 to 14 years old (overall health, mental health, belonging, and life satisfaction) and the 15 to 19 years old (mental health). First, trends shown in Figures 3A and 3B suggest that the pattern of increasing poor health and decreasing life satisfaction is very similar for the 12–14-years-olds and the 20–24-year-olds living in Quebec. The pattern for youths living in the RofC is however very flat in both figures. Together, these findings explain why the DDD effects are not significant. The very similar pattern in both groups is also evidence that the 20 to 24 group is a credible comparison for the 12 to 14 group. Figure 3C shows that the mental health outcome of all age groups in Quebec displays the same increasing pattern in particular from 2007, as compared to the rest of Canada showing that something other than the policy could be driving these different trends in both regions. Finally, the DD result for

21. The stress measure is only available for individuals aged 15 years old or older.
22. The results are similar if we include 2009-2010 data for the 15 to 19 years old (see Appendix Table A.20).

belonging is based on one data point, 2007. If we omit this point, the differences between the ROC and Quebec groups are remarkably stable for the 6 other data points. Also, the evolution of this variable for the 15–19-year-olds, is very similar for both groups, adding evidence that the 2007 data for the 12 to 14 group is an anomaly. Given that the 20 to 24 group behaves quite similarly to the two other groups, and that DDD estimates are very different from the DD estimates, except for smoking behavior, we conclude that the DD estimates in the CCHS are not robust estimates of the childcare policy.

Although there is less family stability during the teenage years, we also estimate the effects of the reform on children 12 to 14 years old and 15 to 19 years old in single parent families and all family types (Appendix Tables A.17-A.19). The results are similar to two parent families. We show that the reform has generally no impact on partially eligible children (12–14 in 2007–10 and 15–19 in 2011–14) but has a negative impact on the fully eligible (full early). However, when using the DDD method, these negative effects become insignificant.

Overall, we do not find any strong evidence suggesting that the Quebec childcare policy had a lasting negative impact on youth health and behavior. We discuss the differences between our approach and that of Baker et al. (2015) in the next section.

5.3 Discussion.

The Quebec universal childcare reform appears to have had a negative effect on the well-being of preschool children aged 0 to 5 years old. According to Haeck et al. (2015), the adverse effects of the reform may be attributed in part to the structure of the program that offers at best a fair quality and strongly encourages families to use long hours of care.[23] Two main studies show that in the early years of the reform the average quality of care in

23. Low-fee childcare was available from 10 to 12 hours a day (depending on the type of care : center- or family-based), 260 days per year, at a single fee of $7 for all children up until 2016, when prices were made to depend on family income. The Quebec government requires that parents use these services every day of the week (unless the child is ill or on vacation with his parents), if a space isn't occupied full time, the subsidy may be reduced. Although childcare providers may offer part-time spaces, in a large majority of cases they offer only full-time spaces because they are easier to manage (Haeck et al. 2015).

Quebec's subsidized childcare network was at best satisfactory and in many cases was low or not acceptable (ISQ 2004; Japel et al. 2005). This may be partially explained by the rush to implement the program, build up new settings, and create new rules and new spaces to meet parents' excess demand. Such a large deployment forced the government to admit into the network educators with no specific training in early childhood education (Haeck et al. 2015). We also show in this paper that some of the negative effects of the reform become smaller over time. This could be explained by the efforts of the Quebec government to improve the quality of the staff and the educational program.[24] But even today it remains difficult to determine whether the regulatory educational staff requirements measures are actually implemented,[25] and recent reports on the quality of childcare do not seem positive. In particular, according to a report of the Auditor General of Quebec (2011), three-quarters of the projects selected for the development of childcare spaces in 2008 did not meet the quality criteria of the Ministry of Family (VGQ 2011). Another ISQ report in 2014 stated that 45 percent of Quebec's subsidized childcare, for children 18 months to 5 years of age, were good to excellent quality, compared with 41.8 percent in 2003 (ISQ, 2015).[26] Although there is a slight increase, it is difficult to conclude that there has been a significant improvement of quality in the network. Furthermore, a large percentage of children in Quebec are in family-based childcare. Family-based caregivers are not required to have a college or university degree in early childhood education. In 2010, 36 percent of children in childcare were in subsidized center-based care, 24 percent in unsubsidized center-based care and 40 percent in

24. In 2000, the Quebec government required that at least two out of three staff members be qualified for early childhood care in center-based care (against one out of three earlier). Educators' salaries also increased from 35 percent to 45 percent over a period of 4 years. In August 2006, the qualification staff requirements were extended to all center-based care, whether subsidized or not. The date of entry of this last requirement was set for August 31, 2011 for childcare services licensed before August 30, 2006. For centers that were granted a license after this date, requirements had to be met 5 years after the issuance of the license.

25. It is estimated that the percentage of subsidized childcare respecting the educator-child ratio was at most 42 percent in 2008 to 2009 and 54 percent in 2009 to 2010 (Vérificateur Général du Québec (VGQ), 2011). Moreover, over the past 5 years, 29 percent of licenses were renewed by the Ministry without the specified inspection issued as a ministerial directive (VGQ 2011).

26. Regarding children under 18 months, the figures are respectively 67.3 percent and 60.7 percent in 2014 and 2003.

family-based care (MFA Québec 2012). In sum, our results suggest that Quebec's subsidized childcare program had no favorable average impact on preschool children's health, behavior and motor skills. We even note adverse persistent impacts for some outcomes. Clearly, unlike high-quality programs such as Perry Preschool or the childcare programs of Scandinavian countries, the Quebec program did not contribute positively to the well-being of preschool children on average.

For older children aged 5 to 9 years old and youths aged 12 to 19 who were eligible to low-fee childcare during the preschool years, we show that the effects of the policy are less adverse. We first discuss the results on behavioral outcomes for both groups, and then the results on health outcomes.

The effects of the policy on behavioral outcomes are generally small and not significant for both groups. When they are significant, it is for children who were fully eligible for the program (5 years of eligibility) during the early years of the reform. We also show that only the impact on emotional disorders and anxiety remains persistent and significant over the elementary school years, but that the magnitude of the effect decreases by close to 50 percent, compared to the effect for 4-5 year-olds not in school.

On health outcomes, we report an increased risk of infections in the preschool years, but no effects are detected on children's health once in school. The idea that childcare acts as a protective factor during the school years is not supported by our results. Several reasons may explain this. First, the NLSCY data is not optimally suited to study the problem of immunity because questions on nose/throat and ear infections are only asked for the 0–3-year-olds.[27] However, the vast majority of studies dealing with this issue relate to such infections. Ball et al. (2000) show that exposure of young children to other children in daycare protects against the development of asthma in childhood. Here, we show that the policy has no effect on the probability of a serious asthmatic episode for children and that the adverse effects on overall health are no longer present once in school. Second, in our setting, we estimate the impact

27. These questions are also not available in CCHS data.

on all eligible children and do not distinguish between the different modes of care. However, the effects may depend on the type of childcare used. Côté et al. (2010) find that children attending large daycare settings ($\geq$ 6 unrelated children) at an early age (before age 2.5 years old) may acquire immunity, but no differences were observed for children in smaller daycare surroundings. For youths aged 12 to 19, we cannot produce robust evidence that the policy had an impact on health and behavior. In fact, a negative effect on the likelihood of smoking is estimated for this age group.

Overall, our results for older children are consistent with those of Datta Gupta and Simonsen (2010), in Denmark, who find that participating in a universal public program at the age of 3 has no impact on behavioral outcomes at the age of 7.[28] They are also consistent with Herbst and Tekin (2016), in the United States. These authors find that children receiving childcare subsidies have lower cognitive ability scores and more behavioral problems early on but these effects largely vanish by grade 3 when children are about 8 years old.

Baker et al. (2015) show that the Quebec policy had a lasting negative impact on non-cognitive skills (behavior, health, life satisfaction and criminal activity) of eligible children and youths. Our findings for some outcomes differ from these authors for several reasons. First, we consider the fact that children are exposed very differently to the program. For example, children aged 8 and 9 years old were treated partially (3 years of eligibility maximum) while children aged 5 to 7 have been fully treated (5 years of eligibility) in our samples. Similarly, some youths aged 12-14 were treated for 5 years, while others were only treated a few months. Not separating children with different treatment intensity results into estimates that are potentially masking important differences. In this study, we compare children with similar exposures to the program (partial vs full exposure) and show that there is a dose-response relationship. The findings for children partially treated are different from the findings of children fully treated (Tables 3, 6 and 7). Accounting for the intensity of treat-

28. The authors use the Strength and Difficulties Questionnaire (SDQ) to construct a behavioral outcome. The SDQ index is based on emotional symptoms, and on conduct-, hyperactivity/inattention-, and peer-relationship problems.

ment allows us to have more pre- and post-reform periods, which is important when using the Double-Difference estimator. Second, we focus on two-parent families, thereby eliminating the confounding policy factors that usually affect one-parent families, such as changes in the child benefit taxation parameters (see Kottelenberg and Lehrer (2013, 2014) for more details). Third, for the case of the 12-19 year-olds, we assess the robustness of the DD estimates using an additional control group, and show that DD significant effects are not significant with a DDD approach. Finally, we analyze the problem of immunity given its importance in the literature (Raynault et al., 2011).

Taking into account the children's treatment intensity, the family situation, introducing policy effects varying over time, and using different methods and performing certain statistical tests (adjusted p-values for the multiple outcomes, testing fade out effects, etc.), we present evidence, that although negative, the long-term effects of the policy are not as severe as in Baker et al. (2015). For preschoolers, we show that some of the effects found in BGM fade out after 2005. For school-aged children/youths, we show that the policy has generally no persistent effects except for anxiety.

Finally, we find that children of highly educated mothers tend to be the most adversely affected by the reform. Our estimates are consistent with Haeck et al. (2015) since the reform early on mainly affected the labor supply of mothers with a high level of education.[29] Low-educated mothers reacted later to the reform. Their labor force did not increase significantly before 2004. For their children, we observe a worsening of behavioral scores as of 2004, especially for the 2–3-year-olds. Our results are also in line with Loeb et al. (2007). These authors showed that nonparental care had adverse effects on children from affluent backgrounds, in particular for behavioral outcomes.[30] In sum, the impact of the reform, except for anxiety,

29. Before the reform, low-income families were eligible for childcare subsidies, making the net cost of childcare similar to that of the post-reform period. In contrast, mothers with higher levels of education (and thus possibly higher incomes) were not eligible for these subsidies before the reform.

30. Kottelenberg and Lehrer (2017) investigate the distributional effects of the Quebec policy on MSD and the Peabody Picture Vocabulary Test (PPVT) scores. For single parent families, they report that the policy had a positive effect on the MSD score, at nearly every percentile and in particular for individuals at the very bottom of the distribution.

is essentially contemporaneous or direct — that is, when children are not yet in school.

6 Conclusion

In this paper, we estimated the long-term effects of the Quebec childcare reform, both in terms of the age of the child and the time since the program was first implemented. More specifically, we study the long-term effects of the low-fee childcare reform on child health, motor and social development, and behavior. In a seminal paper, BGM show that the reform in its first few years had rather detrimental effects on prekindergarten children in Quebec. We follow treated children for more than 19 years and investigate the impact well beyond the first few years of the policy. A nonexperimental evaluation framework based on multiple pre- and post-treatment periods, with different effects for each period, is used to estimate the policy effects.

In line with previous research, we find that the reform had negative effects on preschool children's health and behavioral scores. However, our estimates by wave show that the effects for some outcomes decrease over time and in some cases eventually turn to be statistically insignificant by 2008.

We also find that for children aged 5 to 9 years old adverse effects persist only for anxiety, but they are smaller than for the 0–5-year-olds. When we turn to the results for children aged 12–19 years old, we find that negative effects of the policy with the DD method are not robust to a DDD estimation. These results suggest that the negative effects on preschool children

Our findings also show a positive effect of policy on MSD score for single-parent families. However, Kottelenberg and Lehrer find that the lower half of the distribution of two-parent families drives the negative effects reported in BGM (2008). This conclusion is inconsistent with our findings. A potentially important difference between those results and our estimates is that they examine these effects along the score distribution without considering mothers' education. In our paper, high-educated families were defined as having beyond high school education. High-educated individuals differ because some might have completed a university master's degree while others might have obtained a college diploma, among other degrees. Kottelenberg et al. (2017) also focused on cognitive scores, and the distributional effects of universal childcare on measures of non-cognitive skills may be different. Finally, possible confounding effects of concurrent policy reforms could have affected the least well off families. Future work should investigate the differential effects of the policy on one-parent and two-parent families at the bottom of the distribution.

do not generally carry over to elementary and secondary school years. Finally, our analysis by maternal education suggests that the negative effects are mainly driven by children of highly educated mothers.

Overall, the results corroborate those of BGM for preschoolers, but with some evidence that the adverse effects decline over time for some outcomes. These adverse effects are not as strong once children are in school or in their teens. Clearly, the reform did not benefit children. The network must improve to generate the benefits that early childcare has delivered in other countries. Finally, a more complete picture of the reform must also be achieved studying long-term effects of subsidized childcare on parental well-being. Increasing the participation of mothers in the labor market and decreasing the time mothers spend with the child could reduce maternal well-being and therefore, have an impact on the child (see Brodeur et al. 2013 ; Lebihan et al. 2015).

References

Almond, Douglas, and Janet Currie. 2011. "Human capital development before age five." *Handbook of labor economics* 4:1315–1486.

Baker, Michael. 2011. "Innis Lecture: Universal early childhood interventions: what is the evidence base?" *Canadian Journal of Economics/Revue canadienne d'économique* 44 (4): 1069–1105.

Baker, Michael, Jonathan Gruber, and Kevin Milligan. 2008. "Universal Child Care, Maternal Labor Supply, and Family Well–Being." *Journal of Political Economy* 116 (4): 709–745.

———. 2015. "Non-Cognitive Deficits and Young Adult Outcomes: The Long-Run Impacts of a Universal Child Care Program." Technical Report 21571, National Bureau of Economic Research.

Ball, Thomas M, Jose A Castro-Rodriguez, Kent A Griffith, Catharine J Holberg, Fernando D Martinez, and Anne L Wright. 2000. "Siblings, day-care attendance, and the risk of asthma and wheezing during childhood." *New England journal of medicine* 343 (8): 538–543.

Bradshaw, Jonathan, Petra Hoelscher, and Dominic Richardson. 2007. "An index of child well-being in the European Union." *Social Indicators Research* 80 (1): 133–177.

Brodeur, Abel, and Marie Connolly. 2013. "Do higher child care subsidies improve parental well-being? Evidence from Quebec's family policies." *Journal of Economic Behavior & Organization* 93:1–16.

