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Aboriginal Children and School Readiness

Nazeem Muhajarine

Professor and Chair, Community Health and Epidemiology, University of Saskatchewan

Saskatchewan Population Health and Evaluation Research Unit

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Outline

- Profile of Aboriginal children in Canada
- Aboriginal children and school readiness
- EDI validity among Aboriginal children
- What explains differences in EDI scores between Aboriginal and non-Aboriginal children?

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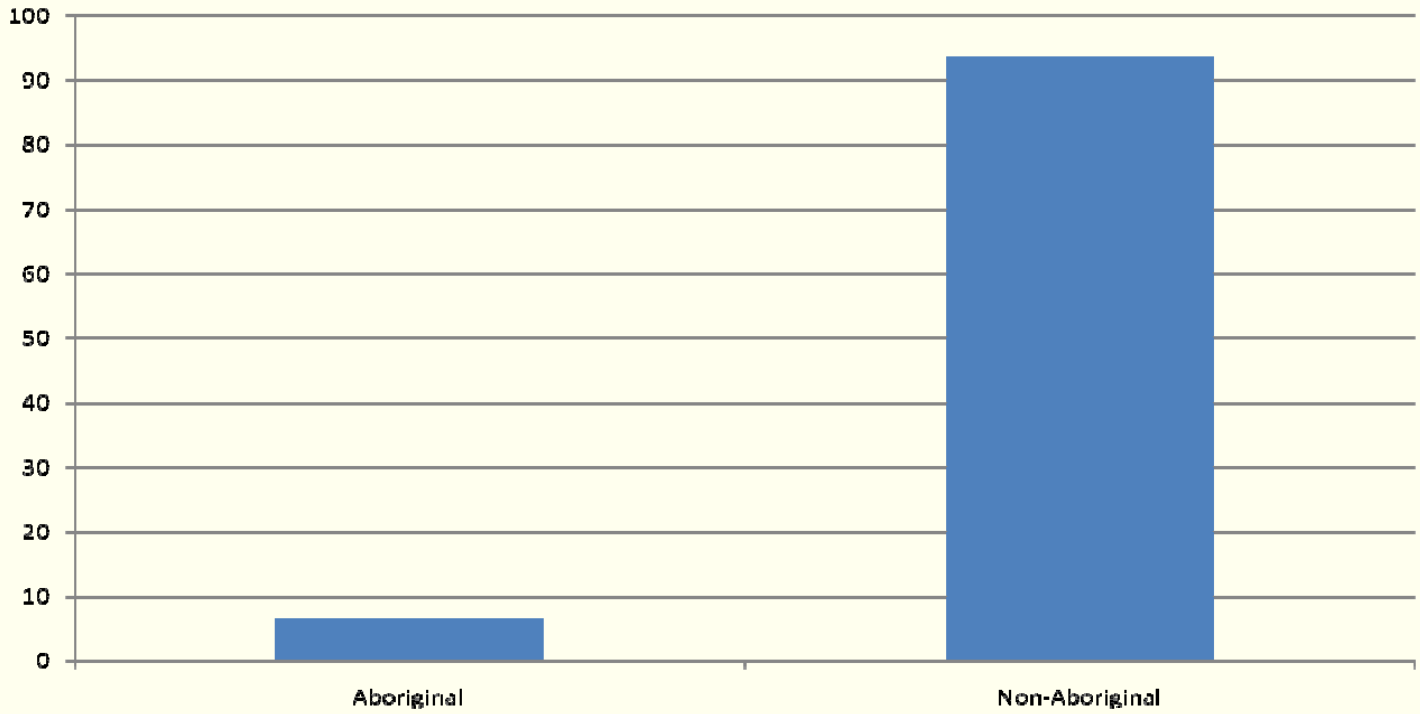
Percentage of Canadian Aboriginal children under the age of 5



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Canadian Aboriginal children population counts and percentage change (aged 5 and under)

	2001	2006	% Change
Aboriginal	102,610	108,895	6.1%
Non-Aboriginal	1,598,870	1,581,495	-1.1%

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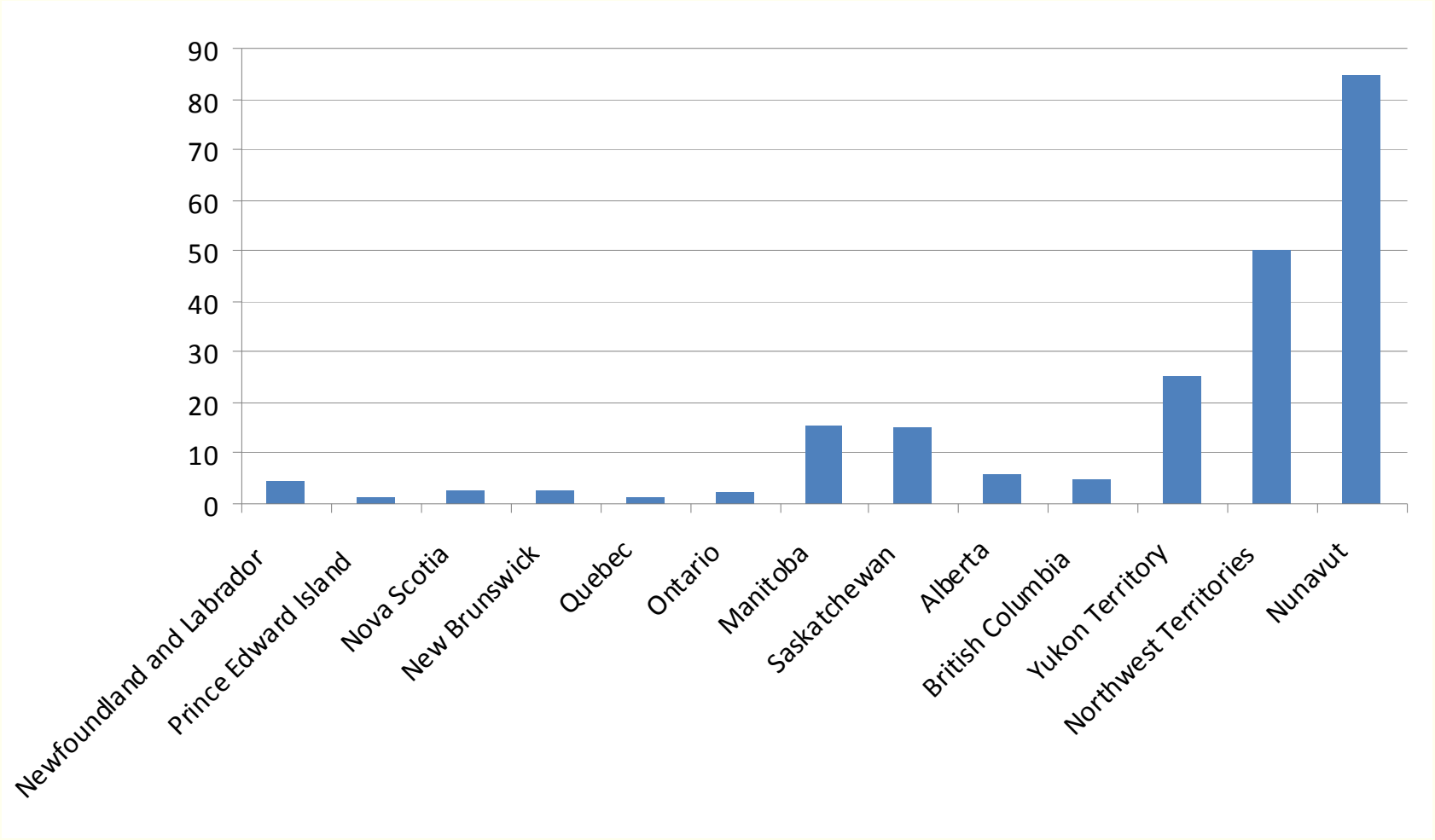
% Aboriginal Population, Canada, 2006



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Aboriginal children and EDI performance

- BC: Of 4,226 Aboriginal children, 39.6% received a low score on at least one of the five EDI domains (Lloyd, 2006).
- Low scores most often obtained on Language and cognitive development, Communication skills and general knowledge domains.
- Consistent disparities for Aboriginal vs. non-Aboriginal EDI performance (Janus, 2002; LaPointe, Ford, & Zumbo, 2007; McTurk et al., 2008).

