

# Universal Child Care and Long-Run Effects on Parental Well-Being: Evidence from a Canadian Natural Experiment

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## Introduction

- Increased labor force participation of mothers with young children, demand for child care and their cost.
- Importance of early childhood development (Cunha et Heckman, 2010; Baker, 2011).
- Growing interest of policy makers towards public or subsidized child care.
- Universal child care, maternal employment and child development.
- Interest to study the effect of subsidized child care on parental well-being (Herbst et Takin, 2013).

## Introduction

- Baker, Gruber and Milligan (2008) (BGM) study the effect of universal child care policy in Quebec on parental well-being.
- In 1997: Implementation of low-fee child care (\$5 per day per child) for children under 5 years in Quebec. Phased in over period 1997-2000.
- Reform has a positive effect on maternal labour supply and child care utilisation (BGM, 2008; Haeck, Lefebvre et Merrigan, 2014).
- Reform has a negative effect on children's development and well-being at age 0-4 but also on parents' well-being (BGM, 2008; Kottelenberg and Lehrer, 2013).

## Introduction

We pursue research on this policy in two ways:

- Study the long-term effects on the expansion of the subsidized daycare network. Longer study period (until 2009) compared to BGM (2000-03). Possibility of short-term effects in the study of BGM. A non-experimental evaluation framework based on multiple pre- and post-treatment periods is used to estimate the policy effects.
- Study the effects of reform on preschool children and also those aged 5-9 years that have benefited from the program when younger (interest).

First study addressing the long-term effects of Quebec's child care reform on parental well-being of these two views.

# Plan

## Introduction

1. Literature review on child care, maternal employment and parental well-being
2. Quebec family policy
3. Data
4. Methodology
5. Results
- Conclusion

## On Quebec's universal child care policy

- The policy has a positive effect on maternal depression score, hostile and aversing parenting (BGM, 2008; Kottelenberg et al, 2013.).
- The policy has a negative impact on father's self-reported health status, satisfaction with relationship and parental consistency (BGM, 2008; Kottelenberg et al., 2013).
- The policy has a negative effect on parents' life satisfaction. Distinct effects depending on parents' education (Brodeur and Conolly, 2013).

## Other studies

- Negative effect of child care subsidies on maternal health (overall health, anxiety depression and parenting stress) and interactions between parents and their children (psychological and physical aggression). Their analysis focus only on unmarried mothers with young children and who are economically disadvantaged (Herbst and Takin, 2013).
- Negative impact of child care subsidies, maternal employment and child care use on maternal health and mother-child interaction (NICHD ECCRN, 2003; Chatterji et al., 2011, 2013; Kroll and Borck, 2013).

## Low-fee child care policy

- 1997-2000: regulated child care at the low-fee of \$5 per day per child for children less than 5 years (eligibility expanded every year for 4-, 3-, 2-, 1- and less than 1 year-old)
- The policy had two major objectives : i) increase mother's participation in the labour market and ii) enhance child development and equal opportunities for children.
- Number of regulated spaces in Quebec: 78,864 in September 1997 versus 258,366 in March 2013 (MFA, 2013).
- Public funds dedicated to the program: \$288 million in 1996-97 versus \$2.3 billion in 2012-2013.

## Other family policies in Quebec in 1997-98

- Free full-day kindergarten for children aged 5 on 30 September.
- Before and after-school daycare for children from 5-12 years at \$5 per day per child (\$7 after 2004).

# NLSCY

- National Longitudinal Survey Children and Youth (NLSCY)
- This survey has been held every two years. It started in 1994-95 (wave 1) and ended in 2008-09 (wave 8).
- Description

# Samples

- We study three age groups : 1-5 years not in school, 5-6 years in school and 7-9 years.
- We exclude children aged 0 and wave 3 (reasons)
- We focus on two-parent families. We also study according to mother's education and family status.