Conseil du Trésor Québec. 2012. "Budget de dépenses 2012-2013, volume II: plans annuels de gestion des dépenses des ministères et organismes, pour l'année financière se terminant le 31 mars 2013." Technical Report.

Côté, Sylvana M, Amélie Petitclerc, Marie-France Raynault, Qian Xu, Bruno Falissard, Michel Boivin, and Richard E Tremblay. 2010. "Short-and long-term risk of infections as

a function of group child care attendance: an 8-year population-based study." *Archives of pediatrics & adolescent medicine* 164 (12): 1132–1137.

Currie, Janet, and Mark Stabile. 2007. "Mental health in childhood and human capital." In *The problems of disadvantaged youth: An economic perspective*, 115–148. University of Chicago Press.

Datta Gupta, Nabanita, and Marianne Simonsen. 2010. "Non-cognitive child outcomes and universal high quality child care." *Journal of Public Economics* 94 (1): 30–43.

———. 2016. "Academic performance and type of early childhood care." *Economics of Education Review* 53:217–229.

Felfe, Christina, Natalia Nollenberger, and Núria Rodríguez-Planas. 2015. "Can't buy mommy's love? Universal childcare and children's long-term cognitive development." *Journal of population economics* 28 (2): 393–422.

Haeck, Catherine, Pierre Lefebvre, and Philip Merrigan. 2014. "The distributional impacts of a universal school reform on mathematical achievements: A natural experiment from Canada." *Economics of Education Review* 41:137–160.

———. 2015. "Canadian evidence on ten years of universal preschool policies: the good and the bad." *Labour Economics* 36:137–157.

Havnes, Tarjei, and Magne Mogstad. 2011. "No child left behind: Subsidized child care and children's long-run outcomes." *American Economic Journal: Economic Policy* 3 (2): 97–129.

Heckman, James J. 2006. "Skill formation and the economics of investing in disadvantaged children." *Science* 312 (5782): 1900–1902.

Herbst, Chris M, and Erdal Tekin. 2016. "The impact of child-care subsidies on child development: evidence from geographic variation in the distance to social service agencies." *Journal of Policy Analysis and Management* 35 (1): 94–116.

Institut de la Statistique du Québec. 2004. "Quebec Survey on the Quality of Educational Daycare in 2003." Technical Report. http://www.grandirenqualite.gouv.qc.ca.

———. 2015. "Quebec Survey on the Quality of Educational Daycare in 2014." Technical Report. http://www.grandirenqualite.gouv.qc.ca.

Japel, Christa, Richard E Tremblay, and Sylvana Côté. 2005. "Quality counts!" *Choices* 11:5.

Kottelenberg, Michael J., and Steven F Lehrer. 2013. "New evidence on the impacts of access to and attending universal child-care in Canada." *Canadian Public Policy* 39 (2): 263–286.

———. 2014. "Do the Perils of Universal Childcare Depend on the Childs Age?" *CESifo Economic Studies* 60 (2): 338–365.

———. 2017. "Targeted or Universal Coverage? Assessing Heterogeneity in the Effects of Universal Child Care." *Journal of Labor Economics* 35 (3): 609–653.

Lebihan, Laetitia, Catherine Haeck, Pierre Lefebvre, and Philip Merrigan. 2015. "Universal child care and longer-run effects on parental health and behaviors: Evidence from a Canadian universal child care program." Technical Report 15-04, UQAM-GRCH.

Lefebvre, Pierre, and Philip Merrigan. 2008. "Child-care policy and the labor supply of mothers with young children: A natural experiment from Canada." *Journal of Labor Economics* 26 (3): 519–548.

Lefebvre, Pierre, Philip Merrigan, and Matthieu Verstraete. 2009. "Dynamic labour supply effects of childcare subsidies: Evidence from a Canadian natural experiment on low-fee universal child care." *Labour Economics* 16 (5): 490–502.

Loeb, Susanna, Margaret Bridges, Daphna Bassok, Bruce Fuller, and Russell W Rumberger. 2007. "How much is too much? The influence of preschool centers on children's social and cognitive development." *Economics of Education review* 26 (1): 52–66.

MFA Québec. 2012. "Situation des centres de la petite enfance, des garderies et la garde en milieu familial au Québec." Technical Report.

Raynault, Marie-France, Nicole F Bernier, Sylvana Côté, Sarah Curtis, Jean-Yves Duclos, Louise Potvin, and Louise Seguin. 2011. "L'impact des politiques de soutien à la

garde sur la santé et le développement des enfants d'âge préscolaire." Technical Report, Programme Actions Concertées.

Shaffer, Juliet Popper. 1995. "Multiple hypothesis testing." *Annual review of psychology* 46 (1): 561–584.

Simes, R John. 1986. "An improved Bonferroni procedure for multiple tests of significance." *Biometrika* 73 (3): 751–754.

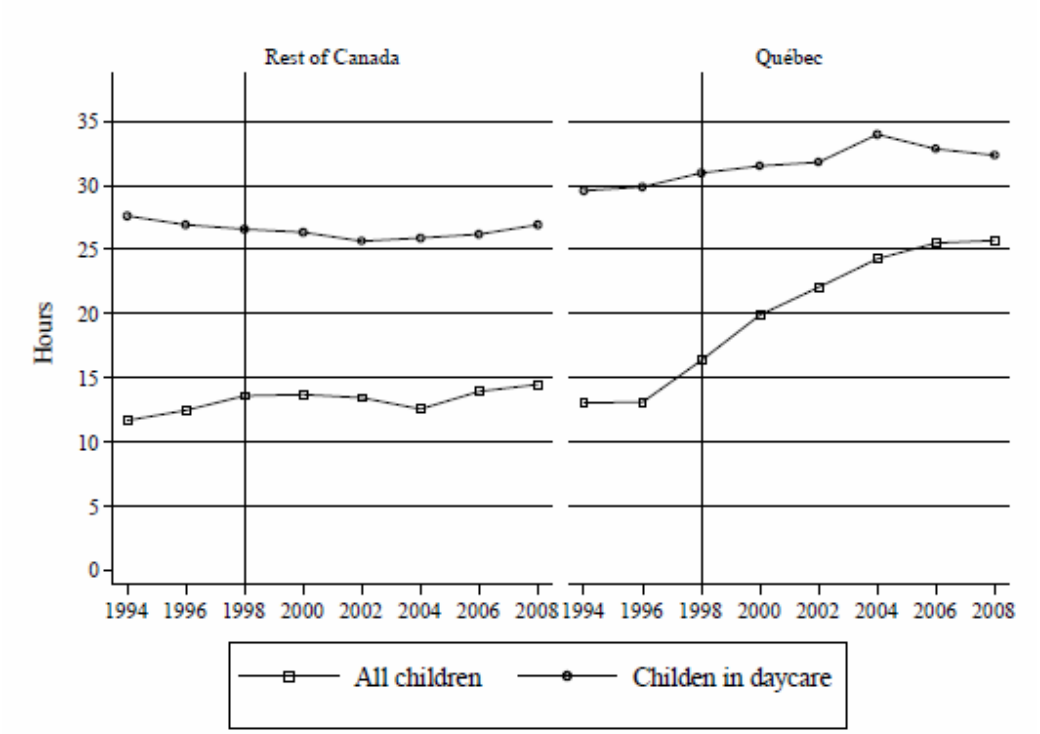
Statistics Canada. 2006. "Canadian Community Health Survey (CCHS) Cycle 3.1 (2005)." Technical Report.

Strachan, David P. 2000. "Family size, infection and atopy: the first decade of the 'hygiene hypothesis'." *Thorax* 55 (Suppl 1): S2.

UNICEF, Office of Research. 2013. "Child well-being in rich countries: A comparative overview." Technical Report innocenti Report Card 11. Florence, UNICEF.

Vérificateur général du Québec. 2011. "Services de garde éducatifs à l'enfance: qualité, performance et reédition de comptes." Technical Report ch 5.

Figure 1 – Mean hours per week spent in the primary care arrangement for children aged 1 to 4.



Note: Shows the evolution of the mean number of hours per week spent in the primary mode of care in the Rest of Canada (left panel) and Québec (right panel) non conditionally (hollow square) and conditionally on attending childcare (hollow circle). The sample includes NLSCY cross-sectional children aged 1 to 4. Source: Haeck, Lefebvre and Merrigan (2015).

Figure 2 – Mean values of measures for child outcomes by region and age: waves 1-8 of the NLSCY