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Aboriginal children and school readiness in Saskatoon

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Child characteristics, Saskatoon EDI (2001, 2003, 2005, 2009)

	Aboriginal Children	Non-Aboriginal Children	Significance
	n = 1202	n = 5719	
Mean age	5.64	5.65	.333
% male	50.9	51.6	.342
% with special needs	10.8	4.7	.000
% with ESL	0.5	3.6	.000

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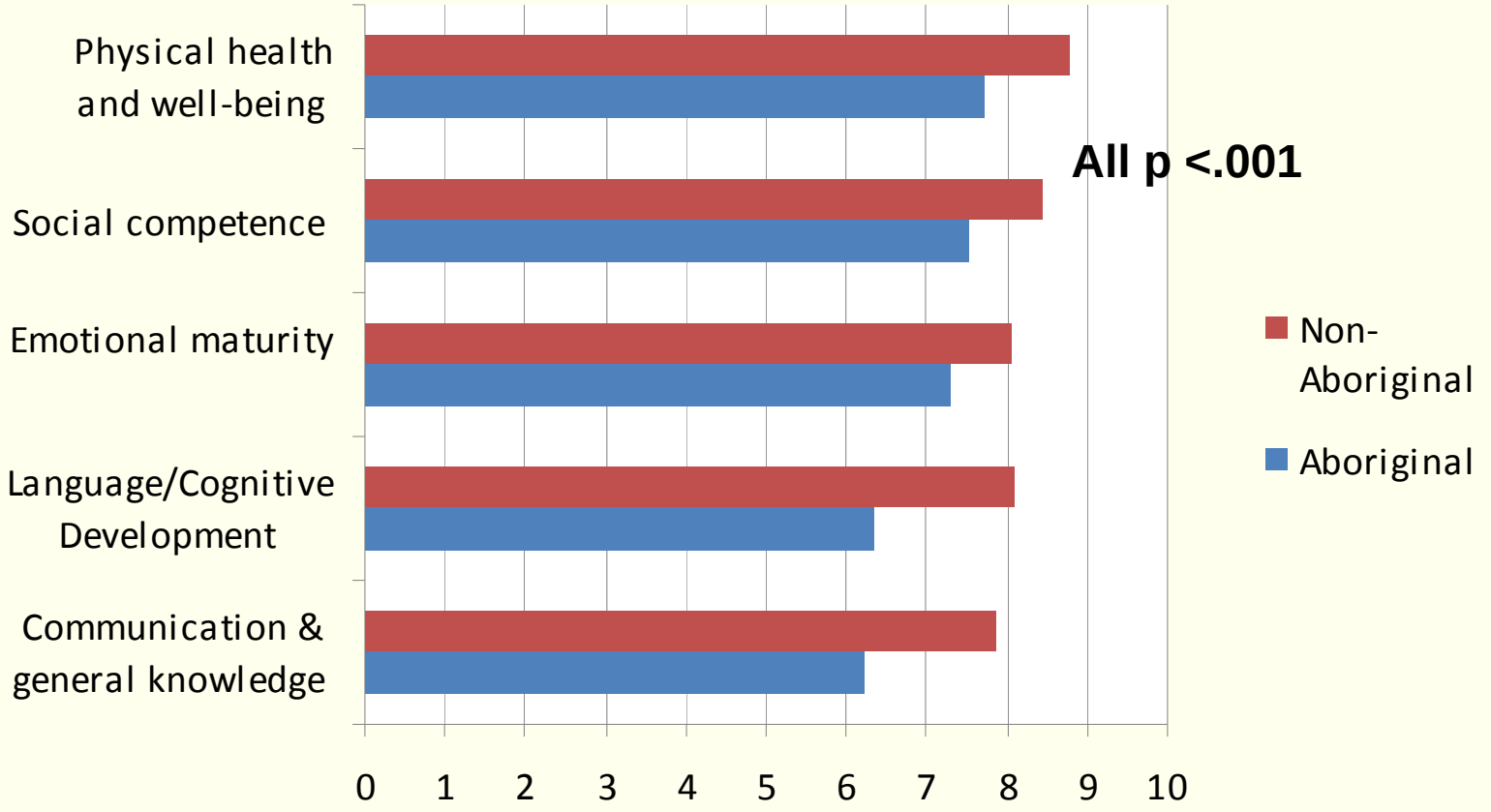
Mean EDI Domain Scores



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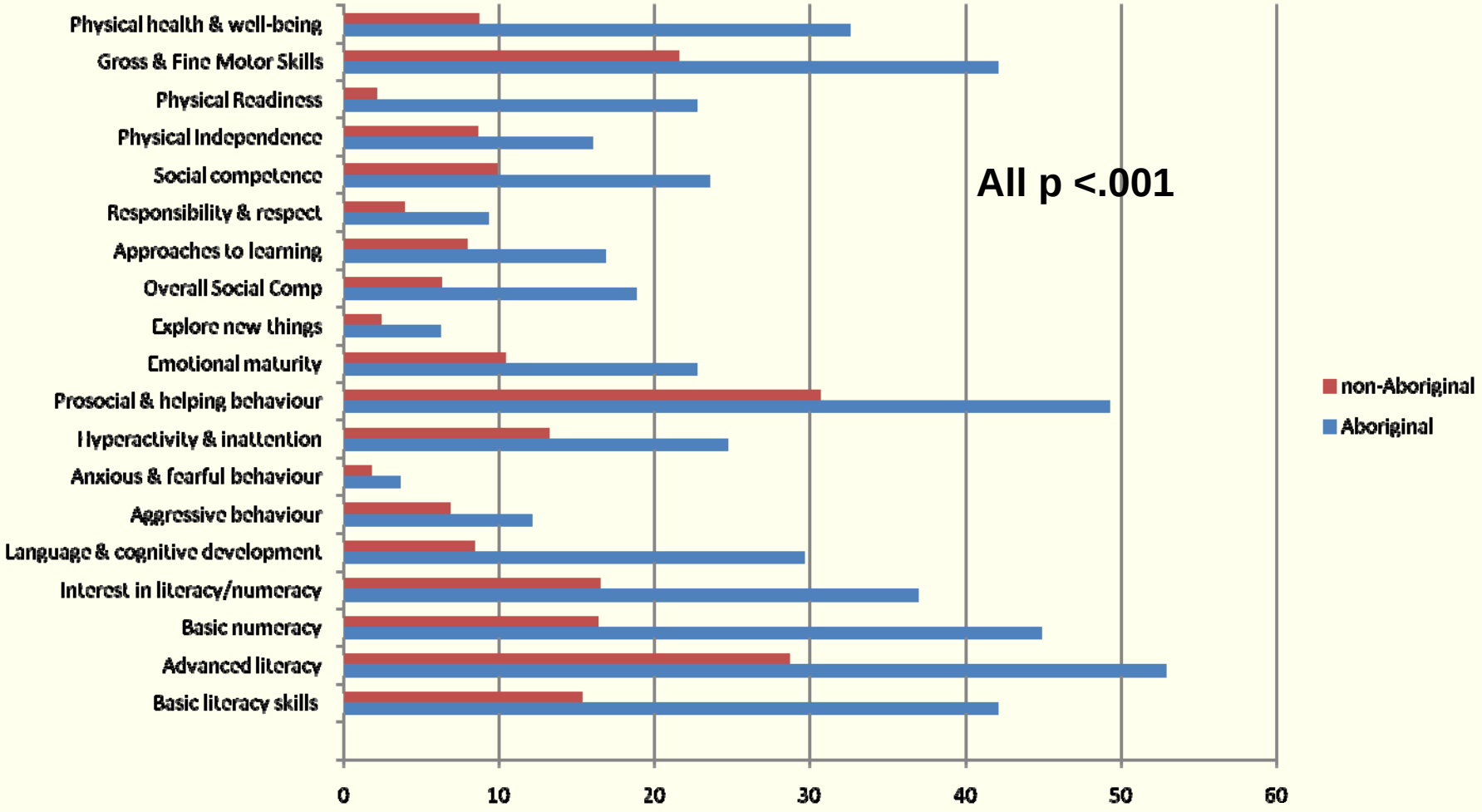
Percentage of low EDI domain and sub-domain scores



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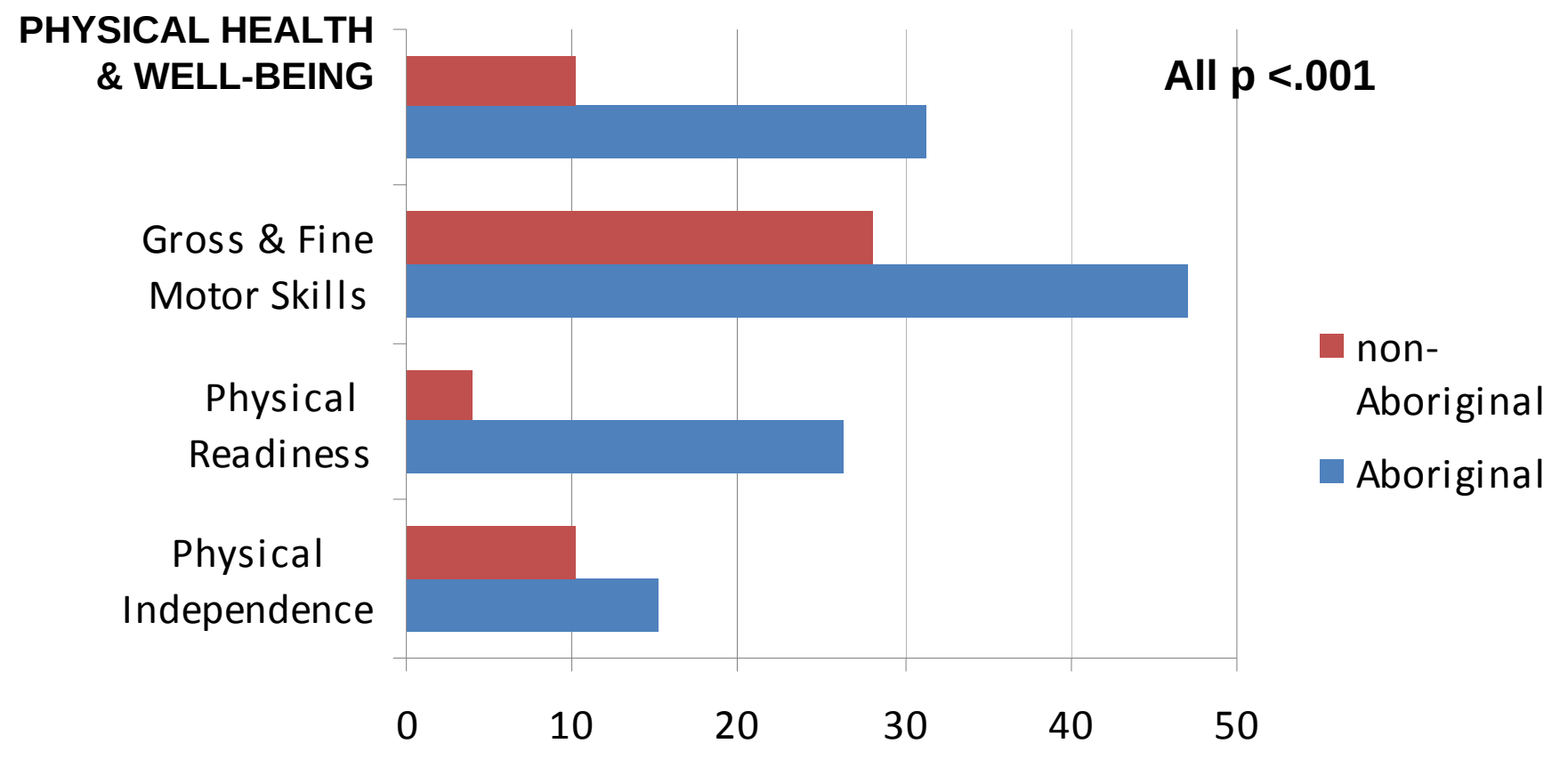
Percentage of low Physical Health and Well-being domain and sub-domain scores