# Eligibility for low-fee child care

	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)
0	×	×	×	E(0)	E(0)	E(0)	E(0)	E(0)
1	×	×	×	E(0)	E(1)	E(1)	E(1)	E(1)
2	×	×	×	E(0)	E(2)	E(2)	E(2)	E(2)
3	×	×	E(0)	E(1)	E(2)	E(3)	E(3)	E(3)
4	×	×	E(0)	E(1)	E(2)	E(4)	E(4)	E(4)
5	×	×	E(1)	E(2)	E(3)	E(4)	E(5)	E(5)
6	×	×	×	E(1)	E(2) ☹	E(3) ☹	E(5)	E(5)
7	×	×	×	×	E(2) ☹	E(3) ☹	E(4)	E(5)
8	×	×	×	×	E(1)	E(2) ☹	E(3)	E(5) ☹
9	×	×	×	×	×	E(2) ☹	E(3)	E(4) ☹

Notes : This table shows the eligible children in Quebec to the low-fee daycare reform (indicated by E) and non-eligible children in Quebec (indicated by a symbol ☹) according to children's age and wave. Numbers in parentheses indicate the number of years of eligibility. For example, for a 5-year child in wave 5 (and therefore born in 1997), he was eligible for three years of low-fee child care. The index E(0) refers to the fact that the child is eligible for a few months, not a year. The symbol ☹ means that the child is eligible for child care at \$5, however, the data for this age group in this cycle are not available in NLSCY data.

# Model

- Difference-in-Difference model (DD):

$$Y_{ij} = \alpha + \theta Q_{ij} + \sum_{j=1}^8 D_j + \sum_{j=c}^8 \beta_j W_j Q_{ij} + \Phi X_{ij} + \varepsilon_{ij}$$

- Treatment group: parents in Quebec.
- Control group: parents in the Rest of Canada.
- The parameters  $\beta_j$  allow to take into account the progressive implementation of the reform with different waves according to age group of children.
- To account for unobserved transitory shocks at the group level, we also implement a two-step procedure to adjust the standard errors (Donald and Lang, 2007)

TABLE 5 – Estimated effects of the policy on parents' well-being with children aged 1 to 5 not in school (two-parent families)

	Children aged 1 to 5 not in school							
Variable	$\beta_4$	$\beta_5$	$\beta_6$	$\beta_7$	$\beta_8$	$\beta$	Mean	N
	(2000-01)	(2002-03)	(2004-05)	(2006-07)	(2008-09)	(2000-09)	(S.d)	
Parent Health								
Mother in excellent health	0.02 (0.03)	-0.01 (0.03)	-0.01 (0.03)	0.00 (0.03)	0.01 (0.04)	0.01 (0.03)	0.41 (0.49)	40868 [350]
Father in excellent health	-0.01 (0.03)	-0.02 (0.03)	-0.02 (0.03)	0.04 (0.03)	0.03 (0.03)	0.01 (0.02)	0.45 (0.50)	40642 [350]
Mother's depression score	0.61* (0.33)†††	0.57** (0.27)††	0.86** (0.36)††	1.25*** (0.37)††	0.24 (0.31)	0.70*** (0.24)†††	4.05 (4.59)	39892 [350]
Parent Behavior								
Family Dysfunction Index	0.43 (0.30)	-0.40 (0.30)	0.13 (0.33)	0.01 (0.33)	0.64* (0.35)†	0.18 (0.24)†	7.18 (5.07)	40339 [350]
Positive Interaction (from 2 years)	-0.79*** (0.18)††	-0.62*** (0.17)††	-0.92*** (0.19)††	-0.43** (0.18)†	-0.34* (0.19)†	-0.62*** (0.14)†††	15.89 (2.74)	30127 [280]
Hostile/Ineffective parenting (from 2 years)	0.64*** (0.24)	0.69** (0.27)	0.86*** (0.31)	0.89*** (0.29)††	0.40 (0.28)	0.69*** (0.21)†	8.33 (3.87)	29657 [280]
Consistent parenting (from 2 years)	-0.57*** (0.22)	-0.48** (0.22)†	-0.18 (0.25)	-0.06 (0.23)	0.05 (0.22)	-0.25 (0.17)†	14.11 (3.27)	29275 [280]
Aversive parenting (from 2 years)	0.19 (0.14)	0.26* (0.14)	0.51*** (0.15)	0.42*** (0.16)	0.36** (0.16)	0.34*** (0.11)	8.29 (1.96)	29985 [280]