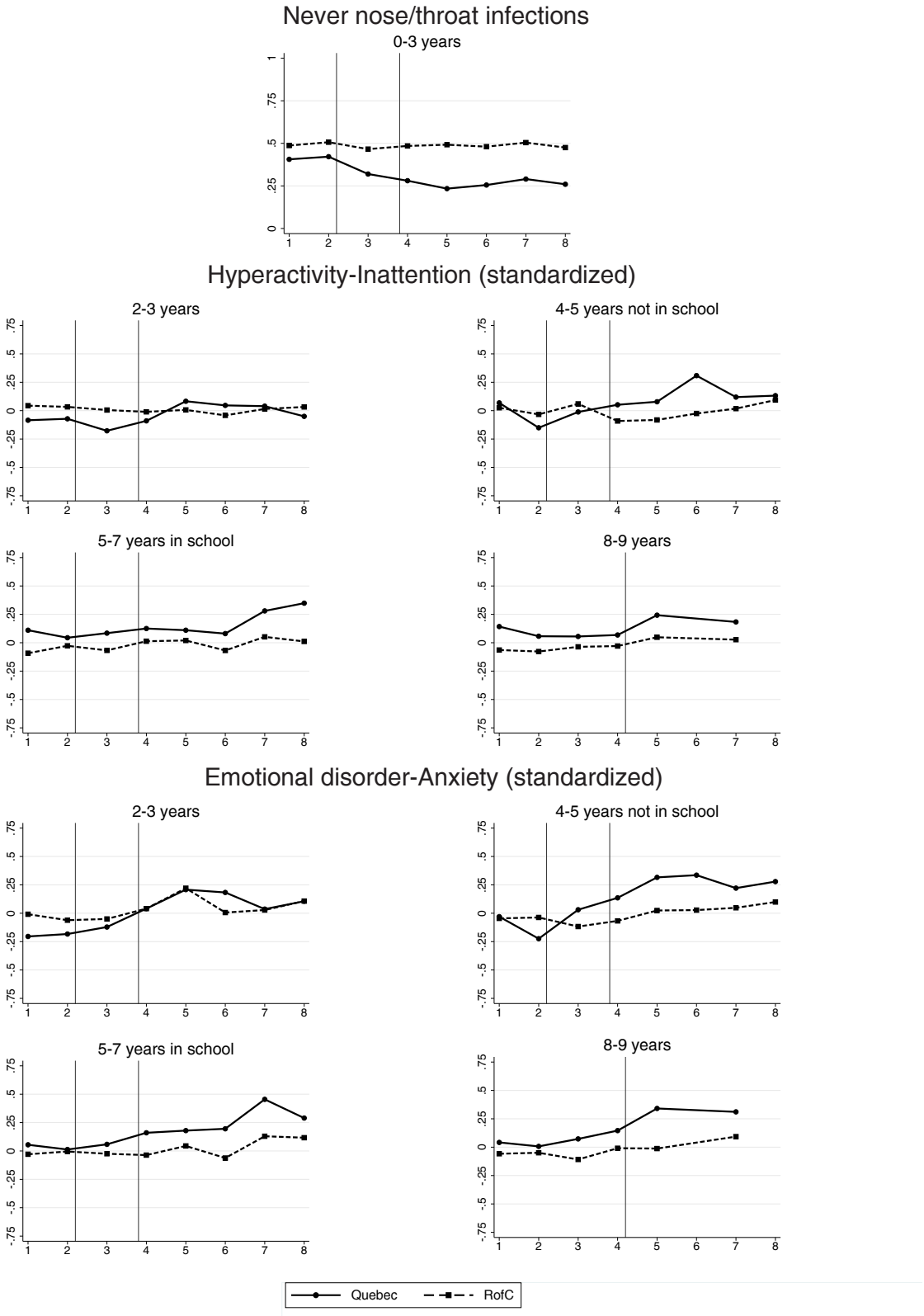


Figure 3.A – Mean values of measures for youth outcomes by region and age: CCHS

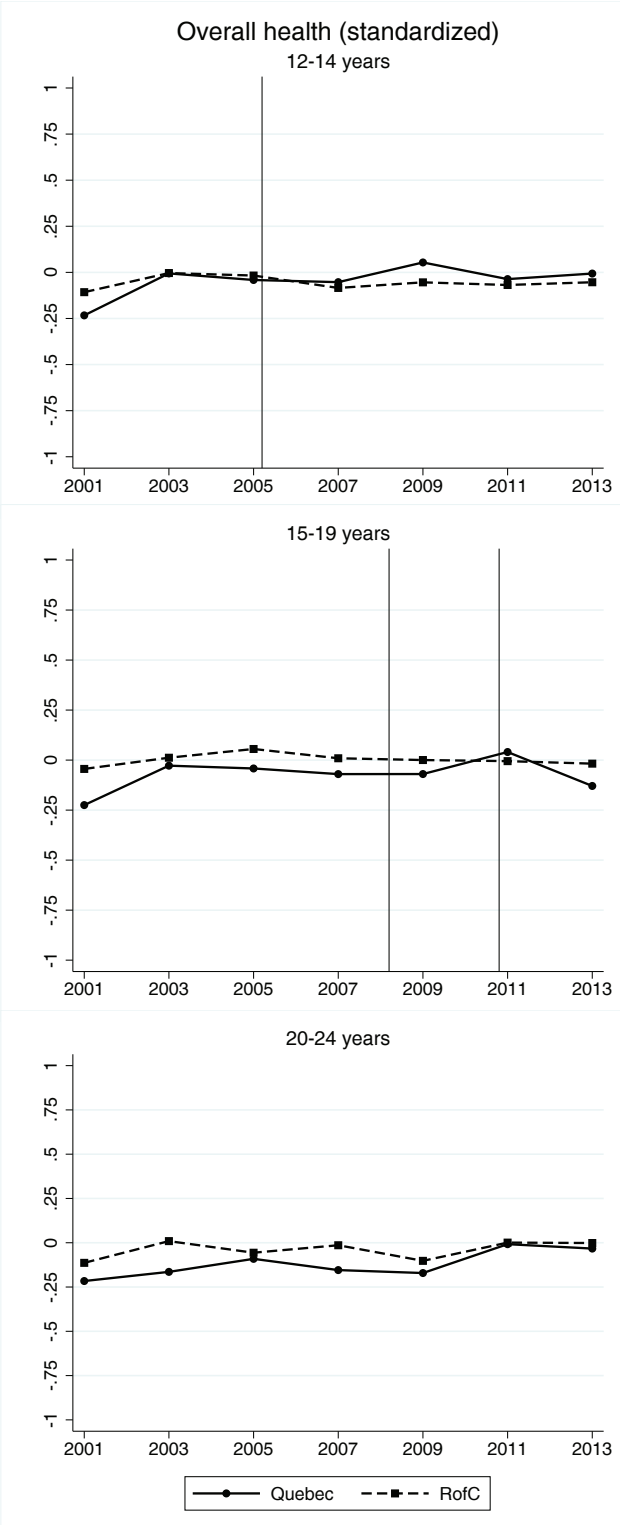


Figure 3.B – Mean values of measures for youth outcomes by region and age: CCHS

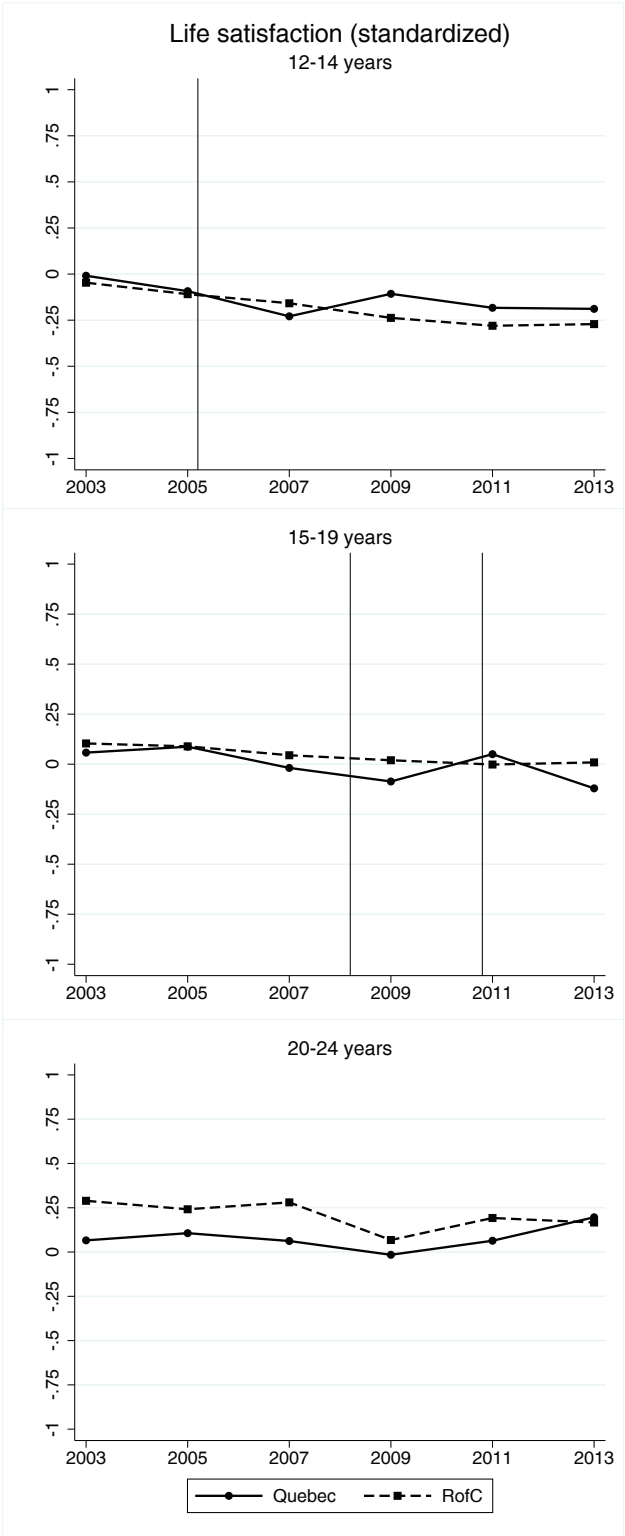


Figure 3.C – Mean values of measures for youth outcomes by region and age: CCHS

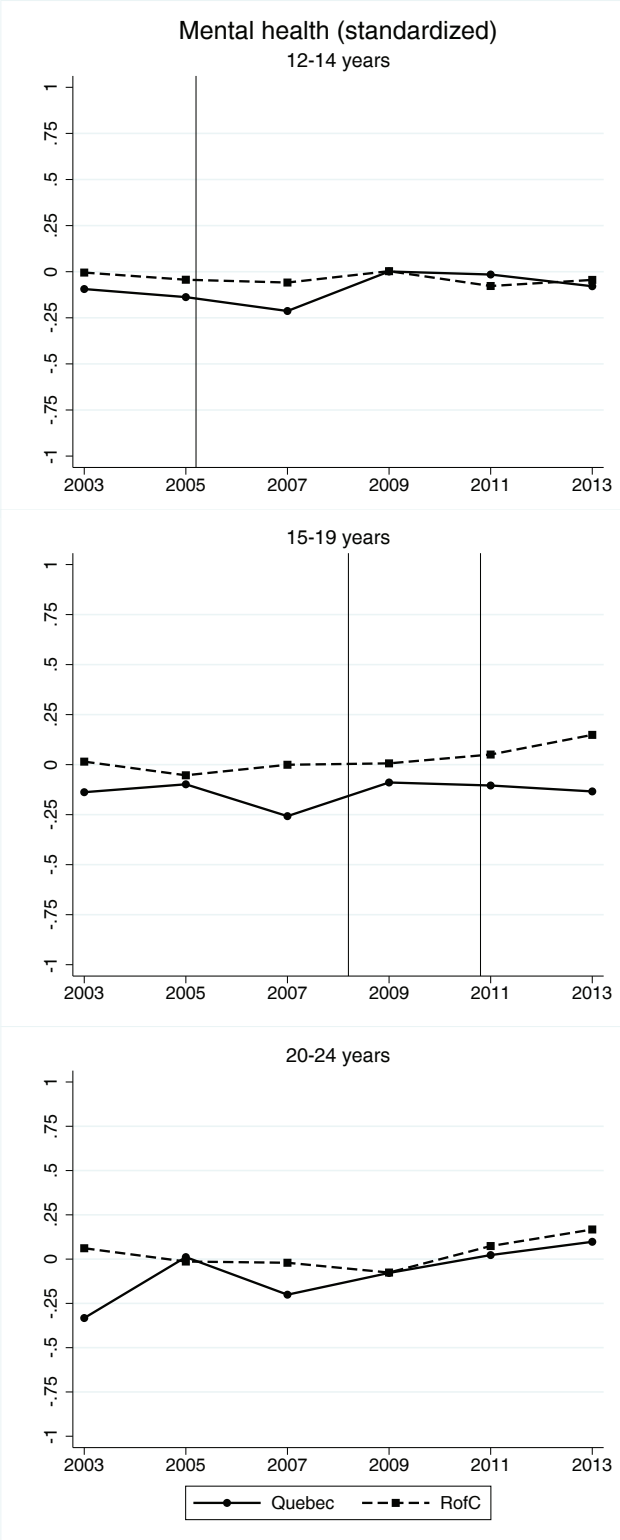


Figure 3.D – Mean values of measures for youth outcomes by region and age: CCHS

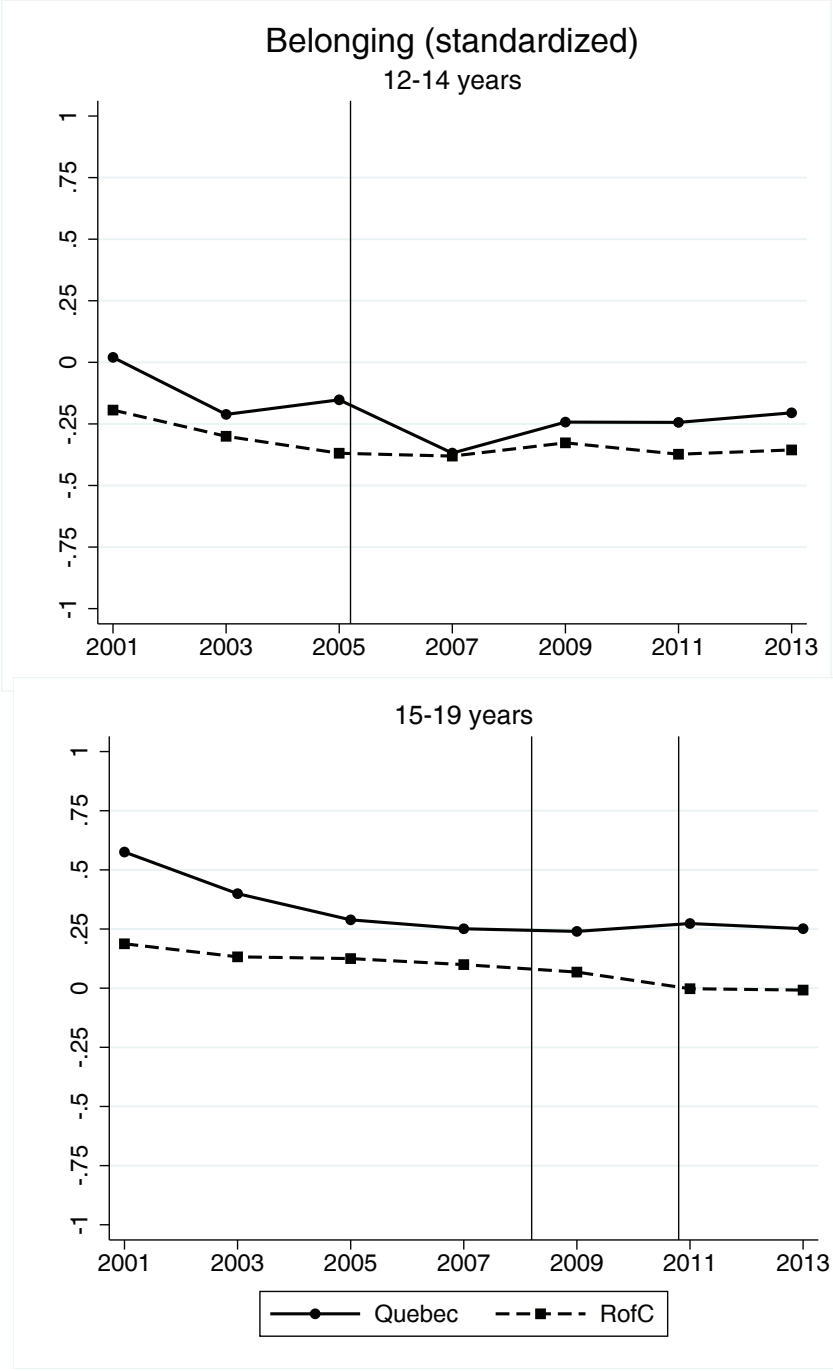


Table 1 – Eligibility for low-fee childcare by age and NLSCY/CCHS wave

		Eligibility			
Data	Age in years	No	Partially β^P (1 to 3 years)	Full early β^{FE} (4 to 5 years)	Full late β^{FL} (4 to 5 years)
NLSCY	0 to 5 not in school	Wave 1-2	Wave 4	Wave 5-6	Wave 7-8
	5 to 7 in school	Wave 1-2	Wave 4-6	Wave 7-8	n.a
	8 to 9	Wave 1-4	Wave 5-7	n.a	n.a
CCHS	12 to 14	≤ 2005	2007-2010	2011-2014	n.a
	15 to 19	≤ 2008	2011-2014	n.a	n.a

Notes: This table shows eligibility for the Quebec childcare program for a child according to his age and NLSCY/CCHS wave. We distinguish four eligibility cohorts: (1) completely ineligible children; (2) partially eligible children i.e. with 1-3 years of program eligibility; (3) fully eligible children from birth and during the first years of the program; and (4) fully eligible children from birth since 2006. The term n.a (not available) means that the child is eligible for low-fee childcare spaces but data for this age group in this wave are not available.

Table 2 – Estimated effects of the policy on children 0 to 5 years old (not in school)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	β_{78} vs β_{4-8}	N
Health								
Child in	**-0.038****	-0.036*	**-0.049****	**-0.060****	-0.013	-0.037*	0.023	50,063
excellent health (+)	**(0.017)**	(0.020)	**(0.022)**	**(0.026)**	(0.023)	(0.021)	(0.014)	
Child has	0.013	0.012	0.004	0.018	-0.001	**0.028***	0.003	50,065
been injured (-)	(0.013)	(0.013)	(0.020)	(0.016)	(0.015)	**(0.016)**	(0.011)	
Child had	0.004	0.005	0.004	-0.016*	-0.001	**0.024****	0.014	50,038
asthma attack (-)	(0.007)	(0.008)	(0.010)	(0.009)	(0.010)	**(0.010)**	(0.009)	
Never had a nose/	**-0.141*****	**-0.115*****	**-0.189*****	**-0.147*****	**-0.138*****	**-0.125*****	0.018	40,450
throat Infections (+)	**(0.024)**	**(0.024)**	**(0.032)**	**(0.034)**	**(0.034)**	**(0.032)**	(0.022)	
Never had an ear	**-0.063****	-0.040	**-0.089*****	**-0.090****	-0.042	**-0.060***	0.021	40,429
Infection (+)	**(0.028)**	(0.032)	**(0.030)**	**(0.036)**	(0.036)	**(0.034)**	(0.020)	
Motor and Social Development								
MSD Score (+)	-0.092	**-0.176****	-0.065	-0.173	-0.139	0.055	0.103	38,569
	(0.063)	**(0.082)**	(0.080)	(0.120)	(0.099)	(0.088)	(0.064)	
Behavioral scores of 2 and 3-year-olds								
Hyperactivity-	**0.089****	0.022	**0.171*****	**0.159***	0.094	0.029	-0.054	20,430
Innatention (-)	**(0.045)**	(0.042)	**(0.048)**	**(0.087)**	(0.082)	(0.053)	(0.057)	
Emotional disorder-	**0.132****	0.084	0.095	**0.270*****	0.107*	0.113*	-0.038	20,506
Anxiety (-)	**(0.053)**	(0.060)	(0.062)	**(0.070)**	(0.063)	(0.060)	(0.047)	
Physical Aggression (-)	**0.216*****	0.157**	**0.187****	**0.287*****	**0.277*****	0.185*	0.017	20,346
	(0.076)	(0.075)	**(0.083)**	**(0.096)**	**(0.081)**	(0.094)	(0.053)	
Separation- Anxiety (-)	0.032	0.026	0.012	**0.112****	-0.010	0.024	-0.041	20,530
	(0.045)	(0.052)	(0.074)	**(0.046)**	(0.065)	(0.067)	(0.049)	
Behavioral scores of 4 and 5-year-olds								
Hyperactivity-	**0.245*****	**0.240*****	**0.290*****	**0.370*****	**0.201*****	0.120*	**-0.134****	9,525
Innatention (-)	**(0.055)**	**(0.075)**	**(0.054)**	**(0.066)**	**(0.068)**	(0.066)	**(0.056)**	
Emotional disorder-	**0.378*****	**0.362*****	**0.453*****	**0.431*****	**0.385*****	**0.251*****	**-0.095***	9,543
Anxiety (-)	**(0.071)**	**(0.071)**	**(0.071)**	**(0.073)**	**(0.079)**	**(0.085)**	**(0.054)**	
Physical Aggression (-)	**0.171****	**0.235*****	**0.221****	**0.241*****	**0.182****	-0.045	**-0.162****	9,533
	(0.075)	**(0.070)**	**(0.102)**	**(0.070)**	**(0.083)**	(0.075)	**(0.076)**	
Indirect Aggression (-)	0.123	**0.225****	**0.214****	0.022	0.054	0.059	**-0.108****	9,331
	(0.094)	**(0.107)**	**(0.102)**	(0.098)	(0.096)	(0.090)	**(0.053)**	