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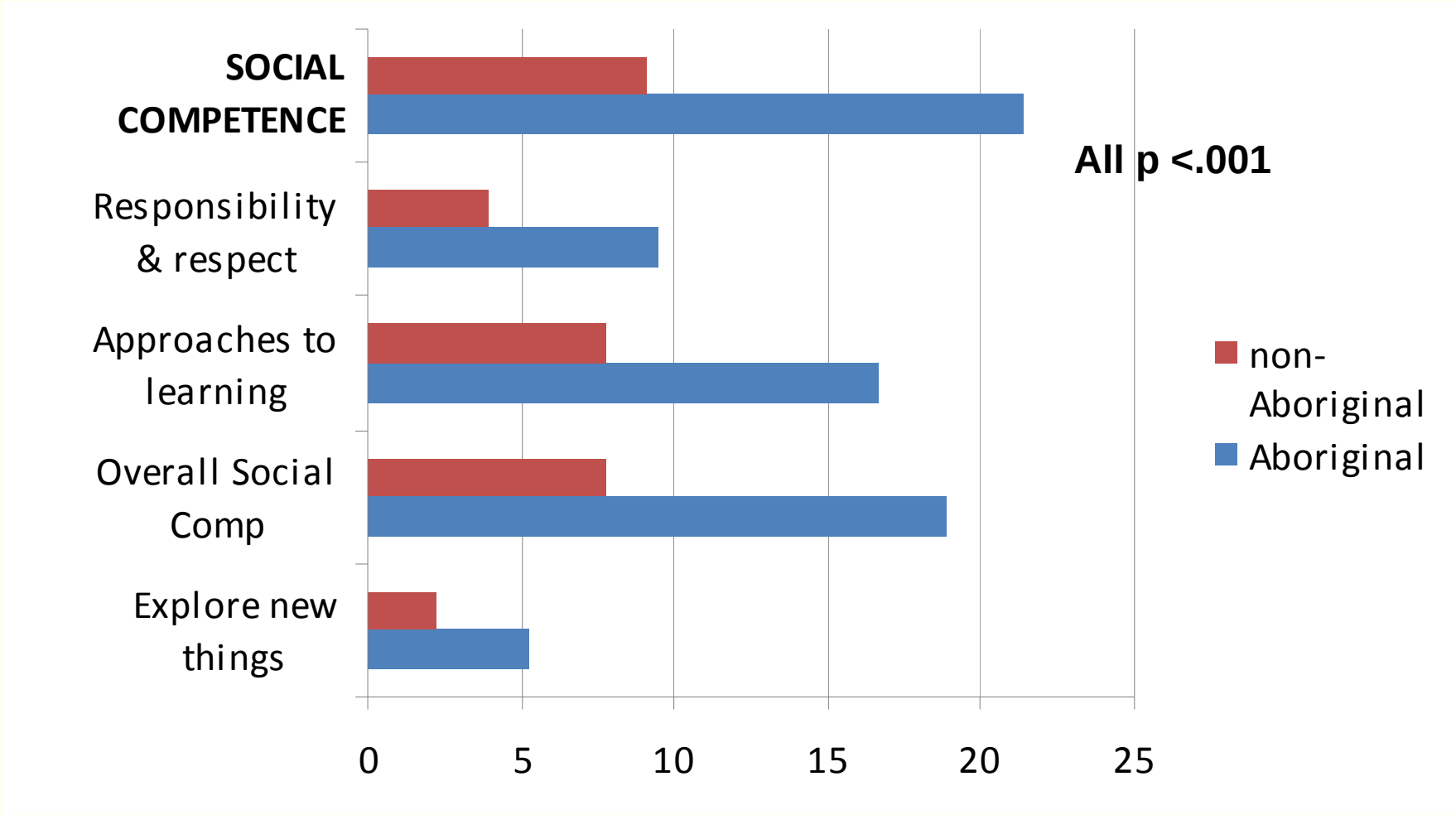
Percentage of low Social Competence domain and sub-domain scores



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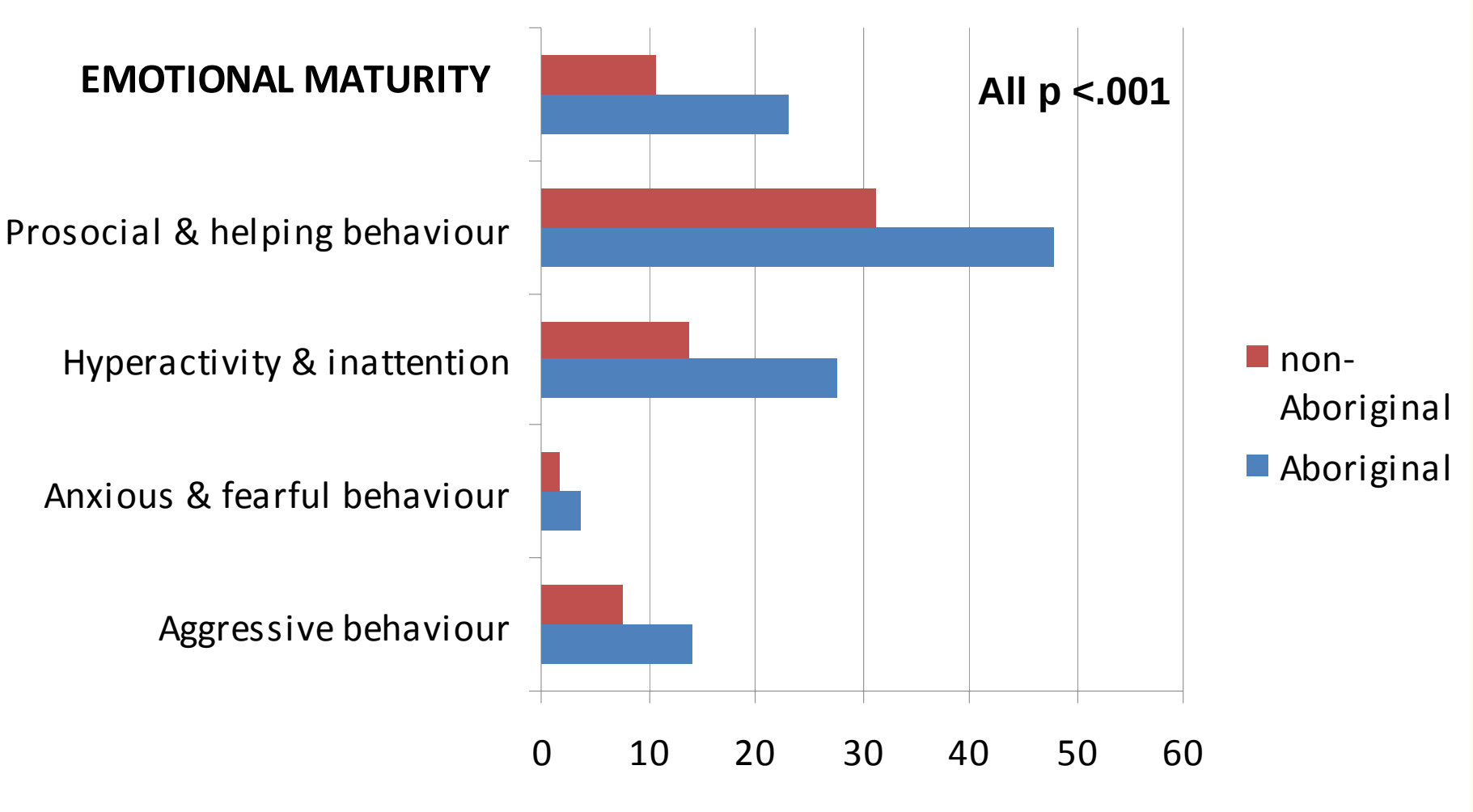
Percentage of low Emotional Maturity domain and sub-domain scores



