Poverty, Social Capital, Parenting & Child Outcomes

RDC Conference on Canadian Families Under Pressure.

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Helping Families Under Pressure

- Policy aim would be to support development of "Strong Neighbourhoods"
- Strong neighbourhoods ought to reduce bad influences flowing from family dysfunction, family poverty, caregiver depression.

Effects of Neighbourhoods on Child Outcomes

- As well as direct effects, neighbourhood characteristics could modify the effects of family level predictors upon child outcomes.
- Examples: neighbourhood modification of the effects of poverty (low SES) upon child outcomes.

Social Support & Collective Efficacy

- Social support and collective efficacy may affect child outcomes, but when the same parent tells about both the neighbourhood and child outcomes, the correlation is suspect.
- Solution is to aggregate individual perceptions to the level of neighbourhoods.

"Ecometrics"

- "…neighbourhood characteristics such as aggregated respondent ratings "can and should be treated as ecological or collective phenomena rather than as individual-level perceptions…" Sampson et al. (2002: 456-7).

Data analyses with NLSCY

- Analyses using the shared file (cycles 1-3). These include neighbourhood-level measures.
- Analyses using the master file (cycles 1-4). These do not yet include neighbourhood-level measures.
- Future analyses of cycles 1-5 will include neighbourhood-level measures derived inter alia from several GSS surveys.

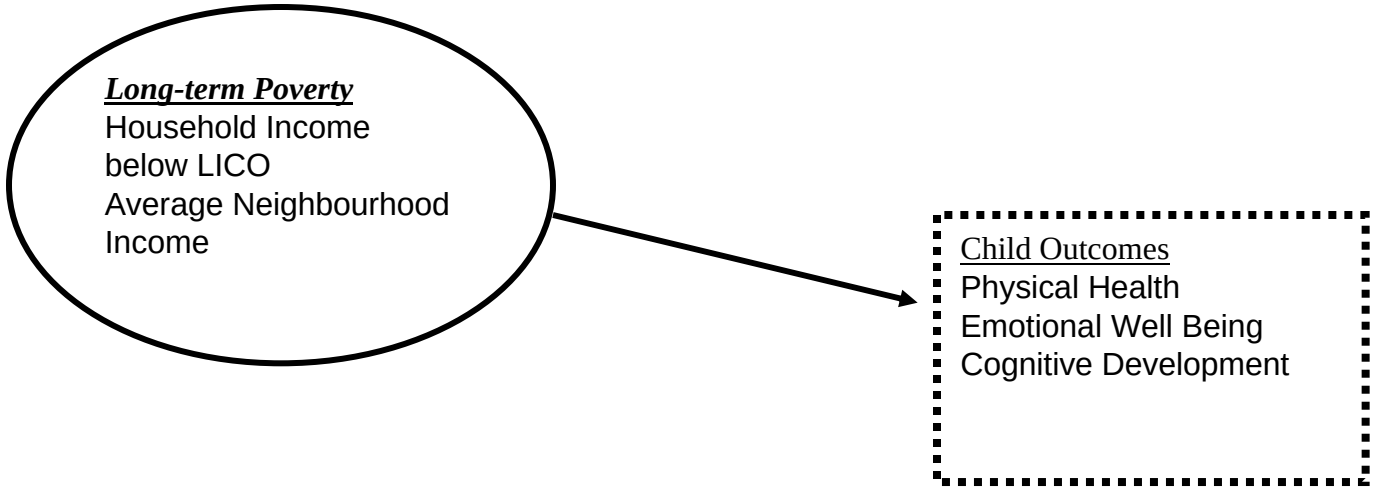
Some Measures

- Household income below the LICO at Cycle 1: also at Cycle 4.
- Family dysfunction (scale)
- PMK depression (scale)
- Child outcomes: Height, BMI, General Self Image, Conduct Disorder (Aggression), etc.