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1. We also test for fade-out effect in waves 7 and 8 by including a dummy (β_{4-8}) and a dummy (β_{7-8}) (β_{7-8} shown here). We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
***: significant at 1% ; **: significant at 5% ;*: significant at 10%

Table 3 – Estimated effects of the policy on children 5 to 9 years old (in school)

	Children 5 to 7							Children 8 to 9					
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	Test β_4 $=\beta_7=\beta_8$	Test β_4 $=\beta_7=\beta_8=0$	N	β_{5-7} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	Test β_5 $=\beta_7$	Test β_5 $=\beta_7=0$	N
Health													
Child in excellent health (+)	-0.034 (0.026)	-0.038 (0.030)	-0.021 (0.030)	-0.041 (0.028)	0.652	0.441	17,311	-0.037 (0.041)	-0.036 (0.065)	-0.038 (0.035)	0.978	0.535	11,556
Child had asthma attack (-)	0.013 (0.012)	0.026** (0.013)	0.001 (0.012)	0.007 (0.017)	0.097	0.137	17,302	0.020 (0.013)	0.001 (0.012)	**0.040*** (0.014)**	0.005	0.009	11,556
Behavioral scores													
Hyperactivity-Innatention (-)	0.089 (0.081)	-0.022 (0.084)	0.078 (0.098)	**0.251*** (0.091)**	0.002	0.004	17,188	0.074* (0.042)	0.098* (0.055)	0.047 (0.035)	0.302	0.182	11,464
Emotional disorder-Anxiety (-)	0.195** (0.088)	0.141 (0.087)	0.250* (0.135)	**0.210** (0.086)**	0.237	0.046	17,213	**0.210*** (0.066)**	**0.250*** (0.049)**	0.166 (0.101)	0.367	0.000	11,467
Physical Aggression (-)	0.112* (0.066)	0.130* (0.078)	0.129* (0.067)	0.070 (0.070)	0.309	0.147	17,187	0.100* (0.058)	0.058 (0.069)	**0.149** (0.073)**	0.307	0.121	11,451
Indirect Aggression (-)	0.098 (0.105)	0.030 (0.114)	0.157 (0.146)	0.130 (0.137)	0.649	0.701	16,536	0.094 (0.064)	0.050 (0.070)	0.145** (0.068)	0.143	0.091	10,857

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with children 5-7 in school and 7-9 in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
***: significant at 1% ; **: significant at 5% ;*: significant at 10%

Table 4 – Estimated effects of the policy on children 0 to 5 years old (not in school) by maternal education

	Maternal Education: High school or less							Maternal Education: Some post-secondary or more						
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N
Health														
Child in	-0.058*	**-0.113****	-0.053	-0.009	-0.010	**-0.088*****	13,535	-0.031*	-0.008	**-0.048****	**-0.078*****	-0.007	-0.023	36,528
excellent health (+)	(0.031)	**(0.044)**	(0.047)	(0.049)	(0.044)	**(0.034)**		(0.018)	(0.024)	**(0.023)**	**(0.027)**	(0.023)	(0.024)	
Child has	-0.008	-0.006	-0.016	-0.013	-0.039	0.033	13,535	0.018	0.019*	0.009	**0.028***	0.007	**0.025***	36,530
been injured (-)	(0.026)	(0.026)	(0.031)	(0.032)	(0.030)	(0.040)		(0.011)	(0.011)	(0.019)	**(0.014)**	(0.013)	**(0.013)**	
Child had	-0.008	-0.006	0.001	-0.029*	-0.017	0.011	13,525	0.008	0.008	0.005	-0.011	0.004	**0.029*****	36,513
asthma attack (-)	(0.012)	(0.015)	(0.018)	(0.017)	(0.016)	(0.022)		(0.008)	(0.011)	(0.012)	(0.012)	(0.011)	**(0.009)**	
Never had a nose/	**-0.108*****	**-0.082****	**-0.117****	**-0.153*****	-0.048	**-0.138*****	10,901	**-0.150*****	**-0.128*****	**-0.208*****	**-0.144*****	**-0.155*****	**-0.125*****	29,549
throat Infections (+)	**(0.032)**	**(0.035)**	**(0.046)**	**(0.046)**	(0.058)	**(0.042)**		**(0.026)**	**(0.029)**	**(0.032)**	**(0.037)**	**(0.035)**	**(0.035)**	
Never had an ear	0.000	-0.004	0.009	-0.019	0.032	-0.010	10,893	**-0.085*****	-0.056	**-0.121*****	**-0.115*****	-0.066	**-0.078****	29,536
Infection (+)	(0.034)	(0.035)	(0.045)	(0.053)	(0.038)	(0.074)		**(0.031)**	(0.036)	**(0.034)**	**(0.041)**	(0.042)	**(0.033)**	
Motor and Social Development														
MSD Score (+)	-0.072	-0.220	-0.094	-0.121	-0.123	0.197	10,367	**-0.106***	**-0.170****	-0.060	-0.197	-0.148	0.012	28,202
	(0.111)	(0.141)	(0.175)	(0.111)	(0.127)	(0.136)		**(0.054)**	**(0.085)**	(0.072)	(0.146)	(0.094)	(0.076)	
Behavioral scores of 2 and 3-year-olds														
Hyperactivity-	-0.093	-0.250*	-0.103	-0.110	0.100	0.027	5,640	**0.159*****	0.125**	**0.274*****	**0.253*****	**0.143****	0.060	14,790
Innatention (-)	(0.130)	(0.128)	(0.139)	(0.196)	(0.267)	(0.161)		**(0.044)**	(0.063)	**(0.063)**	**(0.054)**	**(0.057)**	(0.059)	
Emotional disorder-	0.182*	0.123	**-0.241*****	**0.286*****	0.200	0.551*	5,672	0.105	0.067	**0.197****	**0.253****	0.085	-0.006	14,834
Anxiety (-)	(0.108)	(0.104)	**(0.081)**	**(0.101)**	(0.142)	(0.289)		(0.069)	(0.063)	**(0.079)**	**(0.107)**	(0.067)	(0.114)	
Physical Aggression (-)	0.224*	0.146	0.004	**0.441*****	0.305	0.226**	5,611	**0.207*****	0.150*	**0.260*****	**0.187***	**0.273*****	0.175*	14,735
	(0.118)	(0.111)	(0.187)	**(0.118)**	(0.230)	(0.114)		**(0.079)**	(0.082)	**(0.091)**	**(0.102)**	**(0.080)**	(0.101)	
Separation- Anxiety (-)	0.027	0.120	-0.147*	0.006	0.109	0.052	5,666	0.029	-0.030	0.060	**0.154****	-0.023	0.015	14,864
	(0.085)	(0.132)	(0.080)	(0.135)	(0.219)	(0.083)		(0.047)	(0.048)	(0.089)	**(0.063)**	(0.057)	(0.074)	
Behavioral scores of 4 and 5-year-olds														
Hyperactivity-	**0.224****	**0.308****	**0.252****	**0.404*****	-0.246	0.115	2,606	**0.262*****	**0.219****	**0.296*****	**0.333*****	**0.335*****	0.149	6,919
Innatention (-)	**(0.106)**	**(0.137)**	**(0.118)**	**(0.129)**	(0.242)	(0.403)		**(0.086)**	**(0.094)**	**(0.090)**	**(0.108)**	**(0.096)**	(0.104)	
Emotional disorder-	**0.465*****	**0.554*****	**0.667*****	**0.385*****	0.199*	0.094	2,610	**0.348*****	**0.292*****	**0.333*****	**0.462*****	**0.411*****	**0.271*****	6,933
Anxiety (-)	**(0.116)**	**(0.126)**	**(0.094)**	(0.104)	(0.118)	(0.214)		**(0.084)**	**(0.080)**	**(0.088)**	**(0.088)**	**(0.095)**	**(0.095)**	
Physical Aggression (-)	0.114	**0.406*****	**0.278***	-0.087	-0.287*	-0.227	2,603	**0.191*****	**0.171*****	**0.148***	**0.372*****	**0.299*****	0.005	6,930
	(0.141)	**(0.132)**	**(0.144)**	(0.132)	(0.147)	(0.207)		**(0.073)**	**(0.064)**	**(0.089)**	**(0.066)**	**(0.076)**	(0.081)	
Indirect Aggression (-)	-0.202	-0.110	-0.023	-0.303	**-0.758*****	-0.049	2,542	**0.282*****	**0.389*****	**0.340*****	**0.216***	**0.325*****	0.136*	6,789
	(0.164)	(0.179)	(0.174)	(0.185)	**(0.270)**	(0.170)		**(0.085)**	**(0.148)**	**(0.084)**	**(0.116)**	**(0.107)**	(0.071)	

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with children aged 0-5 not in school by maternal education. Standard errors are clustered by province and by birth-year cohort. ***: significant at 1% ; **: significant at 5% ;*: significant at 10%

Table 5 – Estimated effects of the policy on children 5 to 9 years old (in school) by maternal education

	5 to 7 years					8 and 9 years			
	Maternal Education: High school or less								
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N	β_{5-7} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	N
Health									
Child in	0.051	0.065	**0.132*** **	-0.092	4,694	0.028	0.056	-0.010	3,697
excellent health (+)	(0.039)	(0.051)	**(0.047)**	(0.067)		(0.054)	(0.078)	(0.045)	
Child had	0.012	0.043	-0.009	-0.032*	4,692	0.004	-0.002	0.013	3,697
asthma attack (-)	(0.024)	(0.030)	(0.025)	(0.018)		(0.023)	(0.024)	(0.031)	
Behavioral Scores									
Hyperactivity-	0.055	0.004	0.113	0.096	4,650	-0.026	-0.012	-0.046	3,656
Innatention (-)	(0.079)	(0.094)	(0.086)	(0.137)		(0.099)	(0.080)	(0.197)	
Emotional disorder-	0.053	0.034	-0.022	0.194	4,665	**0.301** **	**0.298*** **	0.304	3,666
Anxiety (-)	(0.104)	(0.076)	(0.112)	(0.354)		**(0.118)**	**(0.078)**	(0.234)	
Physical Aggression (-)	0.077	0.044	0.057	0.176	4,653	0.067	0.070	0.063	3,654
	(0.071)	(0.069)	(0.139)	(0.120)		(0.083)	(0.092)	(0.116)	
Indirect Aggression (-)	-0.009	-0.083	0.152	-0.044	4,490	**0.268*** **	**0.256** **	0.287*	3,464
	(0.113)	(0.113)	(0.106)	(0.223)		**(0.101)**	**(0.103)**	(0.161)	
	Maternal Education: Some post-secondary or more								
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N	β_{5-7} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	N
Health									
Child in	-0.064	-0.075	-0.074	-0.041	12,617	-0.069	-0.085	-0.053	7,859
excellent health (+)	(0.042)	(0.052)	(0.046)	(0.042)		(0.042)	(0.064)	(0.039)	
Child had	0.018	0.020	0.011	0.024	12,610	**0.030** **	0.005	**0.056*** **	7,859
asthma attack (-)	(0.017)	(0.018)	(0.017)	(0.023)		**(0.014)**	(0.014)	**(0.011)**	
Behavioral Scores									
Hyperactivity-	0.099	-0.060	0.069	**0.309** **	12,538	0.120*	0.134*	0.107	7,808
Innatention (-)	(0.114)	(0.111)	(0.126)	**(0.122)**		(0.065)	(0.079)	(0.083)	
Emotional disorder-	0.250**	0.184	0.340*	0.236*	12,548	**0.190*** **	**0.235*** **	0.144*	7,801
Anxiety (-)	(0.119)	(0.118)	(0.173)	(0.137)		**(0.070)**	**(0.072)**	(0.074)	
Physical Aggression (-)	0.152*	0.183*	0.185*	0.085	12,534	0.105	0.021	**0.189** **	7,797
	(0.087)	(0.096)	(0.102)	(0.092)		(0.075)	(0.085)	**(0.076)**	
Indirect Aggression (-)	0.139	0.082	0.167	0.179	12,046	-0.005	-0.080	0.070	7,393
	(0.153)	(0.170)	(0.204)	(0.161)		(0.090)	(0.090)	(0.085)	

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FE}), based on Table 1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with children 5-7 in school and 8-9 by maternal education. Standard errors are clustered by province and by birth-year cohort.
***: significant at 1% ; **: significant at 5% ;*: significant at 10%

Table 6 – Estimated effects of the policy on youths 12 to 14 years old

Dependent Variable	Doubles Differences						Triples Differences					
	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test $\beta_1 = \beta_2$	Test $\beta_1 = \beta_2 = 0$	N	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test $\beta_1 = \beta_2$	Test $\beta_1 = \beta_2 = 0$	N
Health												
Overall health (-)	**0.118*** **	**0.125*** **	**0.109*** **	0.640	0.006	26,167	0.040	0.100	-0.026	0.222	0.471	40,597
	(0.037)	**(0.046)**	**(0.034)**				(0.095)	(0.115)	(0.079)			
Had asthma attack (-)	0.001	0.002	0.001	0.902	0.958	26,150	0.005	0.013	-0.004	0.435	0.689	40,573
	(0.005)	(0.006)	(0.007)				(0.013)	(0.015)	(0.015)			
Mental health (-)	0.063	0.008	**0.126*** **	0.051	0.008	20,742	-0.037	-0.082	-0.005	0.321	0.546	33,038
	(0.041)	(0.050)	**(0.039)**				(0.122)	(0.114)	(0.120)			
Belonging (-)	-0.077	**-0.128** **	-0.019	0.002	0.005	24,354	-0.023	-0.083	0.036	0.273	0.529	38,185
	(0.050)	**(0.050)**	(0.045)				(0.071)	(0.106)	(0.062)			
Life satisfaction (-)	0.040	0.006	**0.079*** **	0.211	0.004	20,758	-0.098	-0.096	-0.107**	0.918	0.094	33,052
	(0.037)	(0.058)	**(0.023)**				(0.080)	(0.116)	(0.048)			
Behavior												
Drank Alcohol (-)	0.009	0.010	0.009	0.959	0.672	26,128	-0.018	-0.034	-0.006	0.298	0.402	40,551
	(0.012)	(0.011)	(0.018)				(0.033)	(0.032)	(0.037)			
Doesn't smoke (+)	**0.018*** **	**0.017*** **	**0.020** **	0.668	0.025	26,157	**0.080*** **	**0.100*** **	**0.060*** **	0.003	0.000	40,585
	(0.007)	**(0.006)**	**(0.009)**				**(0.023)**	**(0.021)**	**(0.022)**			