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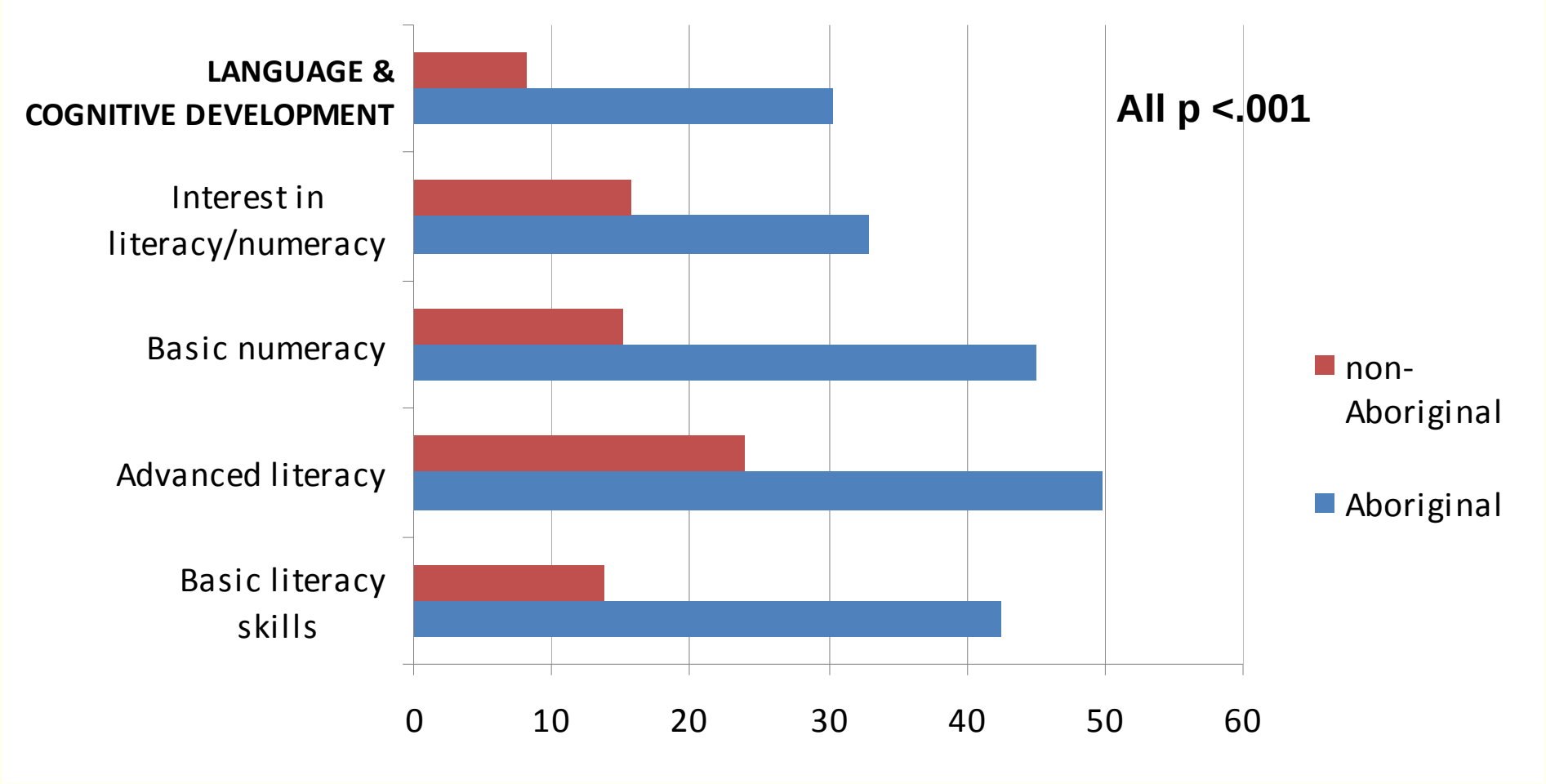
Percentage of low Language and Cognitive Development domain and sub-domain scores



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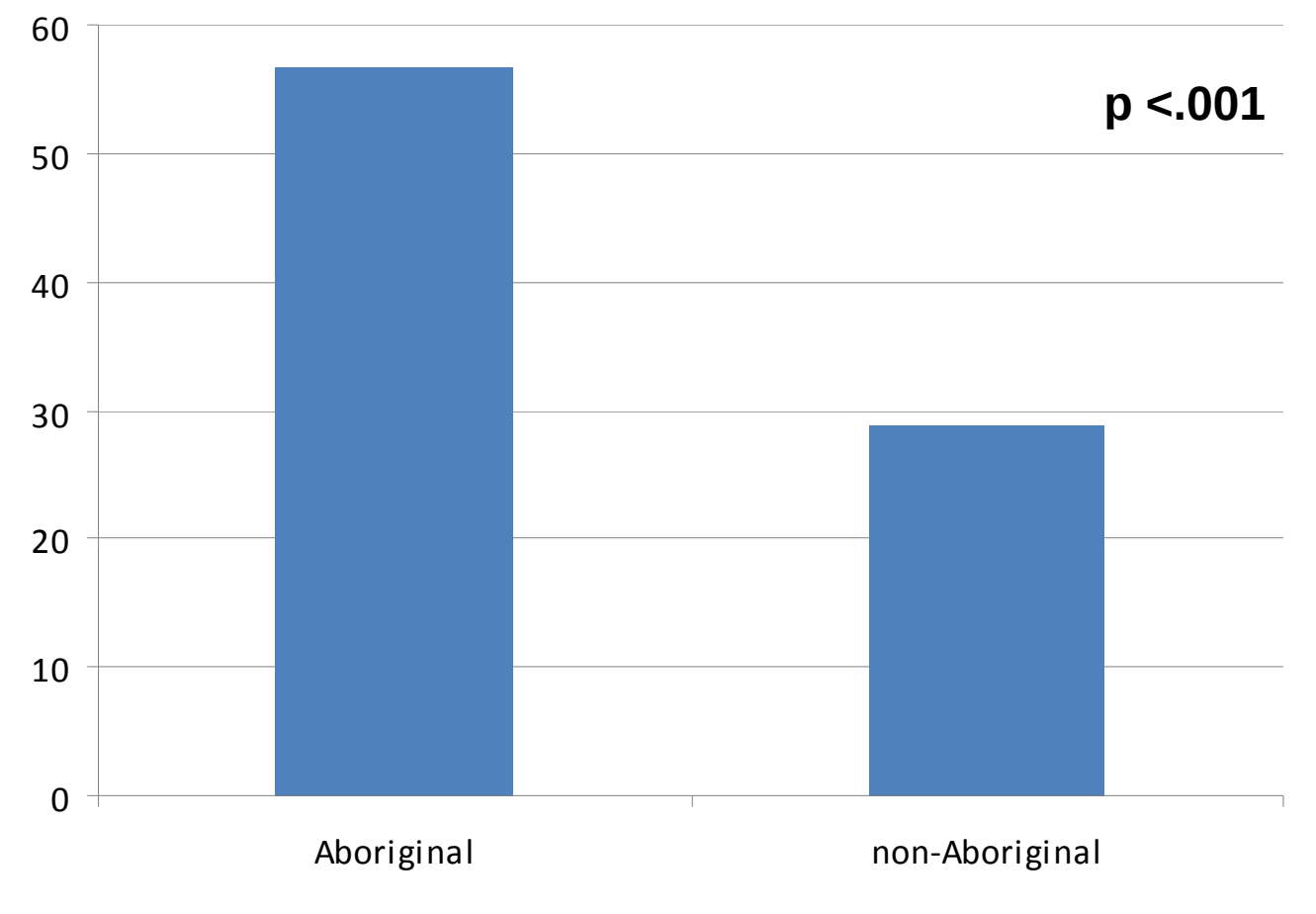
Percentage of low Communication and General Knowledge domain scores



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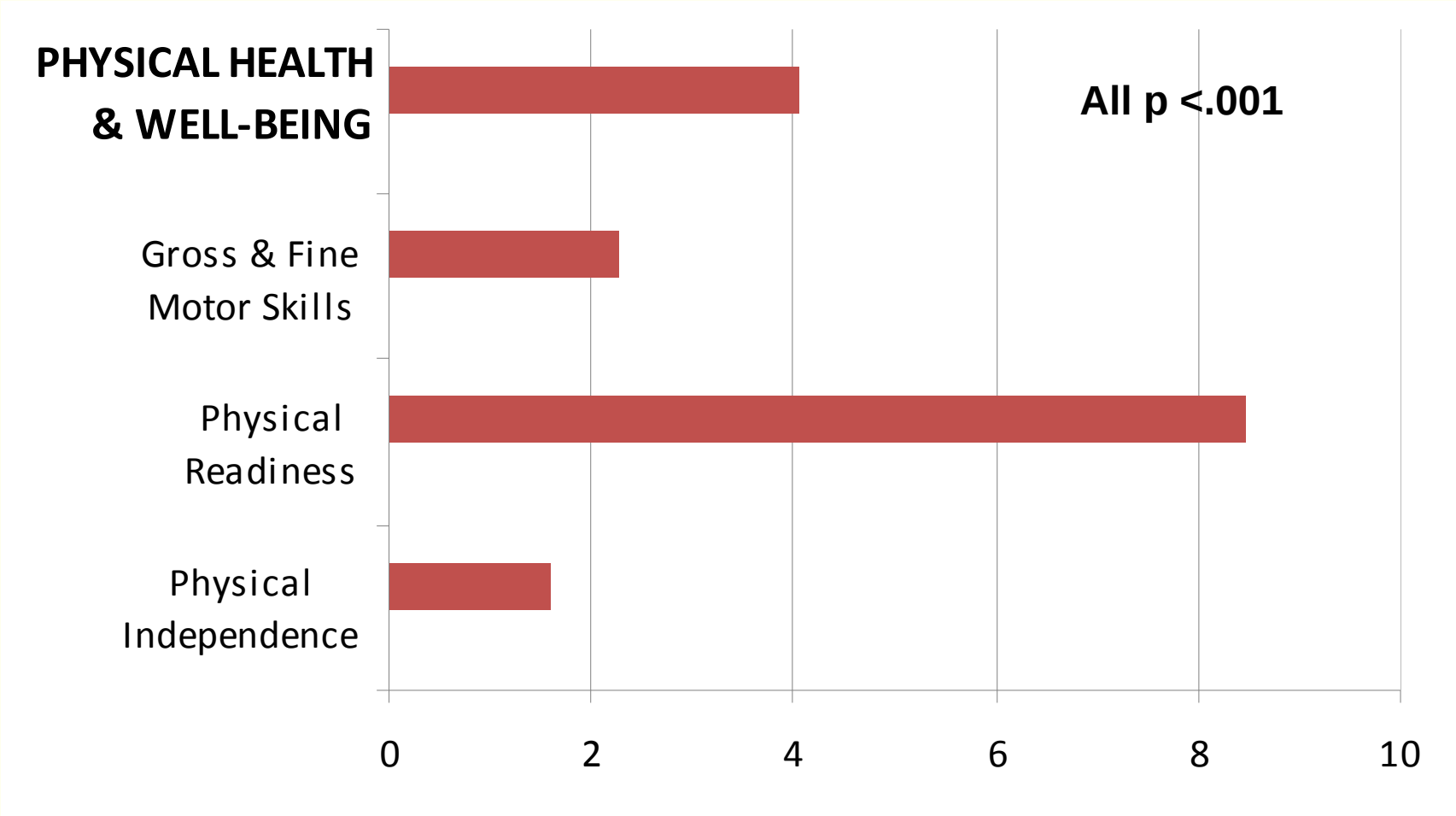
Odds of Aboriginal children scoring low on the Physical health and well-being domain and sub-domains compared to non-Aboriginal children



