

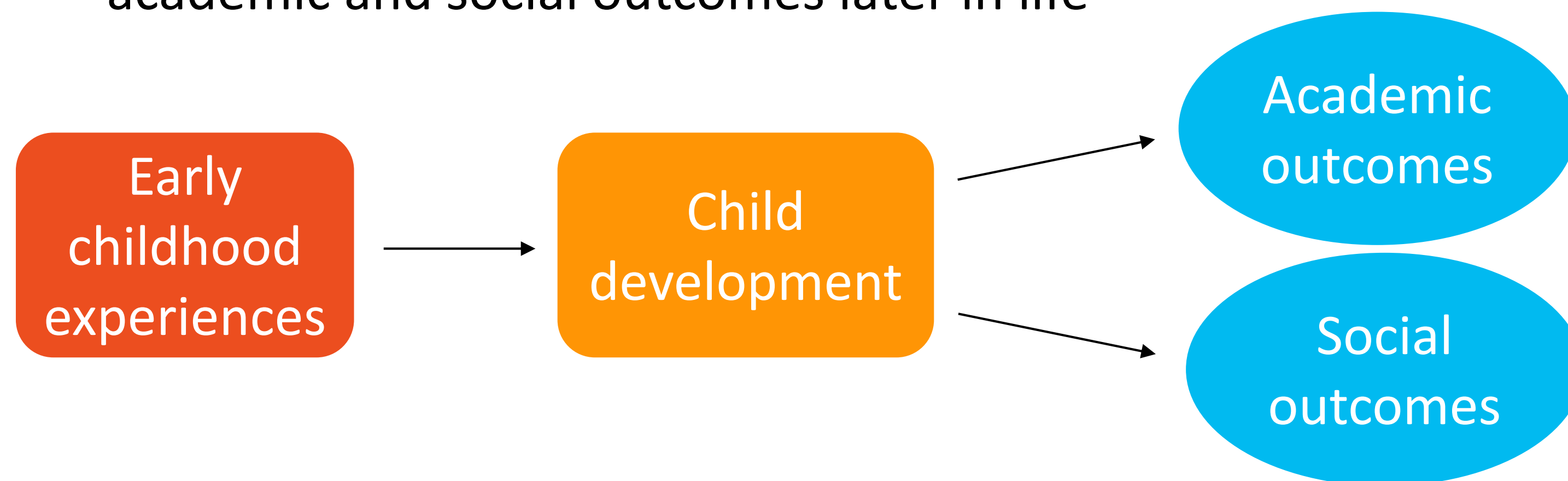
The socioeconomic gradient in the developmental health of Canadian kindergarten children with disabilities

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Background

- Children with disabilities experience poor developmental health at school entry, which puts them at risk of poor academic and social outcomes later in life



- Little is known about the relationship between SES and functional outcomes in children with disabilities
- It is essential to evaluate the significance of SES in predicting developmental outcomes for children with special needs as it may offer **opportunities for policy intervention**

Methods

- The **Early Development Instrument (EDI)** is a teacher-completed assessment of children's developmental health at school entry in five domains (each scored on a 0 to 10 scale):

- physical health & wellbeing**
- social competence,**
- emotional maturity,**
- language & cognitive development,**
- communication skills & general knowledge**

- Data were collected in 12 out of 13 Canadian provinces/territories between 2002 and 2014, and include child demographics and EDI domain scores
- EDI data are aggregated to custom neighborhoods and linked to 2006 Census and 2005 Taxfiler data, which were used to create a standardized neighborhood-level SES index
- EDI domain scores were transformed (11 - EDI score) for use in hierarchical generalized linear models with identity links and gamma distributions to quantify the association between developmental health and SES

Results

Table 1: Descriptive characteristics (N=29520)

Gender	N (%)
Female	8,906 (30.2)
Male	20,585 (69.7)
Missing	29 (0.1)
Age mean (SD)	5.79 (0.41)
Missing (%)	114 (0.39)
EFSL Status	N (%)
Yes	3,637 (12.3)
No	25,402 (86.0)
Missing	481 (1.6)
Neighborhoods	
Number of neighborhoods	2016
Mean (SD) children per neighborhood	14.64 (14.12)
Mean (SD) EDI Scores	
Physical health & wellbeing	7.02 (2.12)
Social competence	5.71 (2.63)
Emotional maturity	6.13 (1.99)
Language & cognitive development	6.18 (3.01)
Communication skills & general knowledge	4.37 (3.27)