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β) and the effects by wave (β_1^P to β_2^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with youth aged 12-14 in two-parent families (CCHS data). Standard errors are clustered by province and year.
***: significant at 1% ; **: significant at 5% ;*: significant at 10%

Table 7 – Estimated effects of the policy on youths 15 to 19 years old

	Doubles Differences		Triples Differences	
Dependent Variable	β^P (2011-2014)	N	β^P (2011-2014)	N
Health				
Overall health (-)	0.056	32,894	-0.068	45,242
	(0.046)		(0.052)	
Had asthma attack (-)	-0.004	32,875	-0.006	45,216
	(0.006)		(0.009)	
Mental health (-)	-0.082	25,231	**-0.202*** **	35,501
	(0.054)		**(0.064)**	
Belonging (-)	0.030	31,380	0.083	43,191
	(0.041)		(0.086)	
Life satisfaction (-)	-0.019	25,219	-0.168*	35,487
	(0.050)		(0.089)	
Stress (-)	-0.022	28,331	0.031	40,665
	(0.051)		(0.046)	
Behavior				
Drank Alcohol (-)	0.039	32,843	0.034	45,186
	(0.024)		(0.022)	
Doesn't smoke (+)	**0.035*** **	32,877	**0.057** **	45,224
	(0.012)		**(0.023)**	

Notes: This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β^P), based on Table 1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with youth aged 15-19 in two-parent families (CCHS data). Standard errors are clustered by province and year.
***: significant at 1% ; **: significant at 5% ;*: significant at 10%

TABLE A.1 – Eligibility for low-fee childcare by age of the child and NLSCY wave

	Age	Wave 1 (1994-95)	Wave 2 (1996-97)	Wave 3 (1998-99)	Wave 4 (2000-01)	Wave 5 (2002-03)	Wave 6 (2004-05)	Wave 7 (2006-07)	Wave 8 (2008-09)
		Wave 1-5 : Baker, Gruber and Milligan (2008)					Wave 6-8 : Additional Data		
0-4 years :	0	×	×	×	0.5	0.5	0.5	0.5	0.5
Baker,	1	×	×	×	0.5	1	1	1	1
Gruber	2	×	×	×	0.5	2	2	2	2
and	3	×	×	0.5	1	2	3	3	3
Milligan (2008)	4	×	×	0.5	1	2	4	4	4
	5	×	×	1	2	3	4	5	5
5–9 years :	6	×	×	×	1	2 (n.a)	3 (n.a)	5	5
Additional	7	×	×	×	1	2 (n.a)	3 (n.a)	4	5
data	8	×	×	×	×	1	2 (n.a)	3	5 (n.a)
	9	×	×	×	×	1	2 (n.a)	3	4 (n.a)

Notes : This table shows the eligible children in Quebec to the low-fee daycare reform (grey shaded area) and non-eligible children in Quebec (indicated by a symbol ×) according to the child's age and wave. Numbers indicate the number of years of eligibility. For example, a 5 year-old child in wave 5 (and therefore born in 1997) was eligible for three years of low-fee child care. The index 0.5 refers to the fact that the child is eligible for a few months, not a year. We exclude wave 3 for children 0-7 years old in order to avoid overlapping of treated and untreated in the same cycle. The term n.a (not available) means that the child is eligible for low-fee child care spaces but data for this age group in this wave are not available in the NLSCY. Baker, Gruber and Milligan (2008) captured the short-term effects of the reform up to 2003. We extend the observation period to 2009.

TABLE A.2 – Child outcomes index component (NLSCY))

Child outcome Index	Questions : How often would you say that child :
Hyperactivity- Innatention 2-3 years old	a) Can't sit still, is restless or hyperactive ?
(Range : 0-12)	b) Is distractible, has trouble sticking to any activity ?
	c) Can't concentrate, can't pay attention for long ?
	d) Has difficulty awaiting turn in games or groups ?
	e) cannot settle to anything for more than a few moments ?
	f) is inattentive ?
Emotional Disorder- Anxiety 2-3 years	a) Seems to be unhappy, sad or depressed ?
(Range : 0-12)	b) Is not as happy as other children ?
	c) is too fearful or anxious ?
	d) Is worried ?
	e) is nervous, highstrung or tense ?
	f) has trouble enjoying him/herself ?
Physical Aggression and Opposition 2-3 years	a) is defiant
(Range : 0-16)	b) Gets into many fights ?
	c) Doesn't change behavior after punishment
	d) has temper tantrums or hot temper
	e) has difficulty awaiting turn in games or groups
	f) reacts with anger and fighting
	g) has angry moods
	h) Kicks, bites, hits other children ?
Separation anxiety 2-3 years	a) cries a lot
(Range : 0-10)	b) clings to adults or is too dependent
	c) Doesn't want to sleep alone
	d) constantly seeks help
	e) Upset upset when separated from parents
Hyperactivity- Innatention 4-9 years	a) Can't sit still, is restless or hyperactive ?
(Range : 0-14)	b) Is distractible, has trouble sticking to any activity ?
	c) Can't concentrate, can't pay attention for long ?
	d) Is impulsive, acts without thinking ?
	e) Has difficulty awaiting turn in games or groups ?
	f) Cannot settle to anything for more than a few moments ?
	g) Is inattentive ?
Emotional Disorder- Anxiety 4-9 years	a) Seems to be unhappy, sad or depressed ?
(Range : 0-14)	b) Is not as happy as other children ?
	c) is too fearful or anxious ?
	d) Is worried ?
	e) Cries a lot ?
	f) Is nervous, highstrung or tense ?
	g) Has trouble enjoying him/herself ?
Physical Aggression 4-9 years	a) Gets into many fights ?
(Range : 0-12)	b) When another child accidentally hurts him/her, assumes that the other child meant to do it, and then reacts with anger and fighting
	c) Physically attacks people ?
	d) Threatens people ?
	e) Is cruel, bullies or is mean to others ?
	f) Kicks, bites, hits other children ?
Indirect Aggression 4-9 years	a) When mad at someone, tries to get others to dislike that person
(Range : 0-10)	b) When mad at someone, becomes friends with another as revenge ?
	c) When mad at someone, says bad things behind the other's back ?
	d) When mad at someone, says to others : let's not be with him/her ?
	e) When mad at someone, tells the other one's secrets to a third person ?

TABLE A.3 – Summary Statistics of Children aged 0 to 9 Years Old (NLSCY)

	Quebec		Rest of Canada	
Variable	Pre-Policy	Post-Policy	Pre-Policy	Post-Policy
Child is a boy	0.51	0.51	0.51	0.51
Mother				
Less than high school	0.17	0.10	0.10	0.08
High school diploma	0.16	0.15	0.20	0.19
Some post-secondary	0.25	0.16	0.28	0.15
Post-secondary degree	0.42	0.59	0.42	0.59
Age 14-24 at birth	0.20	0.20	0.17	0.16
Age 25-29 at birth	0.41	0.38	0.37	0.32
Age 30-34 at birth	0.30	0.30	0.32	0.35
Age 35 or more at birth	0.09	0.12	0.14	0.18
Immigrant	0.08	0.11	0.19	0.21
Father				
Less than high school	0.19	0.14	0.14	0.10
High school diploma	0.17	0.18	0.19	0.21
Some post-secondary	0.22	0.16	0.24	0.13
Post-secondary degree	0.43	0.52	0.44	0.56
Age 14-24 at birth	0.08	0.09	0.07	0.07
Age 25-29 at birth	0.32	0.29	0.27	0.24
Age 30-34 at birth	0.39	0.36	0.38	0.37
Age 35 or more at birth	0.21	0.26	0.27	0.32
Immigrant	0.09	0.13	0.18	0.20
Family				
Rural Region	0.18	0.15	0.16	0.12
Region $<$ 30K	0.12	0.12	0.15	0.16
Region 30-99,999K	0.09	0.09	0.07	0.09
Region 100-499K.	0.08	0.06	0.22	0.19
Region $>$ 499K	0.53	0.58	0.40	0.44
None older sibling	0.46	0.46	0.40	0.43
One older sibling	0.37	0.38	0.37	0.39
At least two older siblings	0.17	0.16	0.22	0.19
None younger sibling	0.62	0.71	0.61	0.69
One younger sibling	0.30	0.25	0.31	0.26
At least two younger siblings	0.07	0.04	0.08	0.05
Same age siblings	0.03	0.02	0.02	0.03
N	5,060	9,745	21,896	52,340

Notes : This table dipslays the weighted (sample weights from Statistics Canada) summary statistics for children, mothers,fathers, and families. The statistics are presented by region : Quebec and the Rest of Canada, for the pre-reform and post-reform periods as described in Table 1. Wave 3 of the NLSCY is excluded for children 0-7 years old. All statistics appearing in the table are percentages.

TABLE A.4 – Youth outcomes index component (CCHS)

Youth outcome Index	
Overall health	In general, would you say your health is :
(Range : 1-5)	1) excellent
	2) very good
	3) good
	4) fair
	5) poor
Mental health	In general, would you say your mental health is :
(Range : 1-5)	1) excellent
	2) very good
	3) good
	4) fair
	5) poor
Belonging	How would you describe your sense of belonging to your local community?
(Range : 1-4)	1) very strong
	2) somewhat strong
	3) somewhat weak
	4) very weak
Life satisfaction	How satisfied are you with your life in general :
(Range : 1-5)	1) very satisfied
	2) satisfied
	3) neither satisfied nor dissatisfied
	4) dissatisfied
	5) very dissatisfied
Stress	Thinking about the amount of stress in your life, would you say that most days are :
(Range : 1-5)	1) not at all stressful
	2) not very stressful
	3) a bit stressful
	4) quite a bit stressful
	5) extremely stressful

TABLE A.5 – Summary statistics of youths aged 12 to 19 years old (CCHS)

	Quebec		Rest of Canada	
Variable	Pre-Policy	Post-Policy	Pre-Policy	Post-Policy
Youth is a boy	0.51	0.51	0.51	0.51
Highest level of education in household :				
Less than high school	0.07	0.03	0.05	0.03
High school diploma	0.10	0.08	0.14	0.12
Some post-secondary	0.09	0.07	0.08	0.05
Post-secondary degree	0.74	0.82	0.73	0.80
Number pers. 0-5 years in household	0.06	0.08	0.07	0.09
Number pers. 6-11 years in household	0.25	0.30	0.25	0.29
Youth is immigrant	0.06	0.08	0.12	0.13
N	10,337	5,852	43,648	26,369

Notes : The weighted statistics are presented by region : Quebec and the Rest of Canada, for the pre-reform and post-reform periods as described in Table 1. All statistics appearing in the table are percentages.

TABLE A.6 – Statistical tests and estimated effects of the policy on children 0 to 5 years old (not in school)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	Test β_4 =...=β_8	Test β_4 =...=β_8=0	Test β_7 = β_8=0	Test β_{456} = β_{78}	One-tail tests	N
Health												
Child in	**-0.038****	-0.036*	**-0.049****	**-0.060****	-0.013	-0.037*	0.004	0.002	0.190	0.105	0.052	50,063
excellent health (+)	**(0.017)**	(0.020)	**(0.022)**	**(0.026)**	(0.023)	(0.021)						
Child has	0.013	0.012	0.004	0.018	-0.001	**0.028***	0.101	0.133	0.035	0.802	0.599	50,065
been injured (-)	(0.013)	(0.013)	(0.020)	(0.016)	(0.015)	**(0.016)**						
Child had	0.004	0.005	0.004	-0.016*	-0.001	**0.024****	0.000	0.001	0.024	0.100	0.950	50,038
asthma attack (-)	(0.007)	(0.008)	(0.010)	(0.009)	(0.010)	**(0.010)**						
Never had a nose/	**-0.141*****	**-0.115*****	**-0.189*****	**-0.147*****	**-0.138*****	**-0.125*****	0.033	0.000	0.000	0.425	0.212	40,450
throat Infections (+)	**(0.024)**	**(0.024)**	**(0.032)**	**(0.034)**	**(0.034)**	**(0.032)**						
Never had an ear	**-0.063****	-0.040	**-0.089*****	**-0.090****	-0.042	**-0.060***	0.174	0.025	0.207	0.305	0.152	40,429
Infection (+)	**(0.028)**	(0.032)	**(0.030)**	**(0.036)**	(0.036)	**(0.034)**						
Motor and Social Development												
MSD Score (+)	-0.092	**-0.176****	-0.065	-0.173	-0.139	0.055	0.106	0.105	0.280	0.109	0.055	38,569
	(0.063)	**(0.082)**	(0.080)	(0.120)	(0.099)	(0.088)						
Behavioral scores of 2 and 3-year-olds												
Hyperactivity-	**0.089****	0.022	**0.171*****	**0.159***	0.094	0.029	0.004	0.002	0.513	0.347	0.174	20,430
Innatention (-)	**(0.045)**	(0.042)	**(0.048)**	**(0.087)**	(0.082)	(0.053)						
Emotional disorder-	**0.132****	0.084	0.095	**0.270*****	0.107*	0.113*	0.046	0.010	0.131	0.426	0.213	20,506
Anxiety (-)	**(0.053)**	(0.060)	(0.062)	**(0.070)**	(0.063)	(0.060)						
Physical Aggression (-)	**0.216*****	0.157**	**0.187****	**0.287*****	**0.277*****	0.185*	0.048	0.007	0.003	0.744	0.628	20,346
	(0.076)	(0.075)	**(0.083)**	**(0.096)**	**(0.081)**	(0.094)						
Separation- Anxiety (-)	0.032	0.026	0.012	**0.112****	-0.010	0.024	0.115	0.085	0.900	0.400	0.200	20,530
	(0.045)	(0.052)	(0.074)	**(0.046)**	(0.065)	(0.067)						
Behavioral scores of 4 and 5-year-olds												
Hyperactivity-	**0.245*****	**0.240*****	**0.290*****	**0.370*****	**0.201*****	0.120*	0.002	0.000	0.013	0.018	0.009	9,525
Innatention (-)	**(0.055)**	**(0.075)**	**(0.054)**	**(0.066)**	**(0.068)**	(0.066)						
Emotional disorder-	**0.378*****	**0.362*****	**0.453*****	**0.431*****	**0.385*****	**0.251*****	0.005	0.000	0.000	0.079	0.040	9,543
Anxiety (-)	**(0.071)**	**(0.071)**	**(0.071)**	**(0.073)**	**(0.079)**	**(0.085)**						
Physical Aggression (-)	**0.171****	**0.235*****	**0.221****	**0.241*****	**0.182****	-0.045	0.000	0.000	0.001	0.034	0.017	9,533
	(0.075)	**(0.070)**	**(0.102)**	**(0.070)**	**(0.083)**	(0.075)						
Indirect Aggression (-)	0.123	**0.225****	**0.214****	0.022	0.054	0.059	0.008	0.012	0.807	0.043	0.021	9,331
	(0.094)	**(0.107)**	**(0.102)**	(0.098)	(0.096)	(0.090)						