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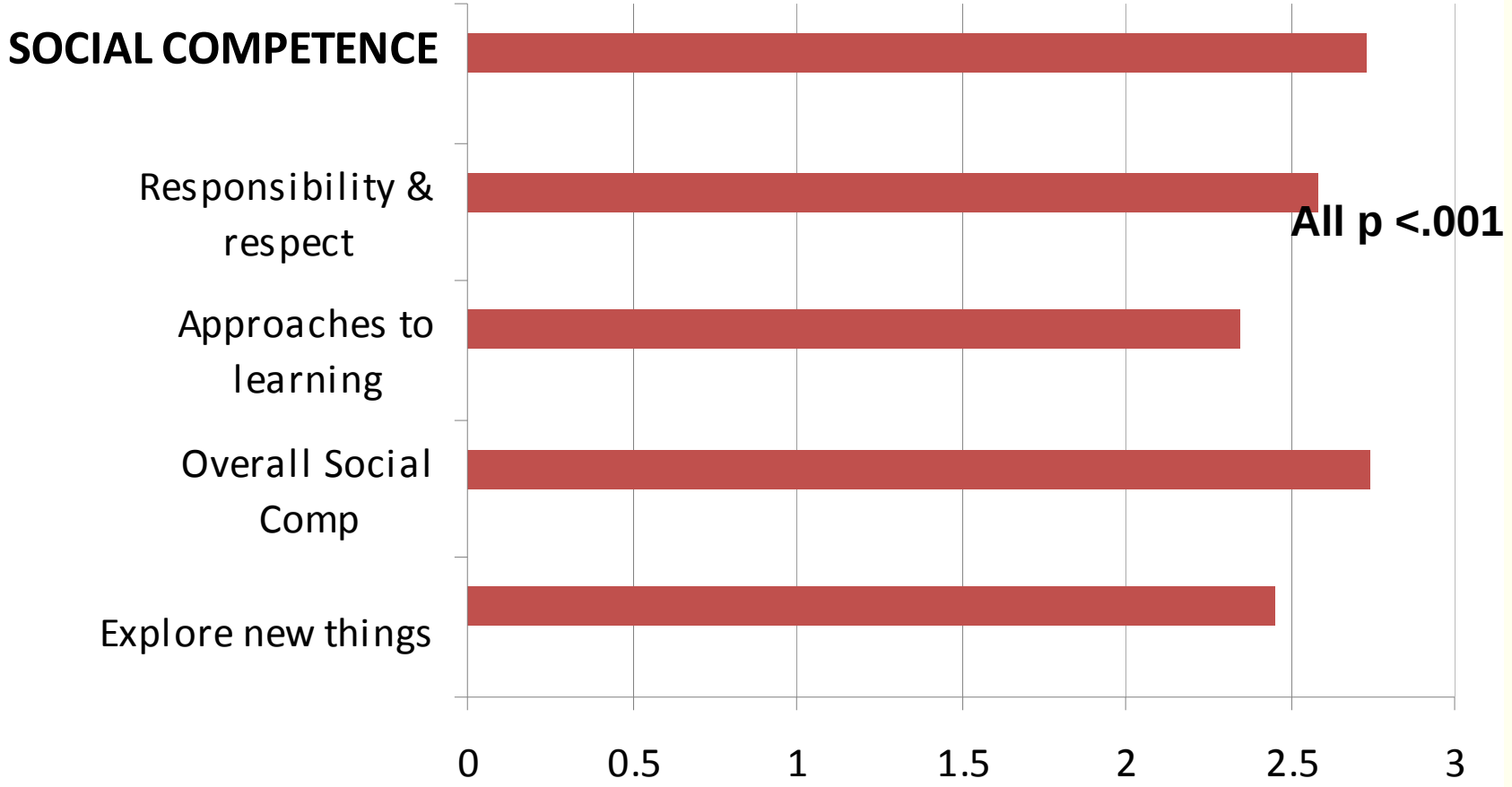
Odds of Aboriginal children scoring low on the Social competence domain and sub-domains compared to non-Aboriginal children



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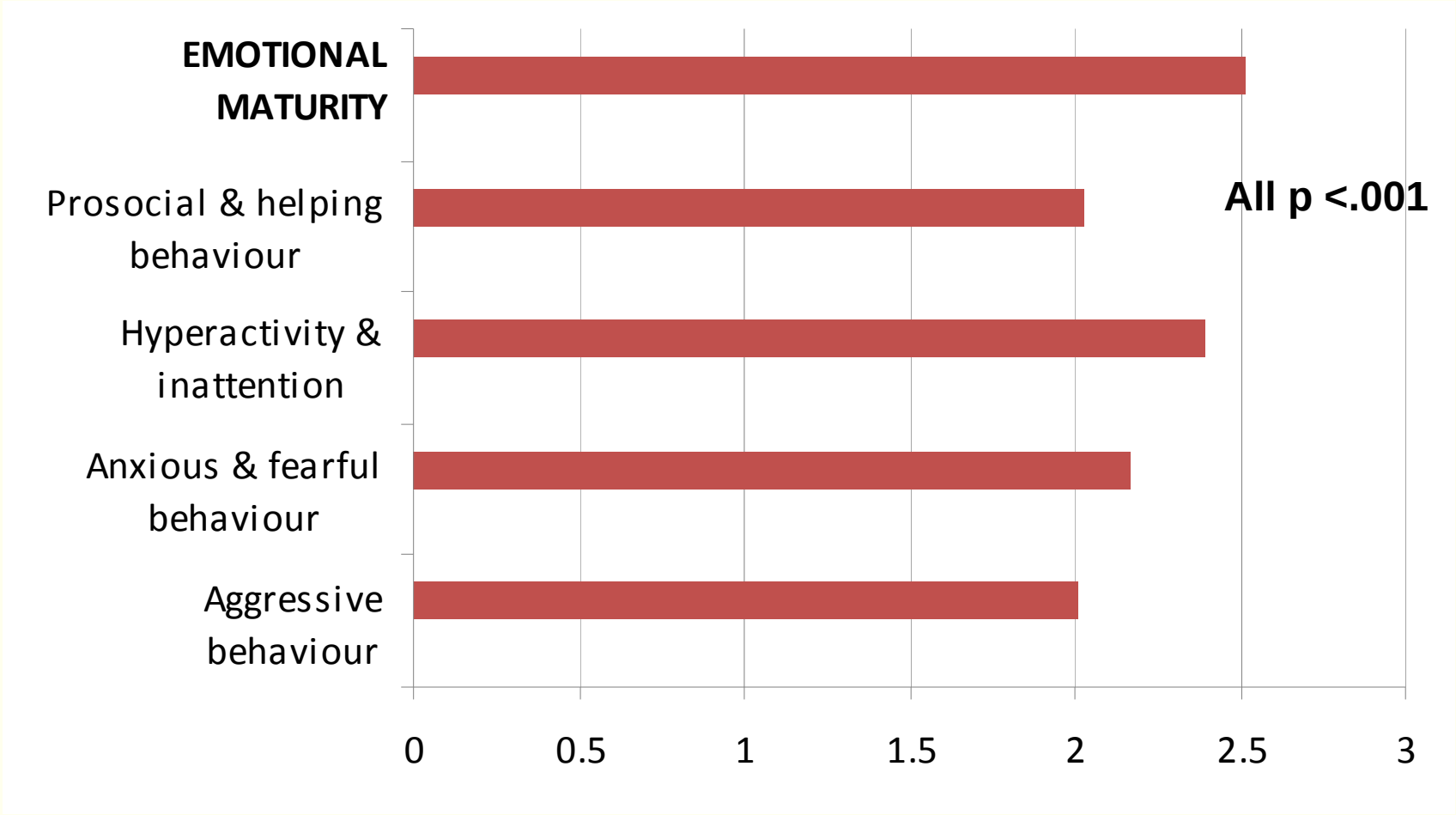
Odds of Aboriginal children scoring low on the Emotional maturity domain and sub-domains compared to non-Aboriginal children