Notes : This table shows the estimated coefficients and standard errors (in parentheses) for the unadjusted estimates (indexed by \*). For the adjusted estimates, we report only the level of significance of the results obtained following the procedure in two-steps of Donald and Lang (2007) (indexed by †). The table also shows the effects by wave (  $\beta_4$  à  $\beta_8$  ) and the average effect on the post-treatment period (  $\beta$  ). Means and standard deviations (in parentheses) for each outcome before policy in Quebec are included. The last column shows the number of observations for the unadjusted and adjusted estimated (brackets). Estimates are for parents with children aged 1-5 not in school and two-parent families. Each regression includes all the control variables from Table 4. Bootstrap weights from Statistic Canada are used.

\*\*\*, ††† : significant at 1%; \*\*, †† : significant at 5%; \*, † : significant at 10%;

TABLE 6 – Estimated effects of the policy on parents' well-being with children aged 5 to 6 in school (two-parent families)

Children aged 5 to 6 school							
Variable	$\beta_4$ (2000-01)	$\beta_5$ (2002-03)	$\beta_6$ (2004-05)	$\beta_7$ (2006-07)	$\beta_8$ (2008-09)	$\beta$ (2000-09)	Mean (S.d)
Parent Health							
Mother in excellent health	0.06 (0.04)	0.01 (0.05)	0.08 (0.06)	0.02 (0.05)	-0.01 (0.05)	0.03 (0.04)	0.39 (0.49) [119]
Father in excellent health	-0.04 (0.04)	-0.05 (0.05)	-0.13** (0.06)	-0.04 (0.05)	-0.06 (0.05)	-0.06 (0.04)	0.47 (0.50) [119]
Mother's depression score	0.06 (0.40)	0.29 (0.41)	0.17 (0.49)	0.26 (0.49)	0.09 (0.49)	0.15 (0.33)	3.70 (4.40) [119]
Parent Behavior							
Family Dysfunction Index	-0.51 (0.47)	-0.18 (0.49)	-0.49 (0.65)	0.30 (0.54)	0.62 (0.59)	-0.03 (0.39)	7.27 (5.12) [119]
Positive Interaction (from 2 years)	-0.62** (0.27)	-0.90*** (0.25)††	-0.88** (0.33)	-0.77*** (0.25)†	-0.31 (0.27)	-0.64*** (0.20)††	13.90 (2.59) [119]
Hostile/Ineffective parenting (from 2 years)	0.05 (0.40)	0.31 (0.42)	0.41 (0.55)	0.39 (0.47)	0.53 (0.46)	0.31 (0.38)	8.54 (3.74) [119]
Consistent parenting (from 2 years)	0.06 (0.28)	0.27 (0.27)	-0.03 (0.37)	0.78*** (0.29)††	0.26 (0.33)	0.29 (0.22)	13.91 (3.07) [119]
Aversive parenting (from 2 years)	-0.43** (0.18)	0.12 (0.18)	0.04 (0.26)	0.03 (0.21)	0.01 (0.19)	-0.11 (0.15)	8.35 (1.83) [119]

Notes : This table shows the estimated coefficients and standard errors (in parentheses) for the unadjusted estimates (indexed by \*). For the adjusted estimates, we report only the level of significance of the results obtained following the procedure in two-steps of Donald and Lang (2007) (indexed by †). The table also shows the effects by wave ( $\beta_4$  à  $\beta_8$ ) and the average effect on the post-treatment period ( $\beta$ ). Means and standard deviations (in parentheses) for each outcome before policy in Quebec are included. The last column shows the number of observations for the unadjusted and adjusted estimates (brackets). Estimates are for parents with children aged 5-6 in school and two-parent families. Each regression includes all the control variables from Table 4. Bootstrap weights from Statistic Canada are used.