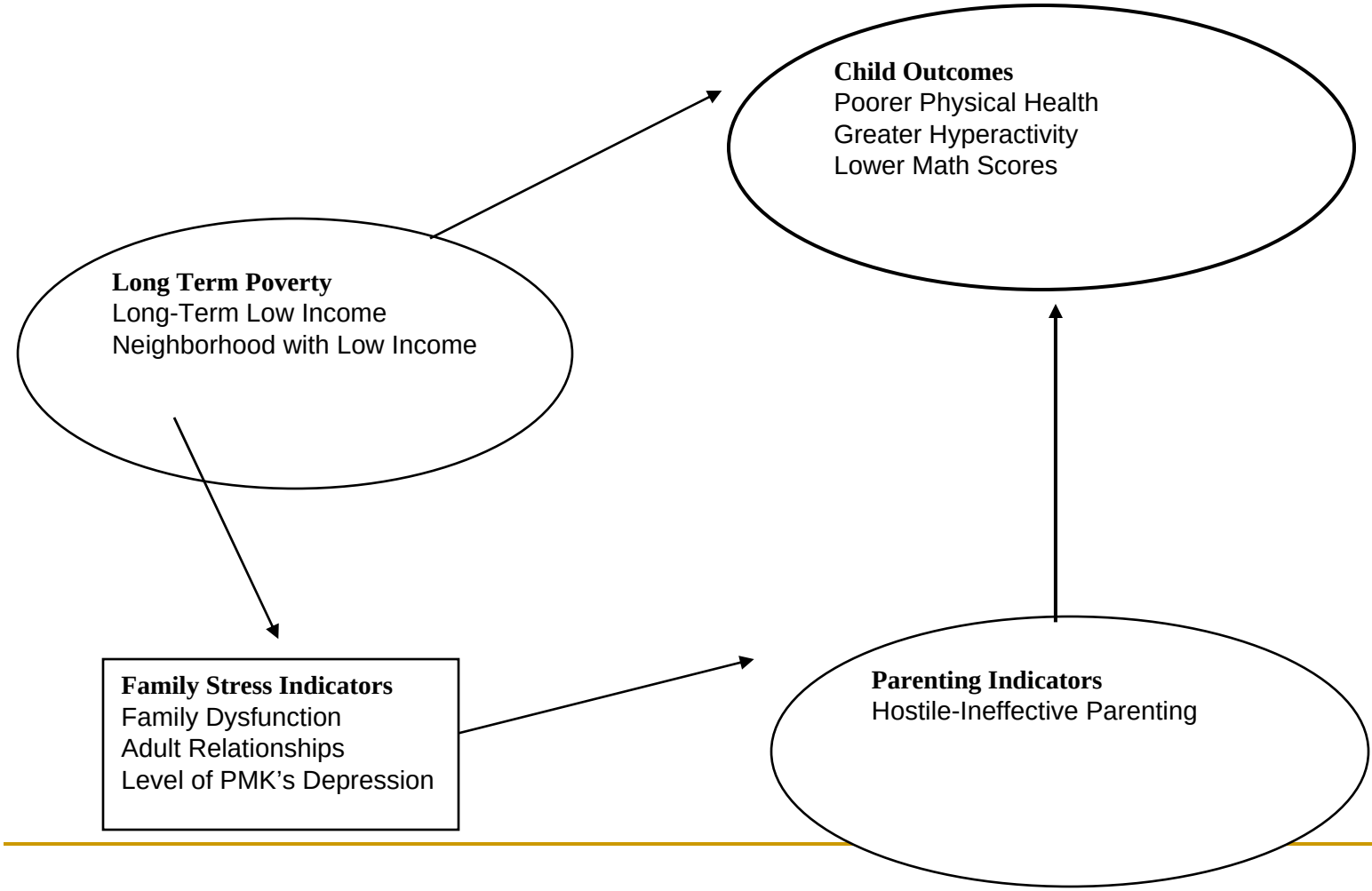
Exposure to Low Income

- Following 1,769 longitudinal children who were aged 10 and 11 at Cycle 1 (Unweighted)
- % below LICO at Cycle 1: 18%
- % below LICO at Cycle 2: 18%
- % below LICO at Cycle 3: 13%
- % below LICO at Cycle 4: 9%
  - Attrition may be linked to low income