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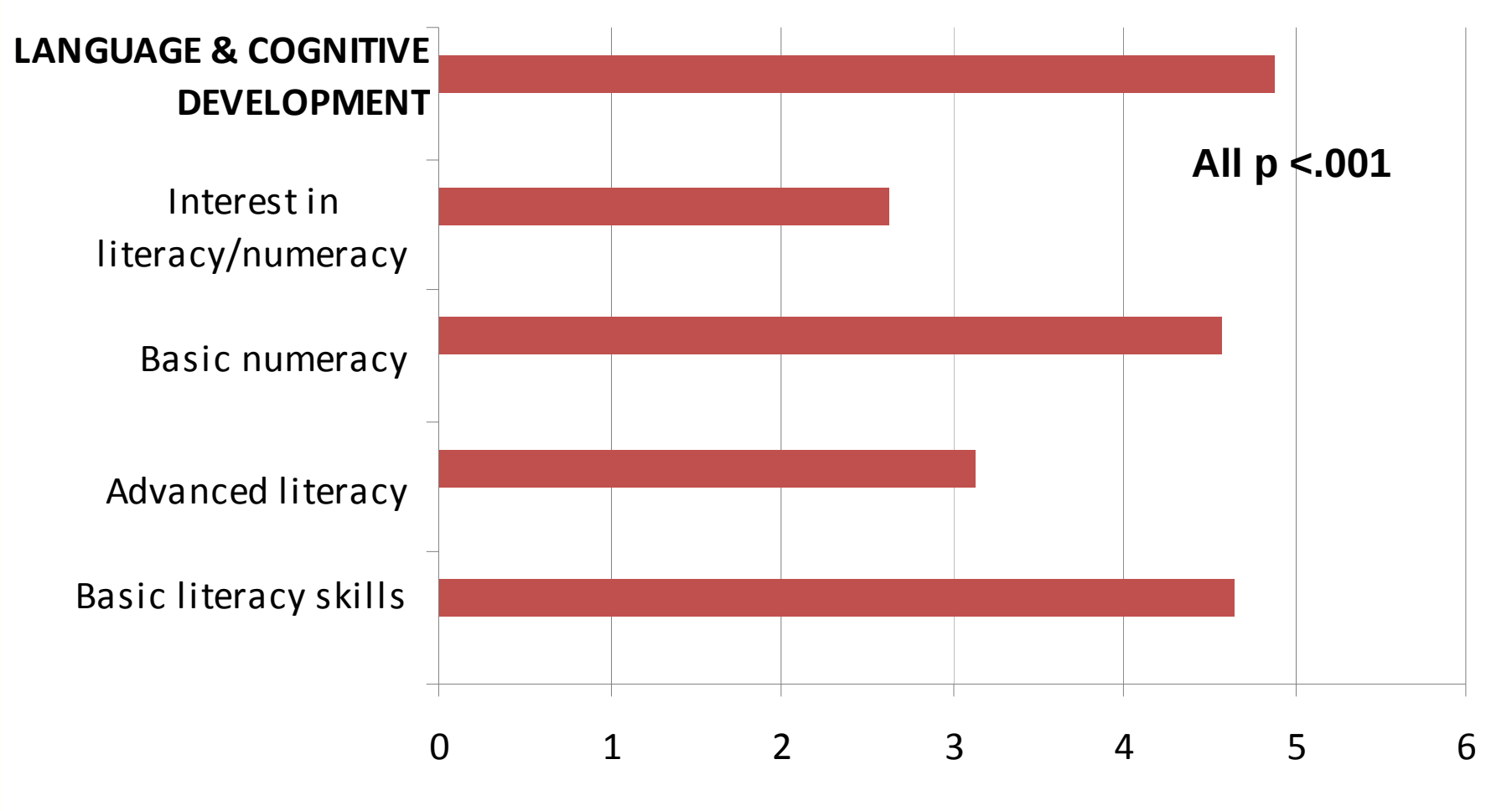
Odds of Aboriginal children scoring low on the Language and cognitive development domain and sub-domains compared to non-Aboriginal children



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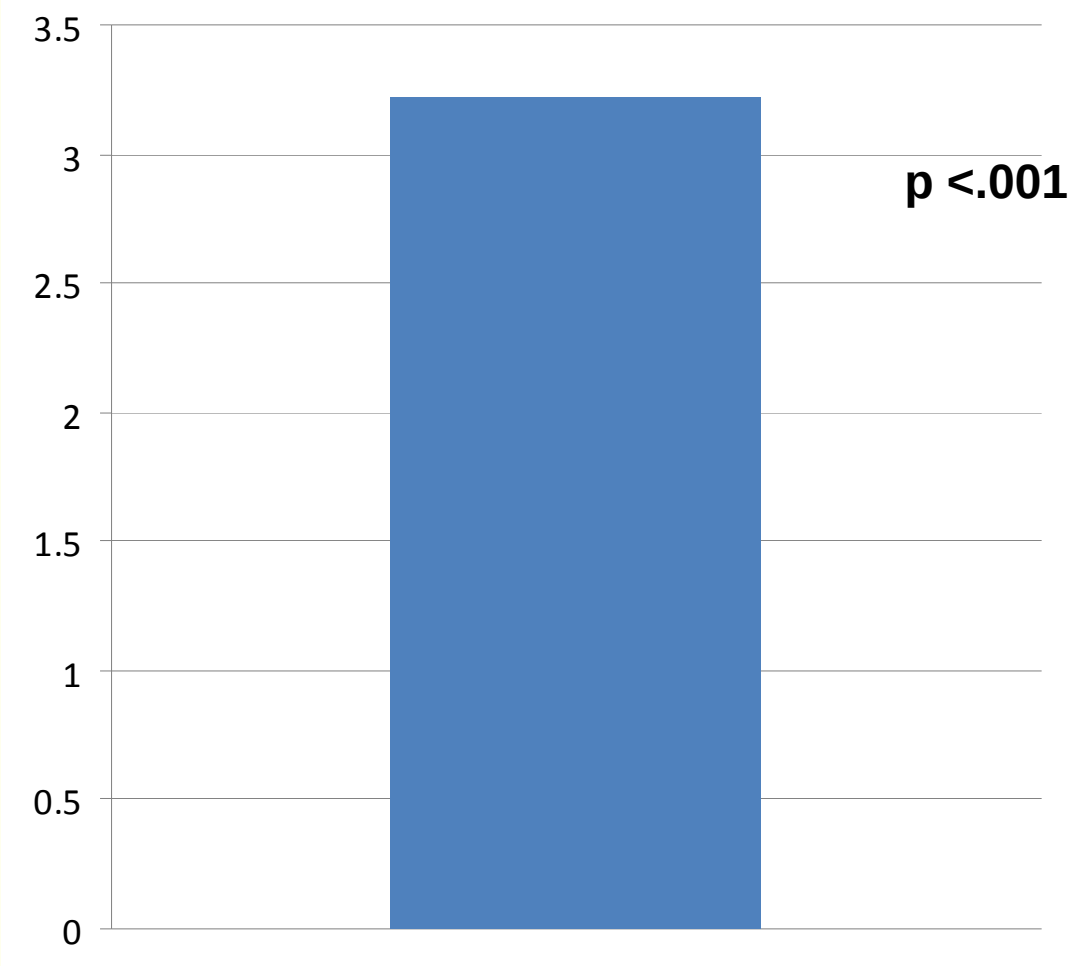
Odds of Aboriginal children scoring low on the Communication and general knowledge domain compared to non-Aboriginal children



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Are disparities reflect to real differences, or measurement issues?

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Aboriginal children and EDI validity

Assessor's Bias?

- No sig differences when teachers rated children who they knew were of Aboriginal ancestry compared to children whose ancestry they were not aware of (Janus et al. 2007).

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Aboriginal children and EDI validity

Item Level	Domain Level	Subdomain Level
Differential item Functioning (DIF) was not present for any of the EDI items.	No bias found when compared to external measures of child dev; sig domain differences observed between matched groups.	Similar distributions of low sub-domain scores found between Aboriginal and non-Aboriginal groups.
Guhn, 2007	Janus, 2002	Muhajarine et al., unpublished

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Assessing EDI validity among Aboriginal children at the sub-domain level

Key questions:

- Are the distributions of sub-domains in which children are likely to under-perform similar between Aboriginal and non-Aboriginal children?
- Is EDI performance similar for Aboriginal and non-Aboriginal groups in relation to child characteristics?

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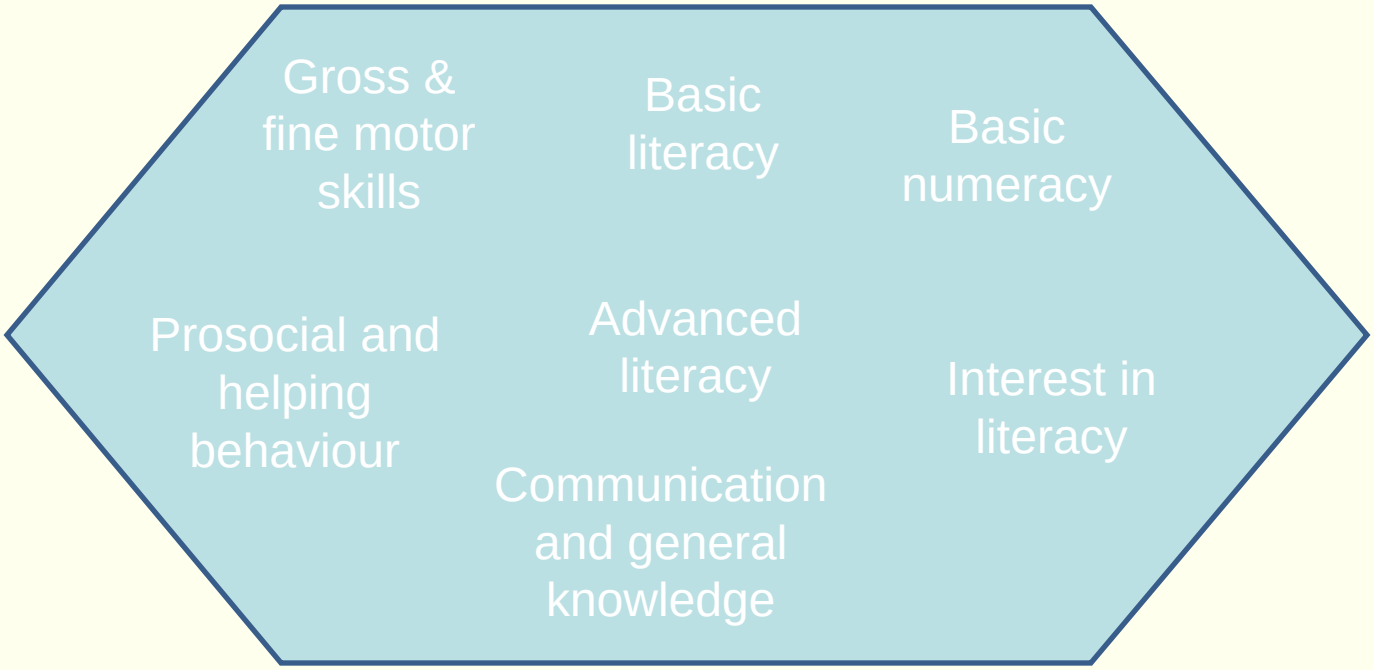
Low sub-domain cluster