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. For one-tail tests, we report p-values for test $\beta_{78}>\beta_{456}$ (excellent health; never nose and ear infections; MSD score) and $\beta_{78}<\beta_{456}$ (injuries; asthma and behavior). We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are obtained with children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.7 – Estimated effects of the policy on children 0 to 5 years old (not in school) (Wave 3 included : pre-reform)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N
Health							
Child in	**-0.035****	**-0.033****	**-0.046****	**-0.058****	-0.010	-0.034*	60,758
excellent health (+)	**(0.014)**	**(0.016)**	**(0.020)**	**(0.025)**	(0.021)	(0.019)	
Child has	0.011	0.010	0.001	0.016	-0.003	0.026*	60,760
been injured (-)	(0.010)	(0.011)	(0.017)	(0.014)	(0.012)	(0.014)	
Child had	-0.001	0.000	-0.001	**-0.021****	-0.005	**0.020****	60,732
asthma attack (-)	(0.006)	(0.008)	(0.009)	**(0.009)**	(0.009)	**(0.009)**	
Never had a nose/	**-0.117*****	**-0.092*****	**-0.166*****	**-0.123*****	**-0.114*****	**-0.101*****	49,137
throat Infections (+)	**(0.020)**	**(0.021)**	**(0.031)**	**(0.034)**	**(0.030)**	**(0.032)**	
Never had an ear	**-0.053*****	-0.030	**-0.079*****	**-0.080*****	-0.032	-0.049*	49,114
Infection (+)	**(0.020)**	(0.025)	**(0.024)**	**(0.030)**	(0.029)	(0.030)	
Motor and Social Development							
MSD Score (+)	-0.055	**-0.136***	-0.027	-0.135	-0.102	0.093	47,013
	(0.054)	**(0.077)**	(0.069)	(0.118)	(0.099)	(0.086)	
Behavioral scores of 2 and 3-year-olds							
Hyperactivity-	**0.110*****	0.044	**0.191*****	**0.179****	0.114	0.051	22,981
Innatention (-)	**(0.042)**	(0.041)	**(0.045)**	**(0.087)**	(0.084)	(0.049)	
Emotional disorder-	**0.093****	0.046	0.053	**0.231*****	0.068	0.074	23,057
Anxiety (-)	**(0.043)**	(0.051)	(0.052)	**(0.063)**	(0.053)	(0.051)	
Physical Aggression (-)	**0.192*****	**0.132****	**0.161****	**0.261*****	**0.254*****	0.163**	22,894
	(0.059)	**(0.059)**	**(0.072)**	**(0.077)**	**(0.070)**	(0.074)	
Separation- Anxiety (-)	0.053	0.047	0.031	**0.132*****	0.011	0.048	23,100
	(0.040)	(0.049)	(0.068)	**(0.042)**	(0.060)	(0.066)	
Behavioral scores of 4 and 5-year-olds							
Hyperactivity-	**0.250*****	**0.241*****	**0.300*****	**0.374*****	**0.205*****	0.129*	11,509
Innatention (-)	**(0.050)**	**(0.068)**	**(0.059)**	**(0.060)**	**(0.059)**	(0.067)	
Emotional disorder-	**0.283*****	**0.264*****	**0.360*****	**0.337*****	**0.290*****	0.157*	11,533
Anxiety (-)	**(0.074)**	**(0.075)**	**(0.072)**	**(0.078)**	**(0.081)**	(0.088)	
Physical Aggression (-)	**0.173*****	**0.230*****	**0.229****	**0.241*****	**0.186*****	-0.040	11,528
	(0.058)	**(0.052)**	**(0.094)**	**(0.052)**	**(0.065)**	(0.056)	
Indirect Aggression (-)	0.083	**0.179****	**0.175****	-0.007	0.012	0.015	11,251
	(0.074)	**(0.091)**	**(0.085)**	(0.078)	(0.077)	(0.071)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. Wave 3 is included as pre-reform period. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.8 – Estimated effects of the policy on children 0–5 years old (not in school) (Wave 3 included : post-reform)

Dependent Variable	β_{4-8} (1998-2009)	β_3^P (1998-99)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N
Health								
Child in	**-0.034****	-0.012	-0.037*	**-0.050****	**-0.061****	-0.013	-0.038*	60,758
excellent health (+)	**(0.017)**	(0.027)	(0.019)	**(0.022)**	**(0.027)**	(0.023)	(0.021)	
Child has	0.011	0.006	0.012	0.003	0.018	-0.001	0.028*	60,760
been injured (-)	(0.013)	(0.018)	(0.013)	(0.019)	(0.016)	(0.015)	(0.016)	
Child had	0.006	0.015	0.005	0.004	-0.016*	-0.001	**0.024****	60,732
asthma attack (-)	(0.007)	(0.009)	(0.008)	(0.010)	(0.010)	(0.009)	**(0.009)**	
Never had a nose/	**-0.129*****	-0.076**	**-0.116*****	**-0.190*****	**-0.147*****	**-0.138*****	**-0.125*****	49,137
throat Infections (+)	**(0.024)**	(0.038)	**(0.024)**	**(0.033)**	**(0.036)**	**(0.032)**	**(0.034)**	
Never had an ear	**-0.058****	-0.034	-0.041	**-0.090*****	**-0.091*****	-0.043	-0.060*	49,114
Infection (+)	**(0.027)**	(0.041)	(0.030)	**(0.030)**	**(0.035)**	(0.034)	(0.035)	
Motor and Social Development								
MSD Score (+)	**-0.099***	-0.122	**-0.176****	-0.066	-0.174	-0.142	0.053	47,013
	(0.058)	(0.077)	**(0.083)**	(0.074)	(0.122)	(0.103)	(0.091)	
Behavioral scores of 2 and 3-year-olds								
Hyperactivity-	0.062	-0.059	0.024	**0.171*****	**0.160***	0.095	0.032	22,981
Innatention (-)	(0.044)	(0.052)	(0.045)	**(0.049)**	**(0.090)**	(0.086)	(0.053)	
Emotional disorder-	**0.130****	0.118*	0.086	0.092	**0.271*****	0.108*	0.114*	23,057
Anxiety (-)	**(0.052)**	(0.060)	(0.060)	(0.061)	**(0.071)**	(0.062)	(0.060)	
Physical Aggression (-)	**0.187****	0.068	0.155*	**0.184****	**0.284*****	**0.278*****	0.186**	22,894
	(0.080)	(0.088)	(0.080)	**(0.091)**	**(0.095)**	**(0.089)**	(0.092)	
Separation- Anxiety (-)	0.017	-0.058	0.027	0.011	**0.112****	-0.008	0.028	23,100
	(0.044)	(0.067)	(0.052)	(0.071)	**(0.046)**	(0.063)	(0.068)	
Behavioral scores of 4 and 5-year-olds								
Hyperactivity-	**0.194*****	-0.015	**0.236*****	**0.295*****	**0.369*****	**0.200*****	0.124*	11,509
Innatention (-)	**(0.057)**	(0.085)	**(0.070)**	**(0.062)**	**(0.063)**	**(0.063)**	(0.070)	
Emotional disorder-	**0.372*****	**0.312*****	**0.367*****	**0.463*****	**0.440*****	**0.393*****	**0.260*****	11,533
Anxiety (-)	**(0.072)**	**(0.089)**	**(0.074)**	**(0.071)**	**(0.077)**	**(0.081)**	**(0.088)**	
Physical Aggression (-)	**0.140***	0.002	**0.231*****	**0.230****	**0.242*****	**0.187****	-0.039	11,528
	(0.075)	(0.073)	**(0.072)**	**(0.106)**	**(0.072)**	**(0.081)**	(0.075)	
Indirect Aggression (-)	0.125	0.127	**0.221****	**0.217****	0.035	0.054	0.057	11,251
	(0.090)	(0.094)	**(0.105)**	**(0.102)**	(0.096)	(0.095)	(0.089)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. Wave 3 is included as post-reform period. The table also shows the average effect for the full post-treatment period (β_{3-8}) and the effects by wave (β_3^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.9 – Estimated effects of the policy on children 0–5 years old (not in school) (Wave 3 included : post-reform by age)

Dependent Variable	β_{4-8} (1998-2009)	β_3^P (1998-99)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N
Health								
Child in	**-0.040*** **	**-0.037** **	**-0.038** **	**-0.052** **	**-0.063** **	-0.015	**-0.039***	60,758
excellent health (+)	**(0.015)**	**(0.017)**	**(0.017)**	**(0.021)**	**(0.026)**	(0.022)	**(0.020)**	
Child has	0.016	**0.027** **	0.014	0.005	0.020	0.001	**0.030** **	60,760
been injured (-)	(0.010)	**(0.011)**	(0.011)	(0.018)	(0.014)	(0.013)	**(0.015)**	
Child had	0.006	**0.026*** **	0.004	0.003	**-0.017***	-0.002	**0.023*** **	60,732
asthma attack (-)	(0.006)	**(0.009)**	(0.008)	(0.010)	**(0.009)**	(0.009)	**(0.009)**	
Never had a nose/	**-0.121*** **	**-0.083*** **	**-0.099*** **	**-0.173*** **	**-0.130*** **	**-0.121*** **	**-0.108*** **	49,137
throat Infections (+)	**(0.020)**	**(0.020)**	**(0.020)**	**(0.031)**	**(0.034)**	**(0.030)**	**(0.031)**	
Never had an ear	**-0.057*** **	**-0.057** **	-0.035	**-0.084*** **	**-0.084*** **	-0.037	**-0.054***	49,114
Infection (+)	**(0.021)**	**(0.024)**	(0.026)	**(0.025)**	**(0.031)**	(0.030)	**(0.030)**	
Motor and Social Development								
MSD Score (+)	-0.077	**-0.166** **	**-0.150** **	-0.041	-0.149	-0.117	0.078	47,013
	(0.047)	**(0.078)**	**(0.074)**	(0.067)	(0.117)	(0.097)	(0.084)	
Behavioral scores of 2 and 3-year-olds								
Hyperactivity-	**0.077***	-0.061	0.033	**0.180*** **	**0.169***	0.104	0.041	22,981
Innatention (-)	**(0.040)**	(0.044)	(0.041)	**(0.046)**	**(0.087)**	(0.084)	(0.050)	
Emotional disorder-	**0.106** **	0.090	0.062	0.068	**0.246*** **	0.084	0.090	23,057
Anxiety (-)	**(0.046)**	(0.076)	(0.054)	(0.057)	**(0.066)**	(0.057)	(0.055)	
Physical Aggression (-)	**0.156** **	-0.032	0.127*	**0.155***	**0.255*** **	**0.249*** **	0.158*	22,894
	(0.071)	(0.071)	(0.067)	**(0.079)**	**(0.084)**	**(0.077)**	(0.081)	
Separation- Anxiety (-)	0.054	0.029	0.052	0.036	**0.137*** **	0.016	0.053	23,100
	(0.040)	(0.050)	(0.050)	(0.070)	**(0.044)**	(0.062)	(0.067)	
Behavioral scores of 4 and 5-year-olds								
Hyperactivity-	**0.194*** **	-0.015	**0.236*** **	**0.295*** **	**0.369*** **	**0.200*** **	0.124*	11,509
Innatention (-)	**(0.057)**	(0.085)	**(0.070)**	**(0.062)**	**(0.063)**	**(0.063)**	(0.070)	
Emotional disorder-	**0.372*** **	**0.312*** **	**0.367*** **	**0.463*** **	**0.440*** **	**0.393*** **	**0.260*** **	11,533
Anxiety (-)	**(0.072)**	**(0.089)**	**(0.074)**	**(0.071)**	**(0.077)**	**(0.081)**	**(0.088)**	
Physical Aggression (-)	**0.140***	0.002	**0.231*** **	**0.230** **	**0.242*** **	**0.187** **	-0.039	11,528
	(0.075)	(0.073)	**(0.072)**	**(0.106)**	**(0.072)**	**(0.081)**	(0.075)	
Indirect aggression (-)	0.125	0.127	**0.221** **	**0.217** **	0.035	0.054	0.057	11,251
	(0.090)	(0.094)	**(0.105)**	**(0.102)**	(0.096)	(0.095)	(0.089)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. Wave 3 is included as post-reform period for 3–5 years old and pre-reform period for 0–2 years old. The table also shows the average effect for the full post-treatment period (β_{3-8}) and the effects by wave (β_3^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.10 – Estimated Effects of the Policy on Children 5 to 7 years old (in school) (Wave 3 : pre-, post- and post-reform by age)

	Wave 3 : pre-reform					Wave 3 : post-reform					
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N	β_{3-8} (1998-2009)	β_3^P (1998-99)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N
Health											
Child in	-0.005	-0.010	0.008	-0.012	23,067	-0.047*	**-0.085****	-0.038	-0.021	-0.041	23,067
excellent health (+)	(0.024)	(0.027)	(0.029)	(0.026)		(0.026)	**(0.037)**	(0.029)	(0.030)	(0.027)	
Child had	0.010	0.022**	-0.001	0.004	23,058	0.012	0.011	0.026*	0.002	0.008	23,058
asthma attack (-)	(0.009)	(0.011)	(0.011)	(0.015)		(0.011)	(0.013)	(0.013)	(0.012)	(0.016)	
Behavioral Scores											
Hyperactivity-	0.059	-0.053	0.047	**0.223****	22,892	0.094	0.099	-0.020	0.080	**0.256*****	22,892
Innatention (-)	(0.082)	(0.085)	(0.100)	**(0.097)**		(0.070)	(0.094)	(0.083)	(0.097)	**(0.094)**	
Emotional disorder-	**0.184*****	0.128*	0.239*	**0.203*****	22,947	0.159*	0.049	0.144*	0.255*	**0.219*****	22,947
Anxiety (-)	**(0.069)**	(0.065)	(0.125)	**(0.066)**		(0.084)	(0.083)	(0.085)	(0.135)	**(0.084)**	
Physical aggression (-)	0.086	0.105	0.102*	0.045	22,914	0.100	0.071	0.129*	0.126*	0.069	22,914
	(0.054)	(0.067)	(0.056)	(0.061)		(0.064)	(0.079)	(0.077)	(0.067)	(0.072)	
Separation-Anxiety (-)	0.071	0.004	0.130	0.103	22,006	0.090	0.075	0.029	0.154	0.128	22,006
	(0.108)	(0.119)	(0.147)	(0.137)		(0.085)	(0.107)	(0.112)	(0.146)	(0.137)	