Basic Model. Predicts child outcomes from poverty indicators



Family Stress Model Without Neighbourhood Context

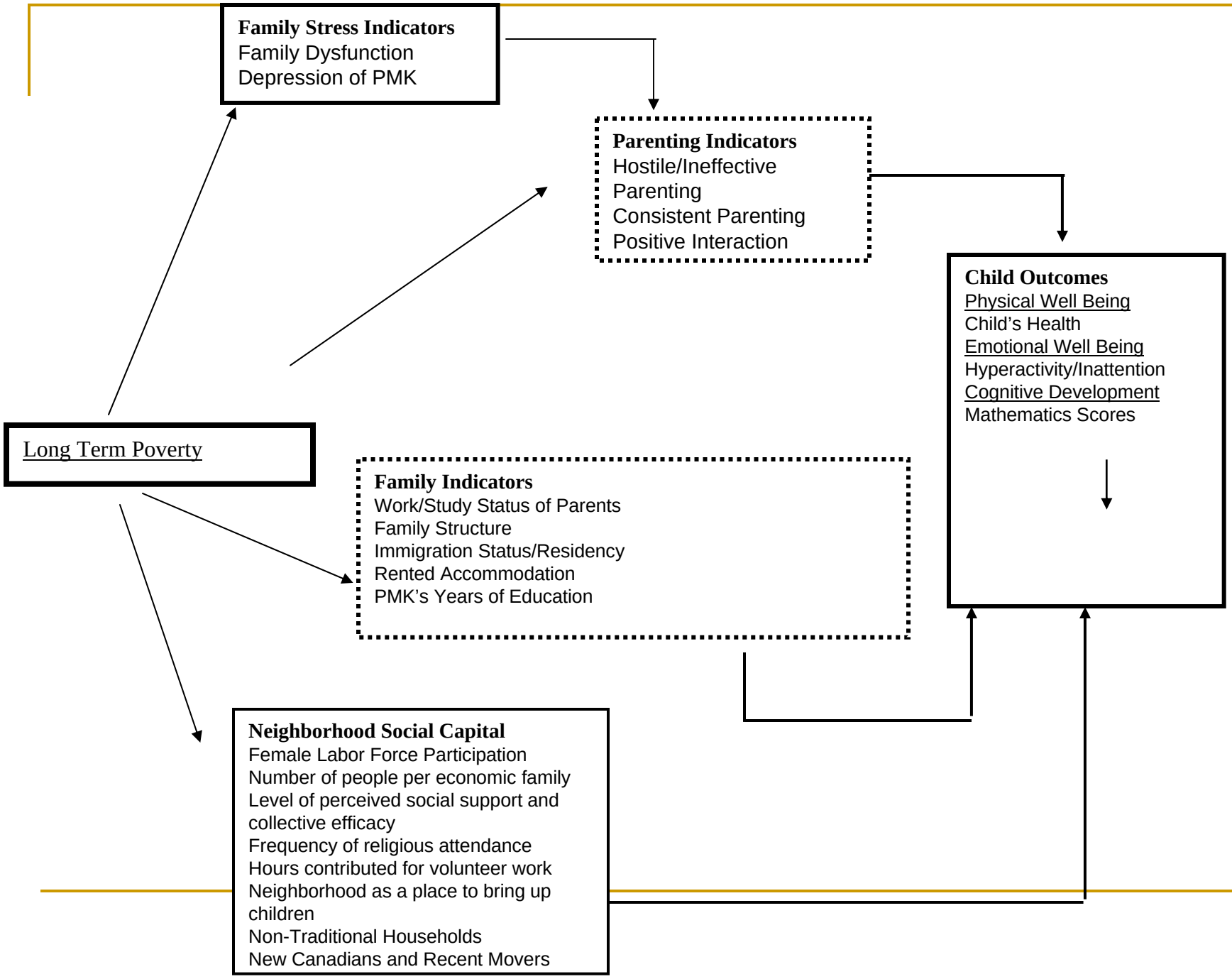


Some Correlations From NLSCY

- Ten Yr Olds, Cycle 3. Weighted.
- Family Dysfunction with PMK Depression 0.35
- Family Dysfunction with Positive Parenting -0.22
- Family Dysfunction with Ineffective Parenting 0.27
- Family Dysfunction with Child Hyperactivity 0.18
- Family Dysfunction with Child Anxiety 0.21
- Family Dysfunction with Child Aggression 0.21

Modified Family Stress Model

- This predicts child outcomes
- from long term poverty ,
- family stress and parenting indicators,
- PLUS the proposed mediating and moderating variables of neighborhood social capital (collective efficacy, neighbourhood social cohesion, etc.)


Family Stress Indicators
Family Dysfunction
Depression of PMK
Parenting Indicators
Hostile/Ineffective Parenting
Consistent Parenting
Positive Interaction
Child Outcomes
Physical Well Being
Child's Health
Emotional Well Being
Hyperactivity/Inattention
Cognitive Development
Mathematics Scores
Long Term Poverty
Family Indicators
Work/Study Status of Parents
Family Structure
Immigration Status/Residency
Rented Accommodation
PMK's Years of Education
Neighborhood Social Capital
Female Labor Force Participation
Number of people per economic family
Level of perceived social support and collective efficacy
Frequency of religious attendance
Hours contributed for volunteer work
Neighborhood as a place to bring up children
Non-Traditional Households
New Canadians and Recent Movers

Same model fit for several outcomes

- Predictors
- Child age in months
- Child gender
- Indicator: below LICO at Cycle 1
- Indicator: below LICO at Cycle 2
- Interaction: age by gender