- K-means analysis identified the cluster of sub-domains children were likely to score low on
- Identical cluster emerged for both Aboriginal and non-Aboriginal children:



Final Cluster Centers from the K-means analysis

Subdomain	Aboriginal	Non-Aboriginal	Total
Physical readiness	.41	.12	.21
Physical independence	.28	.32	.29
→ **Gross & fine motor skills**	**.75**	**.73**	**.73**
Overall social competence	.38	.32	.33
Respect & Responsibility	.19	.16	.17
Approaches to learning	.36	.35	.34
Explores new things	.11	.10	.10
→ **Prosocial & helping behaviour**	**.74**	**.68**	**.70**
Anxious & fearful behaviour	.08	.06	.06
Aggressive behaviour	.22	.20	.20
Hyperactivity & inattention	.49	.44	.45
→ **Interest in literacy/numeracy**	**.84**	**.58**	**.66**
→ **Basic literacy**	**.64**	**.60**	**.60**
→ **Advanced literacy**	**.85**	**.70**	**.75**
→ **Basic numeracy**	**.82**	**.60**	**.68**
→ **Comm & general knowledge**	**.86**	**.78**	**.81**

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EDI performance in relation to Child Characteristics

- Low sub-domain cluster variable
  - Children scoring low in in *all* sub-domains derived through the k-means analysis were coded as “challenges exist”
- Multiple Challenges Index
  - Indicator of poor functioning
  - Children experiencing challenges in 9 or more sub-domains (equivalent to three or more domains) were coded as “multiple challenges exist”

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EDI performance in relation to Child Characteristics—2001-2009

Factor	B	SE	OR	CI for OR		*p*
				Lower	Upper	
Model 1, Dependent variable = Multiple Challenge Index						
Aboriginal status	1.220	.116	3.388	2.701	4.251	<.001
Gender	.706	.120	2.025	1.600	2.564	<.001
Low number of special skills	-.922	.169	.398	.285	.554	<.001
Number of special problems	1.037	.049	2.820	2.560	3.107	<.001
Model 2, Dependent variable = Derived Sub-domain Cluster						
Aboriginal status	1.080	.132	2.946	2.273	3.818	<.001
Gender	.613	.138	1.845	1.408	2.417	<.001
Low number of special skills	-1.545	.309	.213	.116	.391	<.001
Number of special problems	.793	.049	2.210	2.007	2.434	<.001

Conclusions

Similar low sub-domain distributions and indicate:

- No presence of an assessor's bias
- EDI is an equivalent measure between Aboriginal and non-Aboriginal children
- Disparities reflect real group differences

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What factors explain differences in school readiness?

- Family characteristics
  - Parent-child relationships
  - Home learning environments
  - Parental understanding of classroom learning
  - Familial support
  - Maternal marital status
  - High levels of household income
  - Maternal educational

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What factors explain differences in school readiness?

- Contextual factors
  - Poverty
  - Low neighbourhood resources
  - Residential mobility
  - Food scarcity
  - Sense of community
  - Unemployment rates

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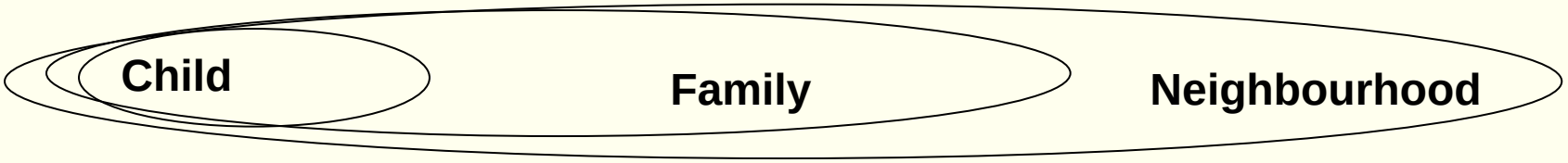
Children are Ready for School

I. Good Health	II. Supportive Social and Cognitive Environments	III. Safe, Strong Neighbourhoods
IA. Healthy, wanted births	IIA. Strong bonds with primary caretaker and supportive home	IIIA. Supportive neighbourhoods
IB. Health development on track	IIB. High-quality child care and early education	IIIB. Family-friendly physical environment
	IIC. Family connected to responsive networks and services	IIIC. Responsive, effective schools
	IID. Family economically successful	



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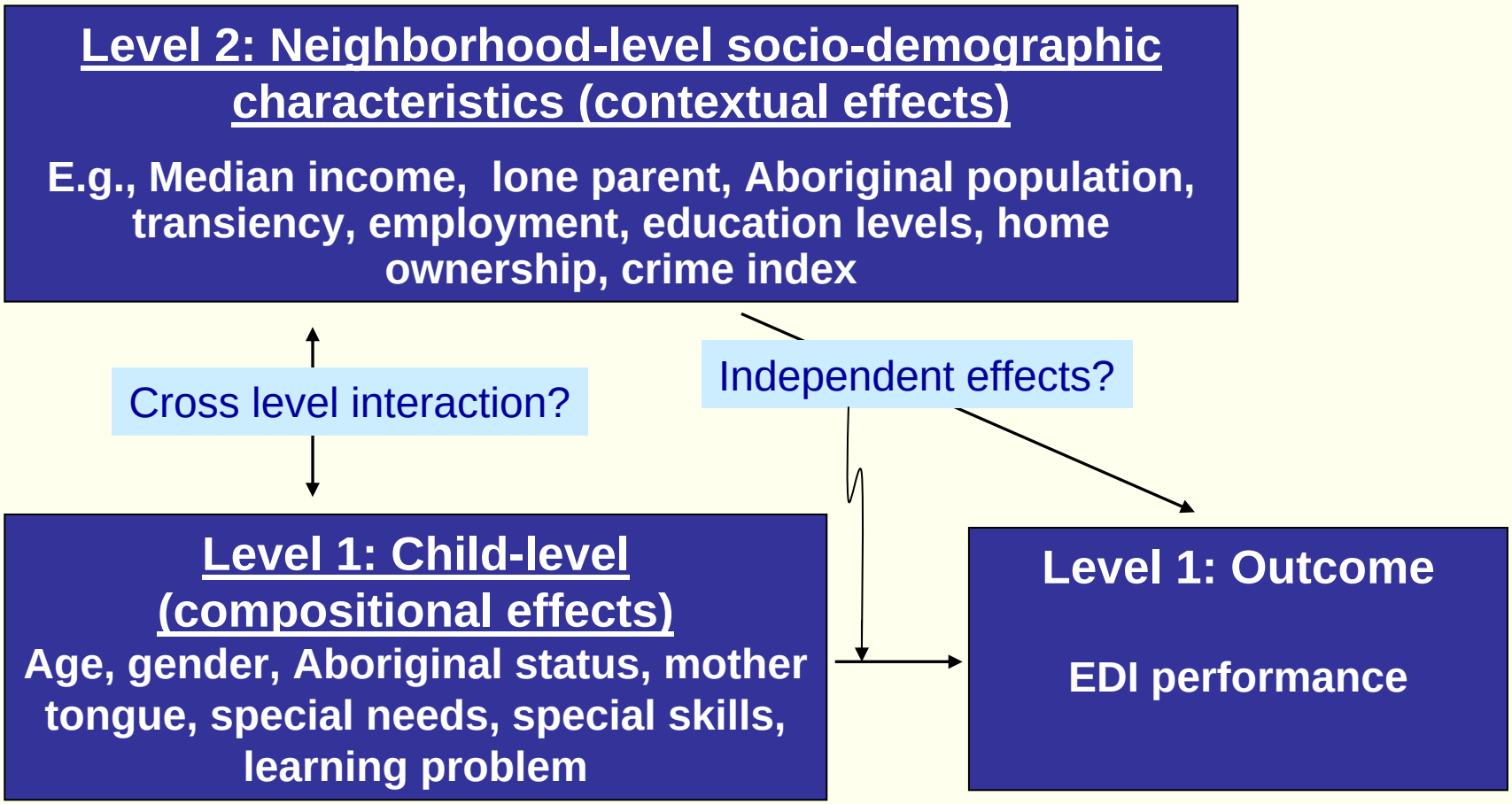
Methodology overview