	Wave 3 : post-reform by age					
Dependent Variable	β_{3-8} (1998-2009)	β_3^P (1998-99)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N
Health						
Child in	-0.015	-0.048	-0.015	0.003	-0.017	23,067
excellent health (+)	(0.028)	(0.037)	(0.030)	(0.031)	(0.028)	
Child had	0.016	**0.034*****	**0.025****	0.002	0.008	23,058
asthma attack (-)	(0.010)	**(0.008)**	**(0.012)**	(0.010)	(0.015)	
Behavioral Scores						
Hyperactivity-	0.021	-0.141	-0.066	0.033	**0.209****	22,892
Innatention (-)	(0.089)	(0.088)	(0.090)	(0.104)	**(0.100)**	
Emotional disorder-	**0.179****	0.087	0.137*	0.247*	**0.211*****	22,947
Anxiety (-)	**(0.072)**	(0.065)	(0.072)	(0.127)	**(0.071)**	
Physical aggression (-)	0.065	-0.046	0.101	0.097	0.041	22,914
	(0.058)	(0.064)	(0.070)	(0.060)	(0.064)	
Separation-Anxiety (-)	0.019	-0.202**	-0.015	0.110	0.083	22,006
	(0.106)	(0.101)	(0.117)	(0.151)	(0.140)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. Wave 3 is included as pre, post-reform for all and post-reform for 5-7 years old, respectively. The table also shows the average effect for the full post-treatment period (β_{3-8}) and the effects by wave (β_3^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 5-7 in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.11 – Estimated effects of the policy on children 0 to 5 years old (not in school) (Trend included)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	N
Health							
Child in	**-0.039****	**-0.046****	-0.034*	**-0.064****	-0.021	**-0.032***	50,063
excellent health (+)	**(0.017)**	**(0.020)**	(0.020)	**(0.025)**	(0.023)	**(0.019)**	
Child has	0.013	0.011	0.012	0.009	-0.004	**0.033****	50,065
been injured (-)	(0.013)	(0.014)	(0.019)	(0.015)	(0.014)	**(0.016)**	
Child had	0.004	0.004	0.006	-0.012	-0.004	**0.024****	50,038
asthma attack (-)	(0.007)	(0.008)	(0.010)	(0.009)	(0.009)	**(0.009)**	
Never had a nose/	**-0.140*****	**-0.120*****	**-0.176*****	**-0.152*****	**-0.121*****	**-0.141*****	40,450
throat Infections (+)	**(0.025)**	**(0.024)**	**(0.032)**	**(0.032)**	**(0.033)**	**(0.033)**	
Never had an ear	**-0.064****	**-0.056***	**-0.091*****	**-0.072****	-0.030	**-0.074****	40,429
Infection (+)	**(0.027)**	**(0.029)**	**(0.027)**	**(0.031)**	(0.035)	**(0.032)**	
Motor and Social Development							
MSD Score (+)	-0.089	**-0.164***	-0.020	-0.177	**-0.197****	0.083	38,569
	(0.066)	**(0.086)**	(0.079)	(0.120)	**(0.098)**	(0.087)	
Behavioral scores of 2 and 3-year-olds							
Hyperactivity-	**0.088***	0.027	**0.183*****	0.113	0.125	0.026	20,430
Innatention (-)	**(0.046)**	(0.040)	**(0.044)**	(0.083)	(0.081)	(0.045)	
Emotional disorder-	**0.132****	0.029	**0.237*****	**0.210*****	0.077	0.132**	20,506
Anxiety (-)	**(0.057)**	(0.063)	**(0.063)**	**(0.064)**	(0.054)	(0.060)	
Physical aggression (-)	**0.216*****	0.107	**0.302*****	**0.238****	**0.282*****	0.182*	20,346
	(0.078)	(0.075)	**(0.078)**	**(0.094)**	**(0.080)**	(0.094)	
Separation- Anxiety (-)	0.034	0.012	0.084	0.076*	0.004	0.009	20,530
	(0.046)	(0.051)	(0.063)	(0.043)	(0.062)	(0.064)	
Behavioral scores of 4 and 5-year-olds							
Hyperactivity-	**0.235*****	**0.240****	**0.233*****	**0.367*****	**0.197****	0.146	9,525
Innatention (-)	**(0.087)**	**(0.095)**	**(0.089)**	**(0.083)**	**(0.093)**	(0.095)	
Emotional disorder-	**0.374*****	**0.331*****	**0.475*****	**0.427*****	**0.331*****	**0.296*****	9,543
Anxiety (-)	**(0.097)**	**(0.095)**	**(0.094)**	**(0.096)**	**(0.099)**	**(0.105)**	
Physical aggression (-)	**0.170****	**0.182****	**0.277*****	**0.278*****	0.105	-0.013	9,533
	(0.078)	**(0.072)**	**(0.097)**	**(0.072)**	(0.086)	(0.084)	
Indirect aggression (-)	0.126	**0.224****	**0.201****	0.070	0.092	0.004	9,331
	(0.093)	**(0.102)**	**(0.090)**	(0.092)	(0.093)	(0.095)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 0-5 not in school and in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.12 – Estimated effects of the policy on children 5–9 years old (in school) (Trend included)

	Children 5 to 7 in school					Children 8 to 9			
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	N	β_{5-8} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	N
Health									
Child in excellent health (+)	-0.035 (0.027)	-0.044 (0.030)	-0.025 (0.027)	-0.033 (0.028)	17,311	-0.036 (0.042)	-0.036 (0.065)	-0.037 (0.037)	11,556
Child had asthma attack (-)	0.013 (0.012)	0.026* (0.013)	0.004 (0.012)	0.005 (0.017)	17,302	0.021 (0.013)	0.011 (0.012)	**0.032**** **(0.015)**	11,556
Behavioral Scores									
Hyperactivity-Innatention (-)	0.089 (0.081)	-0.025 (0.083)	0.117 (0.098)	**0.217**** **(0.092)**	17,188	0.075 (0.046)	**0.111**** **(0.053)**	0.033 (0.035)	11,464
Emotional disorder-Anxiety (-)	0.194** (0.092)	0.128 (0.085)	**0.301**** **(0.136)**	**0.173**** **(0.087)**	17,213	**0.208***** **(0.066)**	**0.228***** **(0.050)**	0.183* (0.102)	11,467
Physical aggression (-)	0.113* (0.065)	0.129* (0.075)	**0.173***** **(0.065)**	0.029 (0.068)	17,187	0.107* (0.057)	**0.124*** **(0.063)**	0.088 (0.076)	11,451
Separation-Anxiety (-)	0.100 (0.105)	0.041 (0.113)	0.161 (0.144)	0.118 (0.136)	16,536	0.090 (0.069)	0.046 (0.067)	0.143* (0.079)	10,857

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1 and Table A.1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children 5-7 in school and 8-9 in two-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1%; ** : significant at 5%; * : significant at 10%

TABLE A.13 – Estimated effects of the policy on children 0-5 (not in school) (one parent families)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	β_{78} vs β_{4-8}	N
Health								
Child in	0.029	-0.004	-0.098	**0.170****	0.039	0.029	0.006	7,875
excellent health (+)	(0.049)	(0.059)	(0.068)	**(0.070)**	(0.089)	(0.053)	(0.050)	
Child has	0.005	0.020	0.077**	0.001	-0.050*	-0.021	**-0.064*****	7,876
been injured (-)	(0.022)	(0.024)	(0.036)	(0.031)	(0.029)	(0.028)	**(0.025)**	
Child had	0.023	0.038	0.004	**0.065***	-0.010	0.007	**-0.038***	7,865
asthma attack (-)	(0.020)	(0.025)	(0.036)	**(0.034)**	(0.023)	(0.022)	**(0.021)**	
Never had a nose/	**-0.187*****	**-0.186*****	-0.051	-0.065	**-0.297*****	**-0.306*****	**-0.193*****	6,112
throat Infections (+)	**(0.059)**	**(0.069)**	(0.082)	(0.094)	**(0.087)**	**(0.065)**	**(0.052)**	
Never had an ear	**-0.145*****	-0.119*	0.005	**-0.120****	**-0.222*****	**-0.243*****	**-0.146*****	6,108
Infection (+)	**(0.046)**	(0.065)	(0.069)	**(0.048)**	**(0.060)**	**(0.045)**	**(0.050)**	
Motor and Social Development								
MSD Score (+)	0.145	-0.011	**0.290***	**0.265****	0.076	0.138	-0.066	5,745
	(0.130)	(0.153)	**(0.169)**	**(0.131)**	(0.149)	(0.162)	(0.103)	
Behavioral scores of 2 and 3-year-olds								
Hyperactivity-	**0.252****	0.270	0.237**	**0.313*****	0.229	0.202*	-0.060	3,395
Innatention (-)	**(0.107)**	(0.209)	(0.116)	**(0.113)**	(0.197)	(0.112)	(0.135)	
Emotional disorder-	**0.326***	0.351	0.152	**0.446****	0.502*	0.089	-0.019	3,396
Anxiety (-)	**(0.192)**	(0.263)	(0.196)	**(0.181)**	(0.266)	(0.321)	(0.226)	
Physical aggression (-)	**0.275****	0.120	0.101	**0.449*****	**0.591****	0.051	0.118	3,366
	(0.139)	(0.187)	(0.184)	**(0.111)**	**(0.245)**	(0.261)	(0.250)	
Separation- Anxiety (-)	**0.202***	0.066	0.242*	**0.429*****	**0.314***	-0.032	-0.077	3,417
	(0.102)	(0.131)	(0.131)	**(0.102)**	**(0.174)**	(0.105)	(0.137)	
Behavioral scores of 4 and 5-year-olds								
Hyperactivity-	0.343*	0.082	0.212	**0.709*****	0.035	**0.658*****	0.121	1,743
Innatention (-)	(0.175)	(0.153)	(0.203)	**(0.191)**	(0.208)	**(0.205)**	(0.197)	
Emotional disorder-	0.206*	**0.357*****	0.172	**0.313****	-0.129	0.135	-0.250**	1,741
Anxiety (-)	(0.115)	**(0.127)**	(0.165)	**(0.140)**	(0.153)	(0.159)	(0.126)	
Physical aggression (-)	0.110	0.224	-0.065	0.071	-0.168	0.350	0.066	1,741
	(0.148)	(0.176)	(0.181)	(0.152)	(0.153)	(0.223)	(0.196)	
Indirect aggression (-)	**0.372****	**0.472****	0.118	**0.558*****	0.257	0.368*	-0.063	1,692
	(0.146)	**(0.184)**	(0.207)	**(0.197)**	(0.231)	(0.212)	(0.174)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children aged 0-5 not in school and in one-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.14 – Estimated effects of the policy on children 0 to 5 years old (not in school) (all family types)

Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_5^{FE} (2002-03)	β_6^{FE} (2004-05)	β_7^{FL} (2006-07)	β_8^{FL} (2008-09)	β_{78} vs β_{4-8}	N
Health								
Child in	**-0.030***	-0.031*	**-0.065*****	-0.025	-0.007	-0.026	0.023*	60,341
excellent health (+)	**(0.016)**	(0.018)	**(0.021)**	(0.023)	(0.021)	(0.019)	(0.013)	
Child has	0.010	0.011	0.013	0.016	-0.010	0.018	-0.009	60,344
been injured (-)	(0.013)	(0.013)	(0.018)	(0.014)	(0.014)	(0.016)	(0.009)	
Child had	0.007	0.009	0.006	-0.006	0.003	**0.021****	0.009	60,301
asthma attack (-)	(0.006)	(0.007)	(0.009)	(0.008)	(0.007)	**(0.009)**	(0.006)	
Never had a nose/	**-0.147*****	**-0.122*****	**-0.176*****	**-0.137*****	**-0.154*****	**-0.146*****	-0.007	48,275
throat Infections (+)	**(0.019)**	**(0.021)**	**(0.025)**	**(0.028)**	**(0.029)**	**(0.028)**	(0.018)	
Never had an ear	**-0.068****	-0.047	**-0.074****	**-0.094*****	-0.053	**-0.073****	0.008	48,247
Infection (+)	**(0.026)**	(0.029)	**(0.029)**	**(0.032)**	(0.033)	**(0.031)**	(0.018)	
Motor and Social Development								
MSD Score (+)	-0.063	**-0.148***	-0.028	-0.115	-0.122	0.076	0.078	45,921
	(0.054)	**(0.079)**	(0.072)	(0.099)	(0.088)	(0.075)	(0.057)	
Behavioral scores of 2 and 3-year-olds								
Hyperactivity-	**0.123*****	0.056	**0.199*****	**0.200****	0.118	0.071	-0.053	24,757
Innatention (-)	**(0.043)**	(0.035)	**(0.047)**	**(0.089)**	(0.110)	(0.050)	(0.068)	
Emotional disorder-	**0.176*****	**0.132****	**0.140*****	**0.329*****	**0.163****	**0.129*****	-0.054	24,837
Anxiety (-)	**(0.044)**	**(0.061)**	**(0.047)**	**(0.060)**	**(0.077)**	**(0.043)**	(0.054)	
Physical aggression (-)	**0.229*****	**0.148****	**0.196*****	**0.318*****	**0.319*****	0.181*	0.028	24,645
	(0.064)	**(0.061)**	**(0.074)**	**(0.068)**	**(0.068)**	(0.097)	(0.062)	
Separation- Anxiety (-)	**0.063***	0.040	0.057	**0.159*****	0.044	0.027	-0.049	24,883
	(0.038)	(0.049)	(0.062)	**(0.037)**	(0.073)	(0.052)	(0.049)	
Behavioral scores of 4 and 5-year-olds								
Hyperactivity-	**0.225*****	**0.174*****	**0.248*****	**0.379*****	**0.163*****	**0.172*****	**-0.092****	11,944
Innatention (-)	**(0.044)**	**(0.063)**	**(0.048)**	**(0.049)**	**(0.060)**	**(0.047)**	**(0.046)**	
Emotional disorder-	**0.328*****	**0.351*****	**0.376*****	**0.367*****	**0.278*****	**0.257*****	**-0.098*****	11,965
Anxiety (-)	**(0.059)**	**(0.057)**	**(0.064)**	**(0.059)**	**(0.071)**	**(0.061)**	**(0.030)**	
Physical aggression (-)	**0.143****	**0.241*****	**0.151***	**0.144****	0.081	0.071	**-0.106****	11,957
	(0.064)	**(0.063)**	**(0.083)**	**(0.070)**	(0.071)	(0.089)	**(0.053)**	
Indirect aggression (-)	**0.199****	**0.313*****	**0.227****	0.129	0.107	**0.184***	-0.083	11,681
	(0.083)	**(0.106)**	**(0.091)**	(0.094)	(0.096)	**(0.095)**	(0.069)	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FL}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial.Estimates are for children aged 0-5 not in school and in all family types (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.15 – Estimated effects of the policy on children 5 to 9 years old (in school) (one-parent families)