\*\*\*, ††† : significant at 1%; \*\*, †† : significant at 5%; \*, † : significant at 10%;

TABLE 7 – Estimated effects of the policy on parents' well-being with children aged 7 to 9 (two-parent families)

	Children 7-9					
Variable	$\beta_5$ (2002-03)	$\beta_7$ (2006-07)	$\beta_8$ (2008-09)	$\beta$ (2000-09)	Mean (S.d)	N
Parent Health						
Mother in excellent health	0.02 (0.05)	0.04 (0.03)	0.06 (0.06)	0.04 (0.03)	0.36 (0.48)	17249 [180]
Father in excellent health	-0.09* (0.05)	-0.03 (0.03)	-0.07 (0.06)	-0.05* (0.03)	0.40 (0.49)	17125 [180]
Mother's depression score	-0.47 (0.51)	0.40 (0.32)	-0.07 (0.59)	0.09 (0.29)	3.74 (4.84)	17014 [180]
Parent Behavior						
Family Dysfunction Index	-0.24 (0.60)	0.12 (0.36)	-0.02 (0.60)	0.00 (0.33)	7.56 (5.15)	17072 [180]
Positive Interaction (from 2 years)	-0.38 (0.25)	-0.13 (0.20)	-0.41 (0.29)	-0.24 (0.16)	12.25 (2.67)	17283 [180]
Hostile/Ineffective parenting (from 2 years)	0.03 (0.37)	-0.02 (0.26)	0.00 (0.46)	-0.00 (0.22)	8.54 (3.61)	17019 [180]
Consistent parenting (from 2 years)	-0.17 (0.36)	0.13 (0.21)	0.26 (0.34)	0.07 (0.19)	14.33 (3.17)	16847 [180]
Aversive parenting (from 2 years)	-0.22 (0.19)	0.17 (0.13) <sup>†</sup>	-0.07 (0.22)	0.03 (0.11)	8.11 (1.74)	17248 [180]

Notes : This table shows the estimated coefficients and standard errors (in parentheses) for the unadjusted estimates (indexed by \*). For the adjusted estimates, we report only the level of significance of the results obtained following the procedure in two-steps of Donald and Lang (2007) (indexed by †). The table also shows the effects by wave ( $\beta_4$  à  $\beta_8$ ) and the average effect on the post-treatment period ( $\beta$ ). Means and standard deviations (in parentheses) for each outcome before policy in Quebec are included. The last column shows the number of observations for the unadjusted and adjusted estimated (brackets). Estimates are for parents with children aged 7-9 and two-parent families. Each regression includes all the control variables from Table 4. Bootstrap weights from Statistic Canada are used.

\*\*\*, \*\*, \* : significance at the 1%, 5%, 10% level respectively. † : significance at the 10% level.

## Alternative samples

- Similar results regardless of parental education. Stronger negative effects for low-educated mothers (possible reasons).
- Results for single-parent families.
- Existence of other policies impacting disadvantaged families.

## Conclusion

- We evaluate the long-term effects of universal child care policy on parental well-being in Quebec.
- We follow treated children and parents for more than 9 years and investigate the impact well beyond the first few years of the policy.
- We show that the reform had negative effects on parent's well-being with preschool children, but these effects tend to disappear as the child gets older. We find that this pattern persists even ten years after the implementation of the reform.
- Consistent with the study of Lebihan, Haeck and Merrigan (2014) on the long-run effects of the policy on children's well-being.