

Poster 126 - Poverty, Child health, and Cognitive Development at Age 6: Some Results from the Québec Longitudinal Study of Child Development (QLSCD-Canada)

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Abstract (Revised)

Background

Receptive language in preschoolers, often used as an indicator of cognitive skills, is recognized as being a good predictor of academic performance. Although it is generally admitted that children from low-income families are more likely to have some delay with this language skill, there are still some controversy on the real impact of poverty and the actual processes involved. Among other things, the role of health conditions in early childhood has not been thoroughly examined. In fact, poor health conditions could constitute a determinant factor which modulates the relationship between poverty dynamics and cognitive development.

Study objective

To sort out the effects of poverty dynamics, health and family living conditions during preschool years on the receptive language skills of children at the time they enter school, as measured by the Peabody Picture Vocabulary Test (PPVT-R). The analysis draws on a sample of 1,077 children who were followed annually from age 5 months on for the Québec Longitudinal Study of Child Development (QLSCD 1998-2010).

Summary of findings

Results of the multiple regression analyses performed show that delayed language skills of children living in poverty are largely due to their poorer health and the family living conditions in which they were raised. According to QLSCD data, the impact of chronic insufficient income disappears when the educational level of mothers is put in the model.

After testing for interactions between different variables included in the final regression model and the poverty dynamics variable, results show that being a boy is associated with a delay in language skills only in poorer settings. Also, learning more than one language seems to be associated with lower language skills performance, in French or in English, only for children who have lived in poverty before age 4.

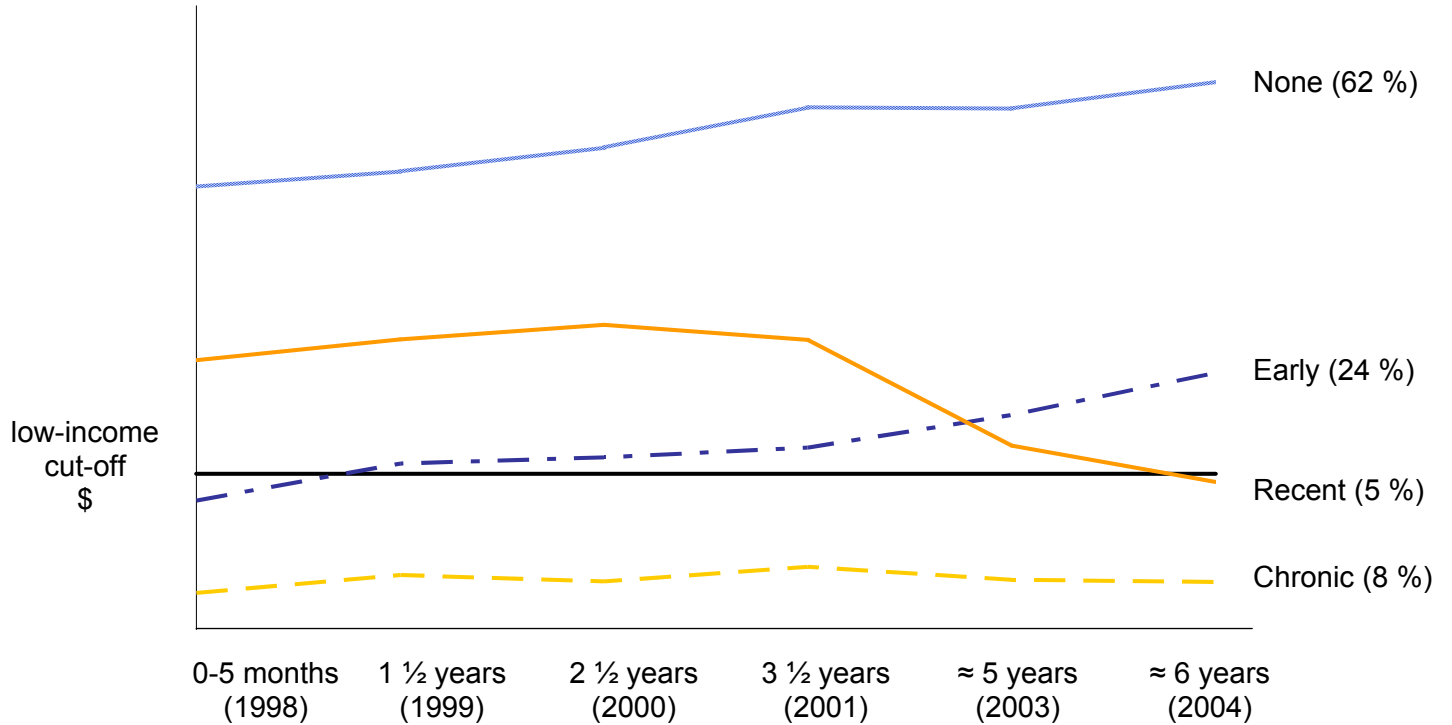
Research and policy implications

To optimize the development of language in infancy, results show the importance of pursuing early intervention programs. Special attention should be put on health and family living conditions of the child.

Given the predictive nature of school preparation for academic achievement and later social adjustment, it appears essential to pursue research and analysis in order to better identify protective factors among high-risk children.

