

Using population-level data to explore prevalence and development of children with Autism Spectrum Disorder



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Introduction

Autism Spectrum Disorder (ASD) is the most commonly diagnosed neurological disorder in Canada, with a prevalence estimate of 1 per 94 children diagnosed per year¹.

Early identification of ASD and behaviour profiles common to children with this disorder facilitates access to resources, which is essential for achieving optimal developmental outcomes.

Objectives

To examine the prevalence and development of children with ASD across Canada and 4 provinces (Ontario, Manitoba, Alberta, and British Columbia).

Methods

Early Development Instrument (EDI) data was used:

- Population-based measure of children's developmental health at school entry
- Provides information on 5 domains:
 - Physical Health and Well-Being
 - Social Competence
 - Emotional Maturity
 - Language and Cognitive Development
 - Communication Skills and General Knowledge
- Score below a baseline 10th percent cut-off on any of the 5 domains indicates vulnerability ("poor school readiness to learn").

For all neighbourhoods at pan-Canadian level and in each province, descriptive statistics used to examine:

1. Min, max, mean number of children with ASD
2. Min, max, mean percentage of overall vulnerability
3. Min, max, mean percentage vulnerability on each EDI domain

Prevalence of Children with ASD

Number of children with ASD in:

Canada: 5804
 Ontario: 3074
 Manitoba: 301
 Alberta: 472
 British Columbia: 856

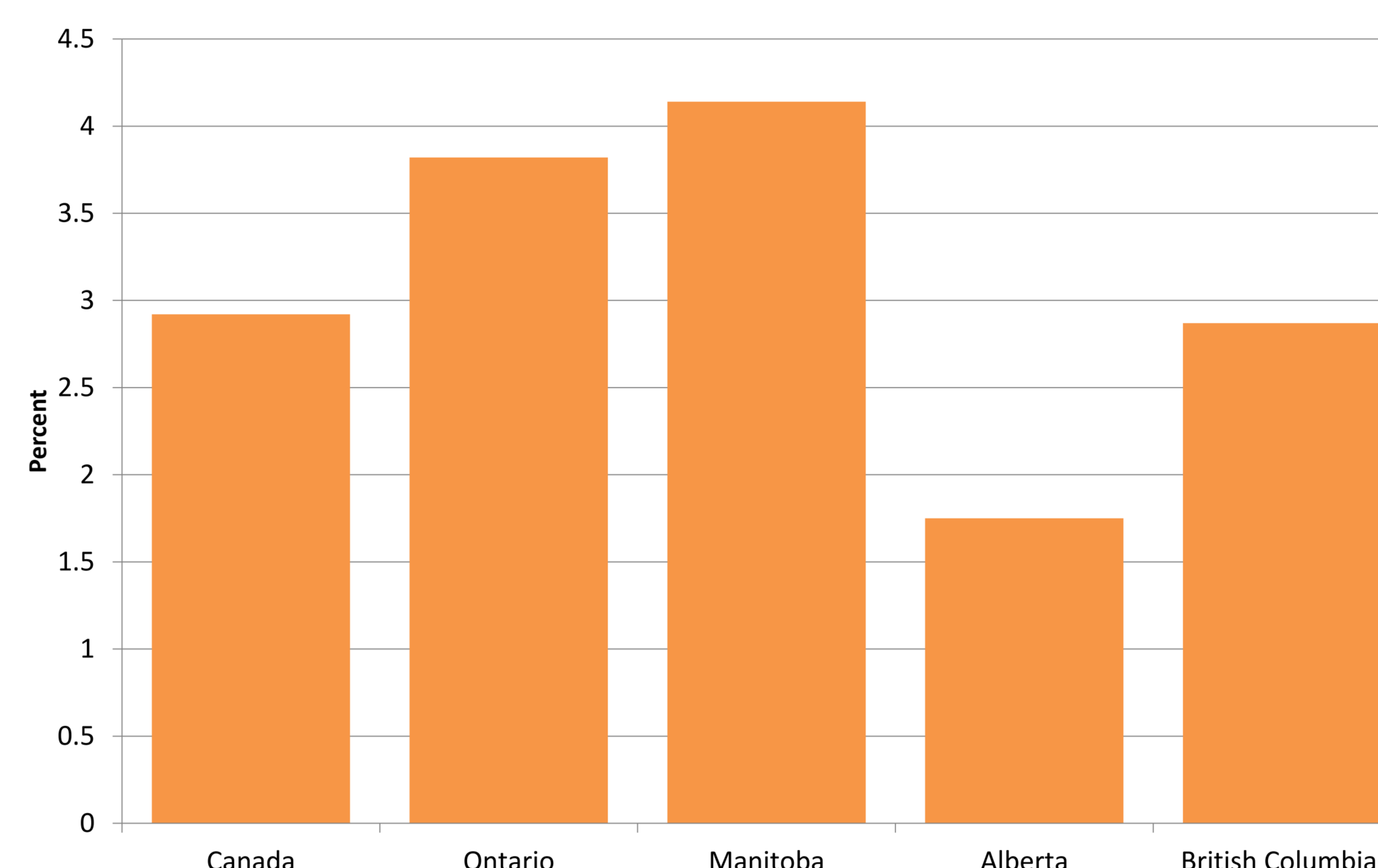


Figure 1: Mean number of children with ASD per neighbourhood

Across Canada and the provinces considered, the number of children with ASD ranges from 0 to 21 per neighbourhood.