	Children 5 to 7							Children 8 to 9					
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	Test β_4 $=\ldots=\beta_8$	Test β_4 $=\ldots=\beta_8=0$	N	β_{5-7} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	Test β_5 $=\beta_7$	Test β_5 $=\beta_7=0$	N
Health													
Child in	-0.011	0.001	-0.030	-0.007	0.923	0.977	3,437	**0.107***	0.088	**0.126****	0.623	0.073	2,406
excellent health (+)	(0.066)	(0.085)	(0.079)	(0.074)				**(0.063)**	(0.089)	**(0.055)**			
Child had	-0.024	0.007	-0.061	-0.031	0.058	0.070	3,434	0.006	0.041	-0.028	0.003	0.008	2,406
asthma attack (-)	(0.043)	(0.049)	(0.042)	(0.045)				(0.029)	(0.031)	(0.025)			
Behavioral Scores													
Hyperactivity-	0.277*	0.131	**0.388***	**0.378****	0.034	0.023	3,395	**0.356*****	**0.416*****	**0.297*****	0.446	0.005	2,382
Innatention (-)	(0.163)	(0.167)	**(0.197)**	**(0.178)**				**(0.110)**	**(0.155)**	**(0.107)**			
Emotional disorder-	0.313**	0.098	**0.533*****	0.390**	0.008	0.002	3,398	**0.317****	0.120	**0.507*****	0.022	0.000	2,384
Anxiety (-)	(0.153)	(0.160)	**(0.176)**	(0.173)				**(0.131)**	(0.147)	**(0.123)**			
Physical aggression (-)	0.248*	0.109	**0.428****	**0.249***	0.229	0.082	3,397	**0.283****	0.273*	**0.293****	0.886	0.042	2,386
	(0.127)	(0.152)	**(0.171)**	**(0.128)**				**(0.118)**	(0.153)	**(0.118)**			
Indirect aggression (-)	0.019	-0.072	0.076	0.105	0.430	0.632	3,228	0.123	-0.096	**0.320*****	0.004	0.001	2,212
	(0.128)	(0.144)	(0.145)	(0.149)				(0.154)	(0.172)	**(0.121)**			

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children 5-7 in school and 7-9 in one-parent families (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.16 – Estimated Effects of the policy on children 5 to 9 years old (in school) (all family types)

	Children 5 to 7							Children 8 to 9					
Dependent Variable	β_{4-8} (2000-09)	β_4^P (2000-01)	β_7^{FE} (2006-07)	β_8^{FE} (2008-09)	Test β_4 $=\ldots=\beta_8$	Test β_4 $=\ldots=\beta_8=0$	N	β_{5-7} (2002-07)	β_5^P (2002-03)	β_7^P (2006-07)	Test β_5 $=\beta_7$	Test β_5 $=\beta_7=0$	N
Health													
Child in	-0.024	-0.030	-0.022	-0.019	0.913	0.756	22,385	-0.005	-0.019	0.009	0.606	0.829	15,376
excellent health (+)	(0.024)	(0.027)	(0.032)	(0.028)				(0.033)	(0.055)	(0.022)			
Child had	0.007	0.023*	-0.010	0.004	0.006	0.014	22,372	0.018*	0.015	0.022**	0.457	0.142	15,376
asthma attack (-)	(0.012)	(0.012)	(0.012)	(0.012)				(0.010)	(0.012)	(0.011)			
Behavioral Scores													
Hyperactivity-	**0.149****	0.039	**0.154****	**0.291*****	0.001	0.000	22,209	**0.130*****	**0.151*****	**0.107****	0.372	0.006	15,244
Innatention (-)	**(0.067)**	(0.075)	**(0.067)**	**(0.071)**				**(0.041)**	**(0.051)**	**(0.041)**			
Emotional disorder-	**0.239*****	**0.179****	**0.321*****	**0.232*****	0.073	0.004	22,234	**0.204*****	**0.234*****	**0.173****	0.473	0.001	15,243
Anxiety (-)	**(0.077)**	**(0.073)**	**(0.106)**	**(0.075)**				**(0.060)**	**(0.065)**	**(0.078)**			
Physical aggression (-)	**0.153*****	**0.154****	**0.200*****	**0.100***	0.165	0.029	22,207	**0.138*****	**0.114****	**0.165****	0.480	0.013	15,237
	(0.055)	**(0.070)**	**(0.071)**	**(0.055)**				**(0.047)**	**(0.048)**	**(0.068)**			
Indirect aggression (-)	0.098	0.035	0.146	0.134	0.464	0.488	21,304	0.087	-0.005	**0.185****	0.009	0.020	14,384
	(0.086)	(0.092)	(0.112)	(0.105)				(0.067)	(0.059)	**(0.074)**			

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β_{4-8}) and the effects by wave (β_4^P to β_8^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for children 5-7 in school and 7-9 in all family types (NLSCY data). Standard errors are clustered by province and by birth-year cohort.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%

TABLE A.17 – Estimated effects of the policy on youths 12 to 14 (one-parent families)

Dependent Variable	Doubles Differences						Triples Differences					
	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test β_1 = β_2	Test β_1 = β_2=0	N	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test β_1 = β_2	Test β_1 = β_2=0	N
Health												
Overall health (-)	0.070	0.082	0.060	0.756	0.413	5,836	0.101	0.084	0.114	0.804	0.395	9,978
	(0.056)	(0.063)	(0.067)				(0.083)	(0.118)	(0.084)			
Had asthma attack (-)	**0.030*** **	0.038**	**0.024*** **	0.394	0.009	5,835	0.031	0.023	0.037	0.589	0.504	9,976
	(0.010)	(0.016)	**(0.009)**				(0.027)	(0.023)	(0.034)			
Mental health (-)	-0.054	-0.073	-0.038	0.749	0.489	4,773	-0.013	-0.161	0.109	0.043	0.127	8,292
	(0.061)	(0.063)	(0.094)				(0.092)	(0.118)	(0.098)			
Belonging (-)	0.070	-0.042	**0.163** **	0.008	0.009	5,389	0.248*	0.311**	0.197	0.454	0.120	9,313
	(0.072)	(0.080)	**(0.064)**				(0.124)	(0.155)	(0.136)			
Life satisfaction (-)	-0.081	-0.142**	-0.032	0.210	0.128	4,773	0.047	-0.077	0.150	0.0305	0.076	8,289
	(0.057)	(0.069)	(0.070)				(0.096)	(0.116)	(0.103)			
Behavior												
Drank Alcohol (-)	-0.036	-0.001	**-0.065***	0.138	0.116	5,837	-0.029	0.005	-0.054	0.4767	0.353	9,974
	(0.032)	(0.041)	**(0.033)**				(0.060)	(0.088)	(0.040)			
Doesn't smoke (+)	**0.051*** **	**0.043** **	**0.057** **	0.390	0.031	5,841	0.018	0.006	0.028	0.7568	0.888	9,982
	(0.019)	**(0.018)**	**(0.023)**				(0.055)	(0.070)	(0.059)			

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β) and the effects by wave (β_1^P to β_2^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for youth aged 12-14 in one-parent families (CCHS data). Standard errors are clustered by province and year.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.18 – Estimated effects of the policy on youths 12 to 14 (all family types)

Dependent Variable	Doubles Differences						Triples Differences					
	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test $\beta_1 = \beta_2$	Test $\beta_1 = \beta_2 = 0$	N	β (2007-2014)	β_1^P (2007-2010)	β_2^{FE} (2011-2014)	Test $\beta_1 = \beta_2$	Test $\beta_1 = \beta_2 = 0$	N
Health												
Overall health (-)	**0.111*** **	**0.124*** **	**0.097*** **	0.409	0.017	32,003	0.053	0.098	0.007	0.183	0.397	50,575
	(0.038)	**(0.045)**	**(0.037)**				(0.073)	(0.087)	(0.062)			
Had asthma attack (-)	0.007	0.009	0.005	0.567	0.295	31,985	0.010	0.013	0.006	0.628	0.547	50,549
	(0.005)	(0.007)	(0.004)				(0.009)	(0.013)	(0.008)			
Mental health (-)	0.038	-0.004	0.082*	0.091	0.171	25,515	-0.026	-0.091	0.026	0.069	0.149	41,330
	(0.035)	(0.033)	(0.044)				(0.090)	(0.079)	(0.087)			
Belonging (-)	-0.036	**-0.097** **	0.027	0.000	0.000	29,743	0.048	0.014	0.085*	0.283	0.161	47,498
	(0.046)	**(0.041)**	(0.041)				(0.054)	(0.074)	(0.048)			
Life satisfaction (-)	0.015	-0.019	**0.051** **	0.163	0.030	25,531	-0.053	-0.077	-0.035	0.592	0.506	41,341
	(0.032)	(0.050)	**(0.020)**				(0.056)	(0.080)	(0.038)			
Behavior												
Drank Alcohol (-)	-0.001	0.007	-0.010	0.087	0.217	31,965	-0.024	-0.031	-0.020	0.681	0.722	50,525
	(0.011)	(0.012)	(0.011)				(0.035)	(0.039)	(0.033)			
Doesn't smoke (+)	**0.026** **	**0.023** **	**0.029** **	0.417	0.041	31,998	**0.068** **	**0.080*** **	0.056**	0.2635	0.013	50,567
	(0.010)	**(0.009)**	**(0.012)**				**(0.026)**	**(0.026)**	(0.028)			

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β) and the effects by wave (β_1^P to β_2^{FE}), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for youth aged 12-14 in all family types (CCHS data). Standard errors are clustered by province and year.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.19 – Estimated effects of the policy on youths 15 to 19 (one-parent families and all family types)

	One-parent families				All family types			
	Doubles Differences		Triples Differences		Doubles Differences		Triples Differences	
Dependent Variable	β^P (2011-2014)	N	β^P (2011-2014)	N	β^P (2011-2014)	N	β^P (2011-2014)	N
Health								
Overall health (-)	0.079*	9,196	0.060	12,700	0.066	42,090	-0.027	57,942
	(0.045)		(0.086)		(0.041)		(0.050)	
Had asthma attack (-)	0.001	9,188	0.011	12,692	-0.004	42,063	-0.002	57,908
	(0.013)		(0.031)		(0.007)		(0.012)	
Mental health (-)	-0.091	7,594	0.034	10,494	-0.083	32,825	**-0.137*** **	45,995
	(0.060)		(0.066)		(0.052)		**(0.044)**	
Belonging (-)	-0.175*	8,780	-0.214	12,089	-0.025	40,160	0.014	55,280
	(0.091)		(0.129)		(0.044)		(0.082)	
Life satisfaction (-)	-0.009	7,592	0.110	10,493	-0.018	32,811	-0.095	45,980
	(0.076)		(0.179)		(0.056)		(0.103)	
Stress (-)	0.172**	8,275	0.168	11,778	0.029	36,606	0.072*	52,443
	(0.078)		(0.132)		(0.049)		(0.036)	
Behavior								
Drank Alcohol (-)	0.008	9,180	0.011	12,679	0.031	42,023	0.026	57,865
	(0.034)		(0.037)		(0.025)		(0.021)	
Doesn't smoke (+)	**0.064****	9,193	0.066	12,696	**0.043*****	42,070	**0.060****	57,920
	(0.031)		(0.058)		**(0.007)**		**(0.026)**	

Notes : This table displays the estimated policy effects and standard errors (in parentheses). Statistically significant estimates according to the adjusted p-values are presented in bold. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β^P), based on Table 1. All the tests show the p-values derived from a Chi-square distribution. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for youth aged 15-19 in one-parent families and all family types (CCHS data). Standard errors are clustered by province and year.
*** : significant at 1%; ** : significant at 5%;* : significant at 10%

TABLE A.20 – Estimated effects of the policy on youths 15 to 19 (years 2009-10 : pre-, post-reform)

	2009 pre				2009 post			
	Doubles Differences		Triples Differences		Doubles Differences		Triples Differences	
Depedent Variable	β^P	N	β^P	N	β^P	N	β^P	N
Health								
Overall health (-)	0.051	37,708	-0.069	52,138	0.046	37,708	-0.042	52,138
	(0.044)		(0.048)		(0.036)		(0.072)	
Had asthma attack (-)	-0.000	37,691	-0.008	52,114	-0.010*	37,691	-0.001	52,114
	(0.007)		(0.009)		(0.006)		(0.010)	
Mental health (-)	-0.103*	29,930	**-0.175*** **	42,226	-0.029	29,930	-0.166**	42,226
	(0.052)		**(0.055)**		(0.056)		(0.082)	
Belonging (-)	0.043	36,060	0.082	49,891	-0.003	36,060	0.062	49,891
	(0.036)		(0.079)		(0.047)		(0.081)	
Life satisfaction (-)	0.001	29,917	-0.126	42,211	-0.040	29,917	-0.163*	42,211
	(0.052)		(0.087)		(0.040)		(0.084)	
Stress (-)	-0.011	33,140	0.049	47,550	-0.030	33,140	-0.008	47,550
	(0.047)		(0.042)		(0.045)		(0.054)	
Behavior								
Drank Alcohol (-)	0.032	37,656	0.034	52,079	**0.037***	37,656	0.024	52,079
	(0.025)		(0.023)		**(0.020)**		(0.019)	
Doesn't smoke (+)	**0.034*** **	37,692	**0.046** **	52,120	**0.026** **	37,692	**0.056** **	52,120
	(0.011)		**(0.021)**		**(0.012)**		**(0.022)**	

Notes : This table displays the estimated policy effects and adjusted p-values (in parentheses). 2009-2010 is included as pre or post-reform period. These p-values make use of a Simes p-value adjustment procedure to account for testing effects on multiple related outcomes. The table also shows the average effect for the full post-treatment period (β^P , based on Table 1. We also report a plus or minus sign for each outcome showing the direction the effect must take for the policy to be beneficial. Estimates are for youth aged 15-19 in two-parent families (CCHS data). Standard errors are clustered by province and year.
*** : significant at 1% ; ** : significant at 5% ;* : significant at 10%