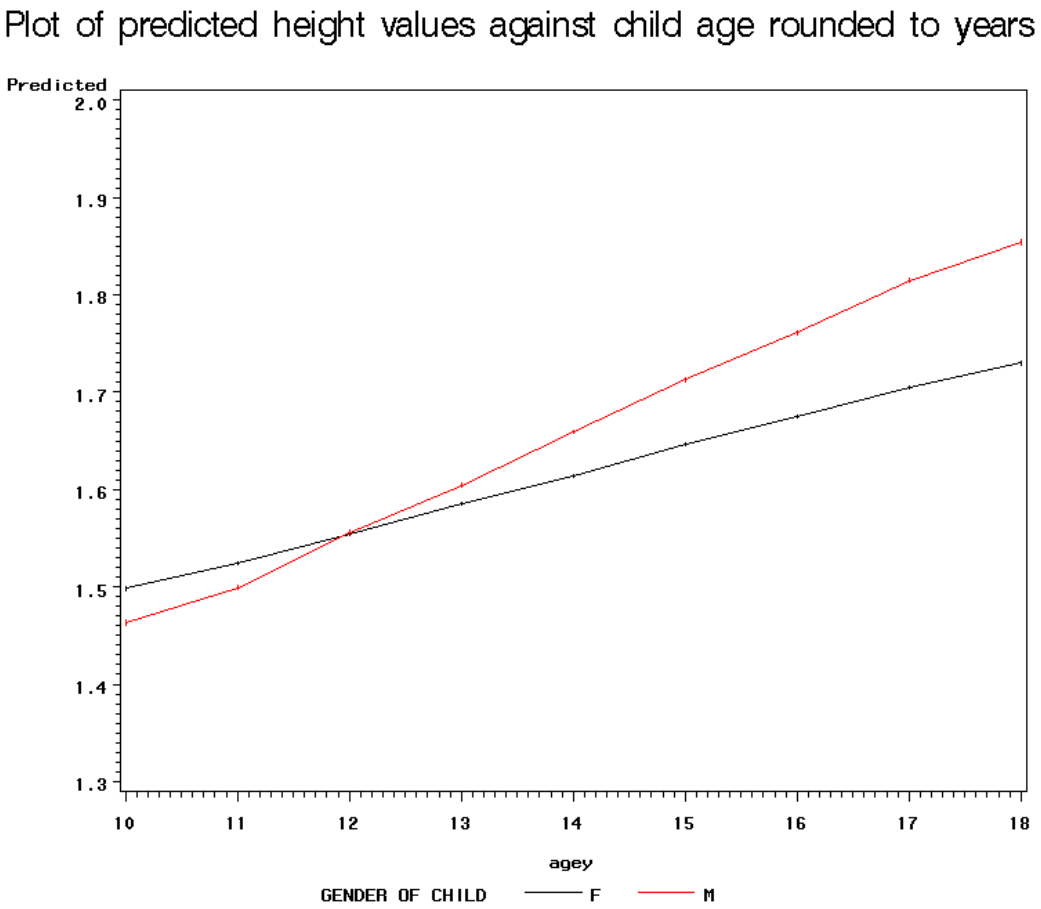
Unweighted Case Counts

- These are longitudinal children who entered the study at Cycle 1 & were aged 10 yrs + at Cycle 1: 16 yrs + at Cycle 4
- 1,769 children
- 4 waves of data
- 1,389 geographical areas
  - Province / FED / EA from 1996 Census.
  - We use respondent's neighbourhood of residence at the last Cycle (cycle 4).

Does Poverty Reduce Height?

- Preliminary analyses of cycle 1-4 of the NLSCY indicate that experiencing poverty reduces reported child height by roughly 2 centimeters among children aged 10 to 18
- Below the LICO at Cycle 1: -0.026 Metres
- Below the LICO at Cycle 4: -0.021 Metres
  - Both effects are statistically significant

Predicting Child Height



Poverty Increases BMI

- Preliminary analyses of cycle 1-4 of the NLSCY indicate that experiencing poverty increases BMI in Kilos/square metre among children aged 10 to 18
- Below the LICO at Cycle 1: 0.38
- Below the LICO at Cycle 4: 0.88
  - Only the second effect is statistically significant

Poverty Increases PMK Depression

- Preliminary analyses of cycle 1-4 of the NLSCY indicate that experiencing poverty increases PMK Depression among children aged 10 to 18
- Below the LICO at Cycle 1: 1.73
- Below the LICO at Cycle 4: 3.11
  - Both effects are statistically significant