Developmental Profile of Children with ASD

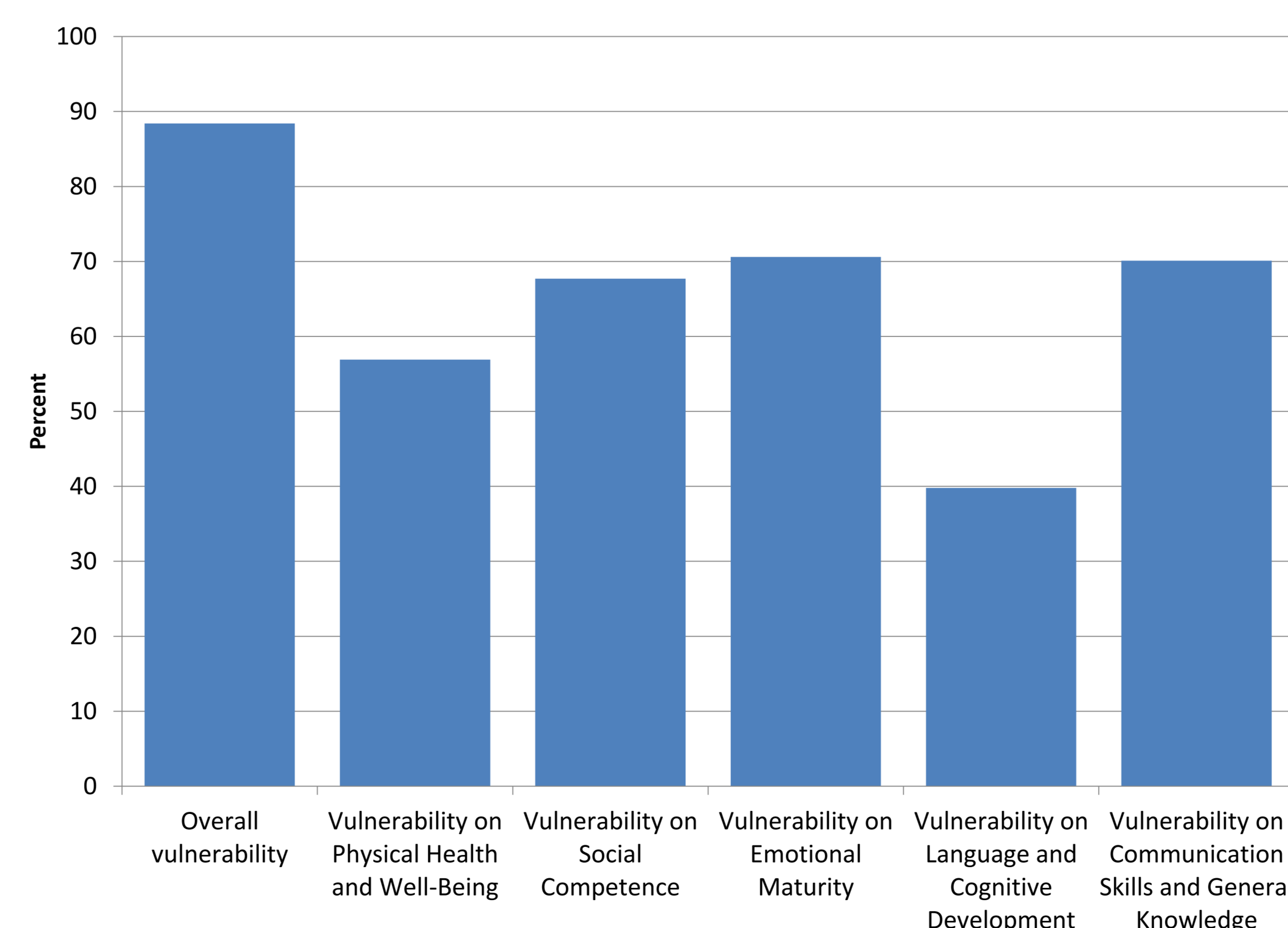


Figure 2: Mean % of overall vulnerability and vulnerability on each EDI domain per neighbourhood in Canada