Additional tables and figures

Evolution of average family income¹ by low-income situation, from birth to 6 years of age², Québec, Canada, 1998-2004



1. Mean deviation between household gross income and the low-income cut-off before taxes.
2. None: no low-income episode before kindergarten; Recent: only one or two recent episodes of low-income (at age 5 or 6); Early: at least one low-income episode before age 4; Chronic: below the low-income threshold from birth to age 6

Source: Institut de la statistique du Québec, QLSCD 1998-2010.

Table 1

Main characteristics associated with delayed language skills (lowest quintile of the PPVT-R score distribution) among kindergarten children, logistics regression models, Québec, Canada, 1998-2004¹

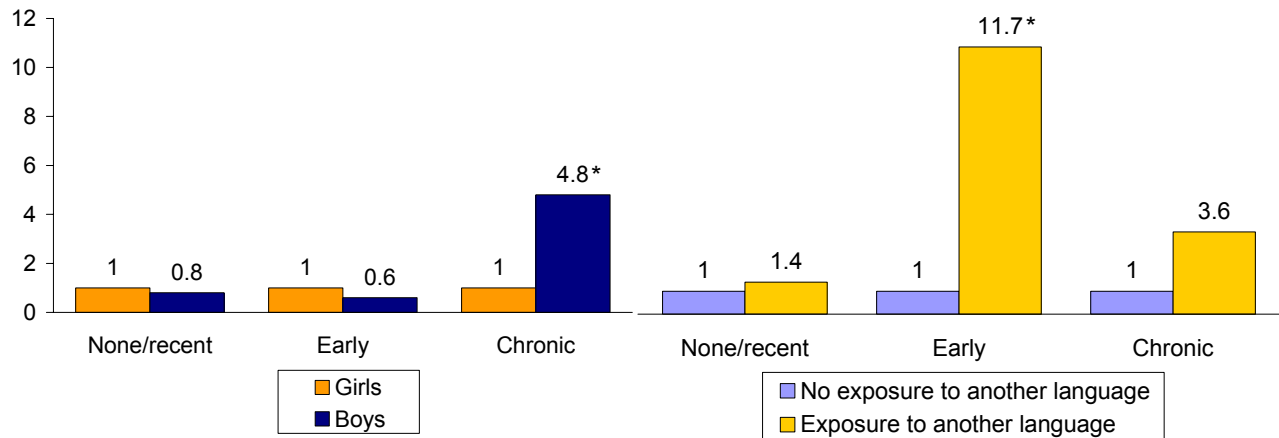
	Models			
	1	2	3	4
Sex of child				
<i>Boy</i>	1.00	1.00	1.00	1.00
Girl	1.07	1.04	0.95	0.86
Age of child (continuous)	0.40 [†]	0.39 [†]	0.29 ^{††}	0.24 ^{††}
Exposure to other than PPVT language				
<i>No</i>	1.00	1.00	1.00	1.00
French or English	1.61	1.67 [‡]	1.81 [‡]	2.08 [†]
At least one language other than French or English	5.33 ^{†††}	7.10 ^{†††}	6.93 ^{†††}	5.15 ^{†††}
Poverty dynamics				
<i>Non/recent</i>	1.00	1.00	1.00	1.00
Early	3.16 ^{†††}	2.28 ^{††}	1.77 [†]	1.61 [‡]
Chronic	2.30 [†]	1.48	1.29	0.99
Educational level of mother				
<i>High school diploma</i>		1.00	1.00	1.00
No high school diploma		1.32	1.21	1.05
Post-secondary diploma (other than university)		0.61 [‡]	0.58 [†]	0.56 [†]
University degree		0.33 ^{††}	0.29 ^{†††}	0.31 ^{†††}
Low birth weight (under 2500g)				
<i>No</i>			1.00	1.00
Yes			2.90 [†]	2.95 [†]
Ear infection(s) in the preceding 3 months (at 1 ½ years)				
<i>No</i>			1.00	1.00
Yes			1.58 [†]	1.60 [†]
Health of child perceived as less than very good during at least one survey round				
<i>No</i>			1.00	1.00
Before age 4			2.07 ^{††}	1.82 [†]
At age 5 or 6 only			1.24	1.21
Mother's overprotection (at 5 months)				
<i>No</i>				1.00
Yes				1.84 [†]
Reading to child (at 1 ½ years)				
<i>No</i>				1.00
Weekly/Occa.				0.57 [‡]
Daily				0.32 ^{†††}
Low perceived social support (at 2 ½ years)				
<i>No</i>				1.00
Yes				1.97 ^{††}

1. The reference category is in italics. Odds ratios are significantly different from 1 at thresholds of: [‡] p < 0.10; [†] p < 0.05; ^{††} p < 0.01; ^{†††} p < 0.001.

Source : Institut de la statistique du Québec, QLSCD 1998-2010.

Interactions

Adjusted odds ratios (CI 95%)¹ — delayed language skills, by poverty dynamics, sex and exposure to another language



1. Adjusted for all variables in model 4 of table 1.

* p < 0.05 relative to the reference category, the value for which is set at 1.

Source: Institut de la statistique du Québec, QLSCD 1998-2010.