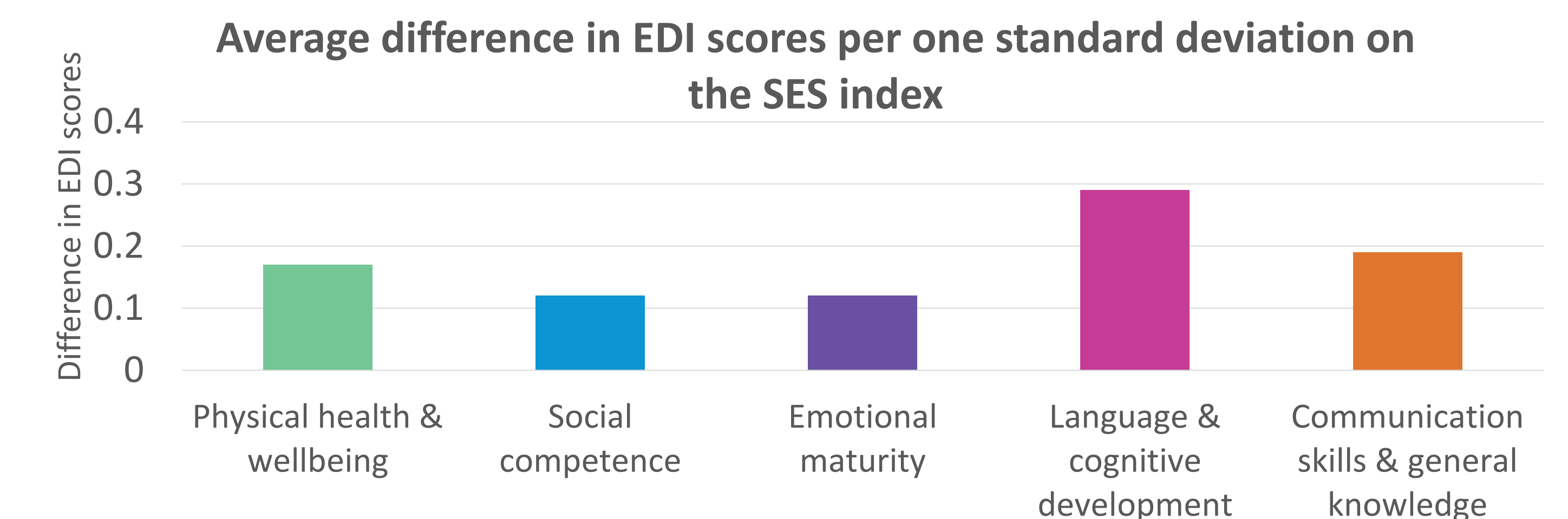
Table 2: Regression coefficients (95% CI) from the final model for each of the five domains of the Early Development Instrument (EDI)

	Physical health & wellbeing	Social competence	Emotional maturity	Language & cognitive development	Communication skills & general knowledge
Age	-0.04 (-0.10 to 0.03)	-0.13 (-0.21 to -0.05)	-0.08 (-0.14 to 0.02)	0.10 (0.01 to 0.18)	-0.13 (-0.24 to -0.02)
Gender (M=0; F=1)	0.14 (0.08 to 0.19)	0.76 (0.69 to 0.83)	0.81 (0.76 to 0.86)	0.13 (0.05 to 0.21)	0.43 (0.33 to 0.53)
EFSL (no = 0; yes = 1)	0.04 (0.04 to 0.12)	-0.10 (-0.20 to 0.01)	0.12 (0.05 to 0.20)	-0.43 (-0.56 to -0.31)	-1.11 (-1.27 to -0.94)
SES z-score	0.17 (0.14 to 0.20)	0.17 (0.13 to 0.20)	0.12 (0.09 to 0.15)	0.29 (0.24 to 0.33)	0.19 (0.14 to 0.24)

The regression analysis was also adjusted for province, year of data collection, and the interaction between province and year of data collection. Regression coefficients were transformed to reflect effects of the predictor variables on untransformed scores.

Discussion

- For every standard deviation increase on the neighborhood-level SES index, EDI scores improve by an average of **0.12 to 0.29 points**



- An average difference of up to **0.68 points** in physical health & wellbeing and social competence can be seen between neighborhoods two standard deviations below and above the mean, comparable to the magnitude of difference in EDI scores between genders
- This investigation is **strengthened** by its use of
 - + population-level data; and
 - + robust statistical techniques that can accommodate the skewed and multilevel nature of EDI data
- Future steps include untangling the effects between family-level and neighborhood-level SES and studying this relationship in subgroups of children according to type of disability (i.e., physical, behavioral, and leaning)