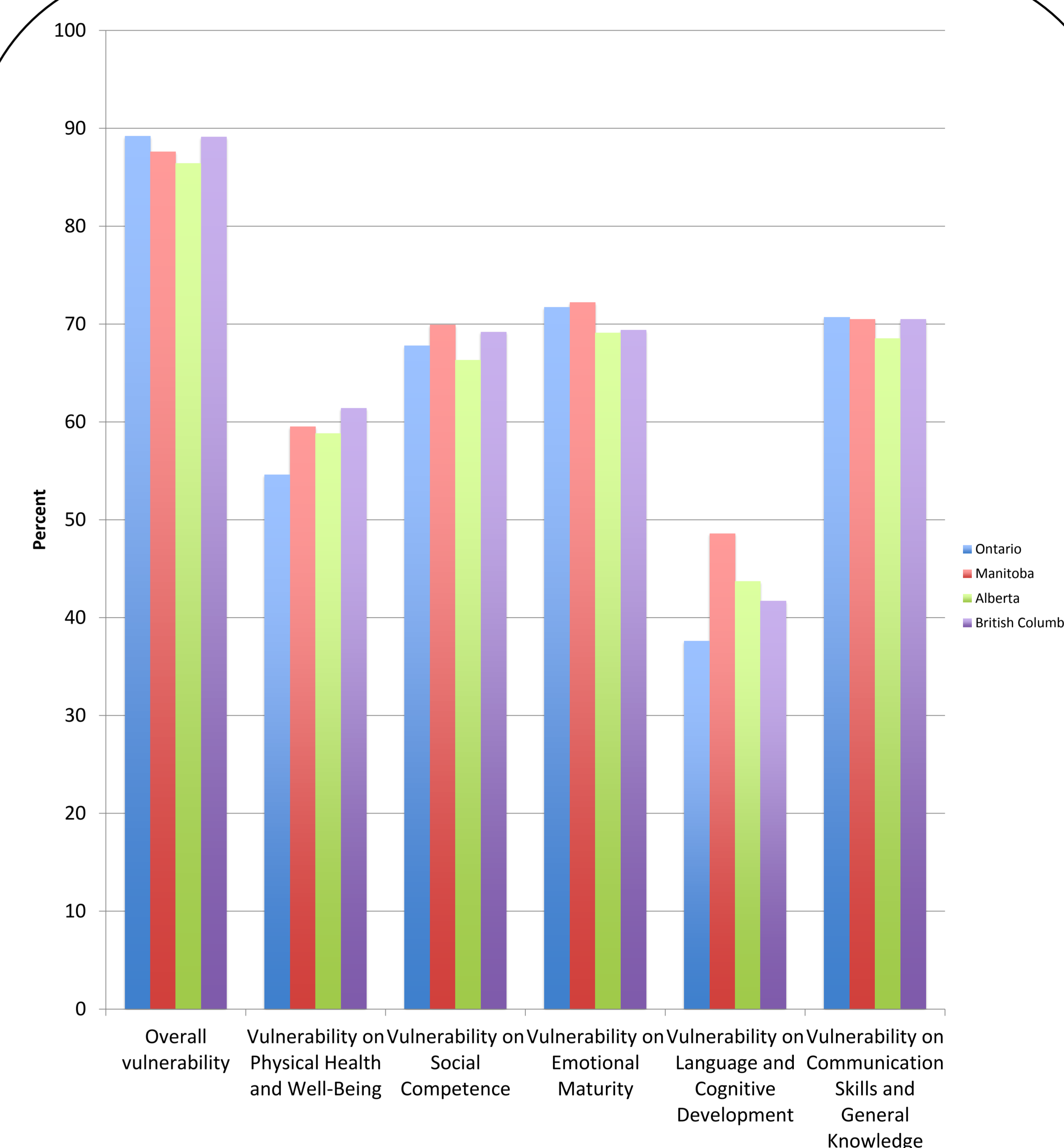


Figure 3: Mean % of overall vulnerability and vulnerability on each EDI domain per neighbourhood in Ontario, Manitoba, Alberta, British Columbia

Across Canada and the provinces considered, the % of overall vulnerability and % vulnerability on each EDI domain ranges from 0 to 100 per neighbourhood.

Conclusion

Pan-Canadian level:

- 3 children with ASD per neighbourhood on average
- A large proportion of these children are developmentally vulnerable, with greatest concerns observed in emotional development

Provincial level:

- Average number of children with ASD per neighbourhood ranges from 2 (Alberta) to 4 (Manitoba)
- Highest proportion of vulnerability is observed in emotional development in most provinces, except British Columbia where this is observed in communication skills and general knowledge

Implications:

- Findings of this project can facilitate customized service planning