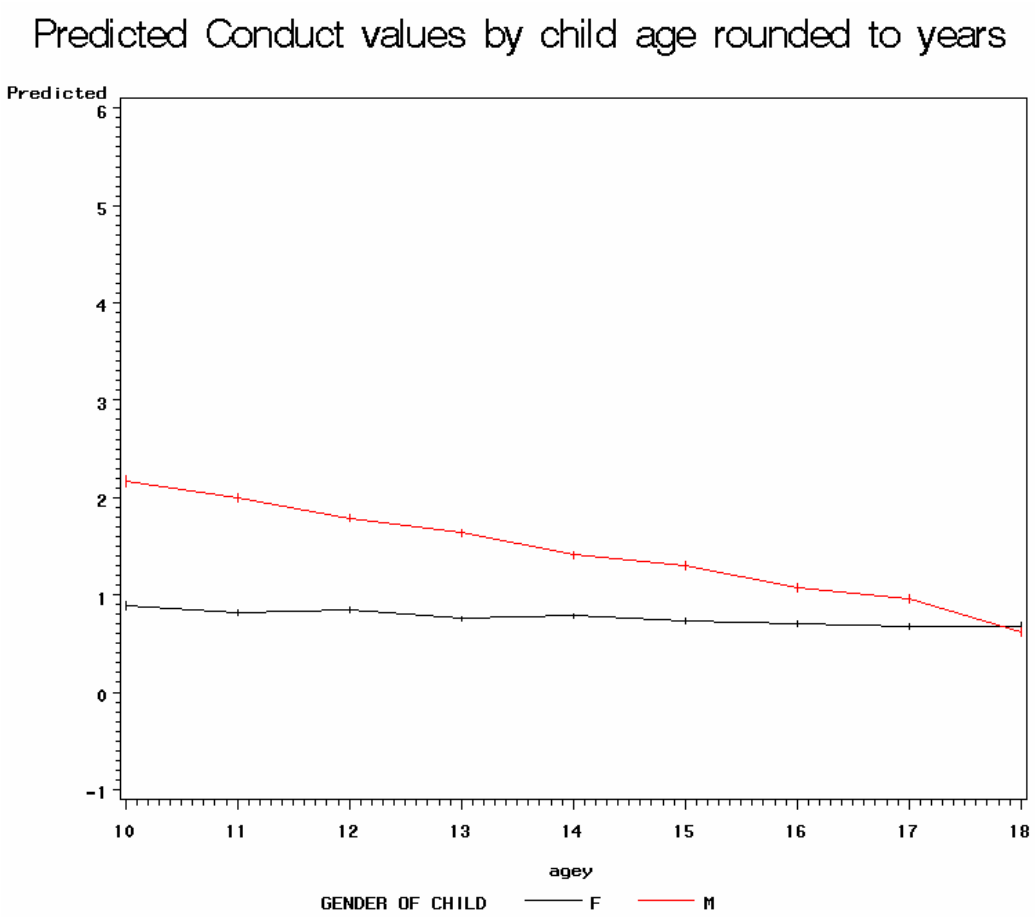
Poverty Increases Family Dysfunction

- Preliminary analyses of cycle 1-4 of the NLSCY indicate that experiencing poverty increases Family Dysfunction among children aged 10 to 18
- Below the LICO at Cycle 1: 0.91
- Below the LICO at Cycle 4: 0.85
  - Both effects are highly statistically significant

Poverty Increases Child Conduct Disorder

- Preliminary analyses of cycle 1-4 of the NLSCY indicate that experiencing poverty increases Child Conduct Disorder among children aged 10 to 18
- Below the LICO at Cycle 1: 0.236
- Below the LICO at Cycle 4: 0.245
  - Both effects are statistically significant

Predicting Child Conduct Disorder



Poverty has no effect on some child outcomes

- Analyzing 4 cycles of data from children aged from 10 to 18 and using self-reports from those children:
- Poverty has no effect on:
  - General self-esteem
  - Emotional disorder / Anxiety
  - Hyperactivity

Analyses Using Cycles 1-3 Only

- The following analyses use data from cycles 1-3 of the "shared" file: longitudinal children aged 4 yrs + at Cycle 1.
- We selected cases if they came from neighbourhoods with at least 10 children.
- After dropping some cases with missing data, this yielded 1,644 children from 135 neighbourhoods at 3 time points.
- The children are no longer a nationally representative sample.

Measures that are Aggregated to Neighbourhood Level

- Measures used today
  - a) *Perceived Social Support Index*. (Multi-item scale)
  - b) *Collective Efficacy / Social Cohesion Index*. (Multi-item scale)
- Multilevel modeling lays stress on centering independent variables and on expressing individual scores as deviations from aggregated means.

Data Preparation

- Neighbourhood-level social support and collective efficacy were produced by aggregating data from all respondents including many whose children were not in this analysis. These aggregated perceptions come from waves 1 and 3 of the longitudinal survey (not asked in wave 2)
- Group-centred social support (deviation)
- Group-centred collective efficacy (deviation)
- After group-centred variables had been created most variables were standardized.

Dependent Variables

- Hostile-Aggressive Parenting (reported by PMK)
- Child's Hyperactivity (reported by PMK)
- Child's Pro-Social behaviour (reported by PMK)
- Predictors include age, gender, wave, SES: also both contextual and perceived versions of Social Support and Collective Efficacy.

Options for PROC MIXED

Model Information	
Data Set	NLSCY.ANALSTD3
Dependent Variable	Hostile Parenting
Weight Variable	normwt
Covariance Structure	Factor Analytic
Subject Effects	Neighbourhoods, Children(Neighbourhoods)
Estimation Method	ML
Residual Variance Method	Profile
Fixed Effects SE Method	Prasad-Rao-Jeske-Kackar-Harville
Degrees of Freedom Method	Kenward-Roger

Results: Comparison of Fixed Effects for Three Child Outcomes

Solution for Fixed Effects					
Effect	**Estimate for Hyperactivity**	**Estimate for ProSocial**	**Estimate for Hostile Parenting**		
Intercept	-0.04079ns	0.03963ns	0.01011ns		
wave	0.01324ns	0.01469ns	-0.03189ns		
Age of Child	-0.01135ns	**0.02162*** **	-0.01043ns		
Girl	**-0.1533*** **	**0.1367*** **	**-0.08632*** **		
SES	**-0.1138*** **	**0.04158***	**-0.05578** **		
Mean Family Size	-0.0ns	**-0.05044***	-0.01857ns		
Birthweight	**-0.05137***	-0.02253ns	-0.00429ns		
Contextual Support	**0.1095*** **	**0.1003*** **	0.02860ns		
Group-Centred Support	-0.02953ns	**0.06665*** **	-0.01636ns		
Contextual Collective Efficacy	**-0.06518*** **	0.02736ns	**-0.05170** **		
Group-Centred Collective Efficacy	0.01823ns	0.002116ns	**-0.02858***		

Results: Slope-Variation: Hostile-Ineffective Parenting

- Systematic slope variation when predicting hostile-ineffective parenting
  - Socioeconomic Status (SES) – significant
  - Social Support (deviation) – marginally significant

Hostile-Ineffective Parenting M4 Random Slopes (SES)

Covariance Parameter Estimates						
Cov Parm	**Subject**	**Ratio**	**Estimate**	**Standard Error**	**Z Value**	**Pr Z**
FA(1,1)	Neighbourhoods	1.4990	0.3008	0.03046	9.88	<.0001
FA(2,1)	Neighbourhoods	-0.1830	-0.03673	0.03652	-1.01	0.3145
FA(2,2)	Neighbourhoods Socioeconomic status slopes	1.0782	0.2164	0.02809	7.7	<.0001
FA(1,1)	Children(Neighbourhoods)	3.6868	0.7398	0.01913	38.68	<.0001
FA(2,1)	Children(Neighbourhoods)	-0.4883	-0.09798	0.01401	-7.00	<.0001
FA(2,2)	Children(Neighbourhoods) Wave slopes	1.6086	0.3228	0.01015	31.81	<.0001
Residual		1.0000	0.2007	0.005852	34.29	<.0001

Effects on Hostile-Ineffective Parenting

- Neighbourhood-level Collective Efficacy (higher social capital neighbourhoods are associated with less hostile parenting)
- Gender (girls get less hostile parenting)
- SES (higher SES get less hostile parenting)

Conclusions re: SES

- Family SES (which includes a poverty component) affects child hyperactivity and pro-social behaviour as well as hostile-ineffective parenting.
- The relationship between SES and Hostile-Aggressive parenting has significant slope variation over different neighbourhoods.

Issues for Further Exploration

- Estimate the probabilities with which children move between neighbourhoods having different levels of social capital
- Carry out confirmatory data analysis using bootstrap weights with OLS regression models and appropriate cross-level interaction terms.

Next Steps

- More “ecometrics”. In addition to Small Area Statistics from the Census, we will aggregate respondents’ perceptions (e.g. of neighbourhood safety) from General Social Surveys as well as from further waves of NLSCY and NPHS.

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