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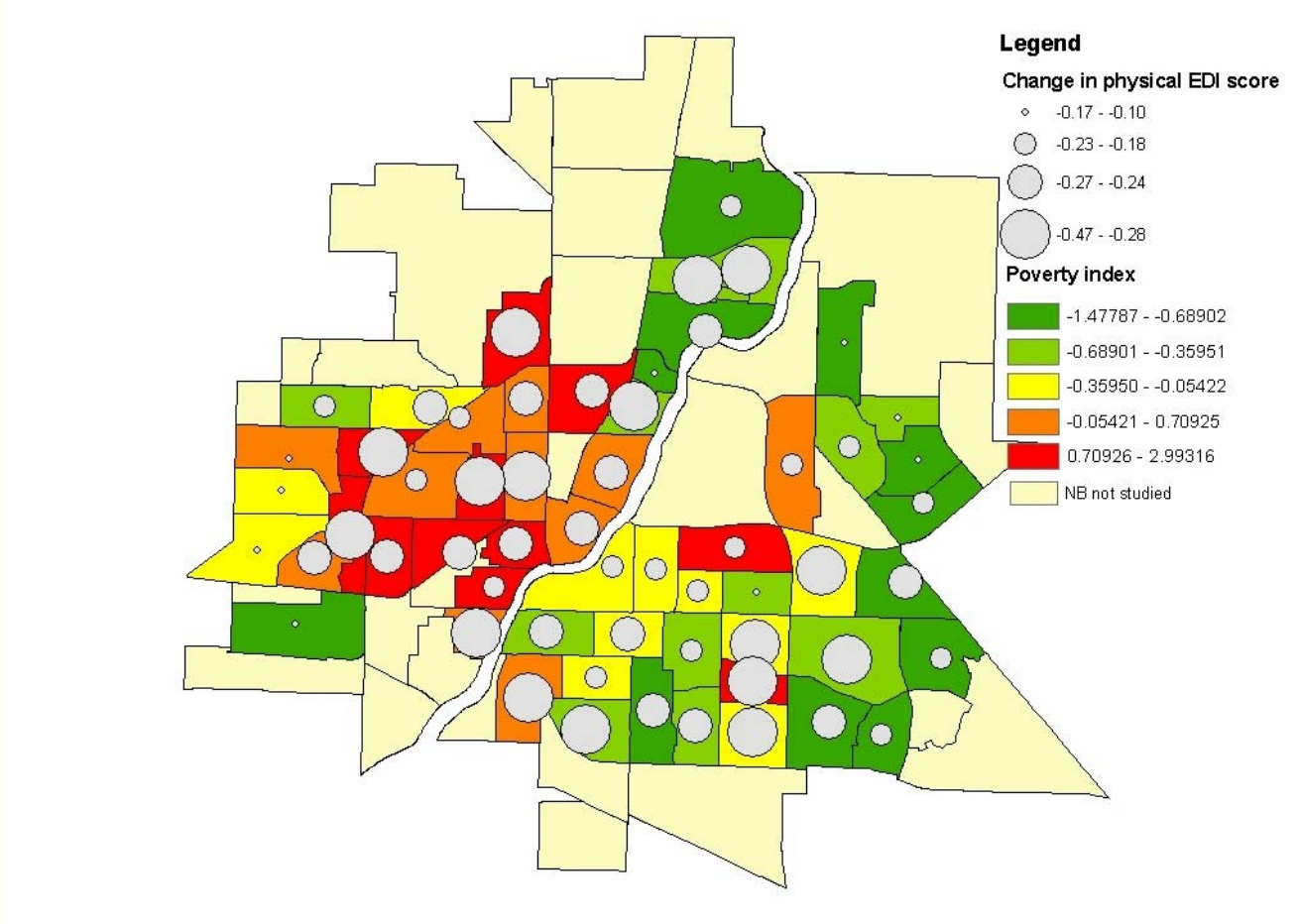
Children in poor neighbourhoods showed greater decline in EDI Physical Health and Well-being over time (from 2001 to 2005)



Notes: polygons represent Saskatoon neighbourhoods; green → red represent well-off to poor neighbourhoods; ○ → ◯ represent greater decline of PHWB; multilevel analysis using HLM

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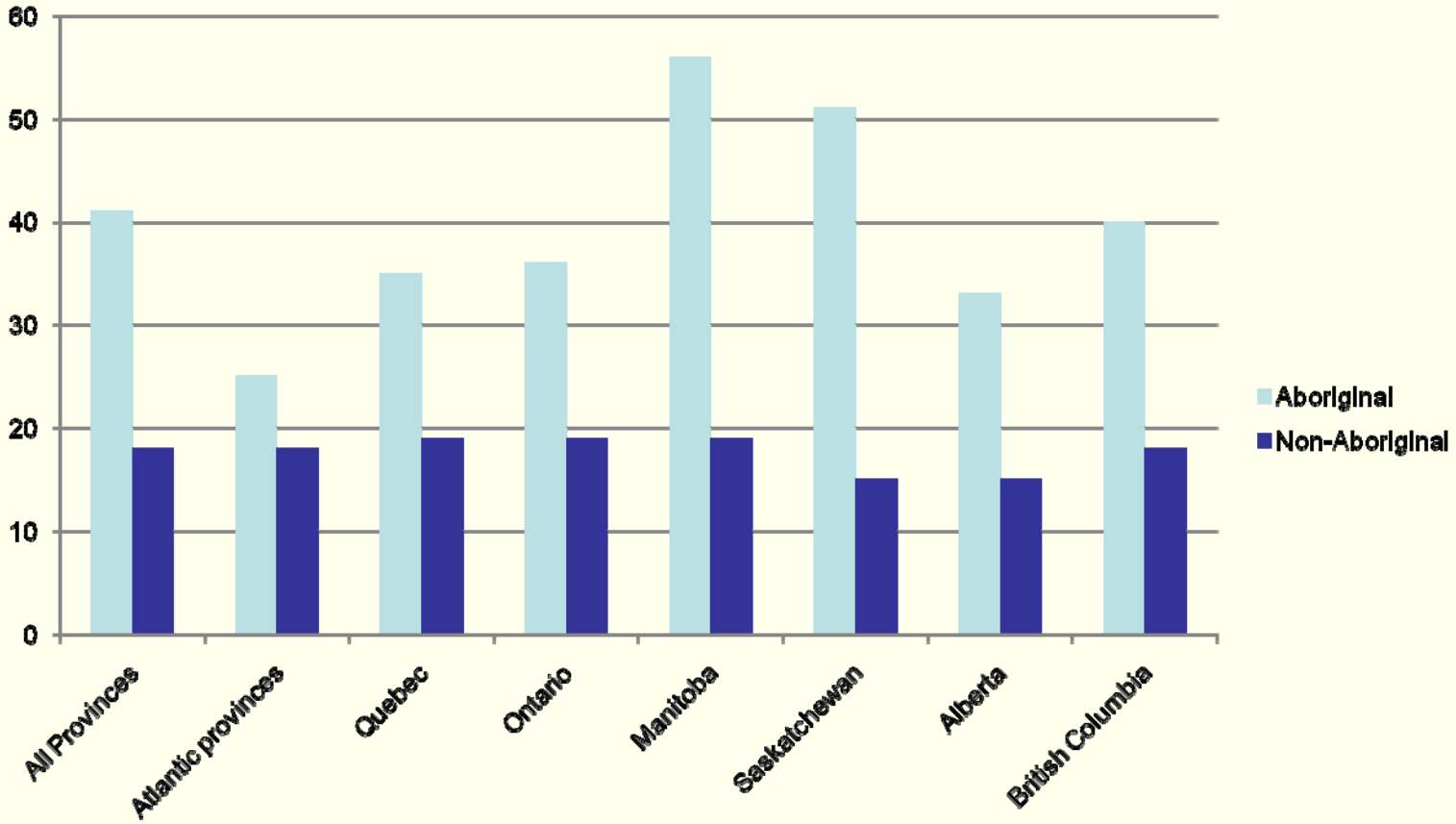
Percentage of children under six years of age living in low-income families



Source: Statistics Canada. Aboriginal Children's Survey, 2006: Supporting Data Tables (2008).

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Education levels among the Aboriginal population in Canada (aged 25-34)

Education level	Aboriginal population (%)	Aboriginal women (%)	All of Canada(%)	Canadian women (%)
No certificate, diploma or degree	**31.9**	**28.9**	**10.8**	**9.2**
High school certificate or equivalent	26.2	26.1	22.5	20.1
Apprenticeship or trades certificate or diploma	11.8	8.6	10.4	7.9
College, CEGEP or other non-university certificate or diploma	18.9	22.5	22.7	24.9
University certificate or diploma below the bachelor level	2.9	3.5	4.5	4.9
University certificate or degree	8.3	10.1	28.9	32.8

Source: Statistics Canada. 2006 Community Profile (2009).

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Neighbourhood ethnic diversity buffers school readiness impact in ESL children

- ESL children had significantly lower scores for all EDI domains than non-ESL children
- Significant buffering effects found for **Emotional maturity** and **Communication & general knowledge**
  - Neighbourhood ethnic diversity found to mitigate the relation between ESL status and school readiness
- Proportion of movers in the neighbourhood associated with lower EDI scores for both domains
- Lower percentage of employment in the neighbourhood associated with lower scores in the Communication domain

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Discussion

- EDI is valid among Aboriginal children
- Disparities reflect real differences
- Contextual factors may explain these differences, particularly SES
- Cultural, historical forces are foundational
- Is ‘school readiness’ the appropriate frame for dialogue, and change, to enhance Aboriginal children’s well-being
- More research is needed

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kidSKAN

the Saskatchewan Knowledge to Action network for early childhood development

- CIHR funding for “The Early Years Knowledge to Action Network”
- Goals
  - facilitate ECD stakeholder networking and knowledge sharing
  - facilitate appropriate policy and practice change
  - identify and facilitate new opportunities for collaborative research
- Participation: university researchers, decision-makers, community-based practitioners

www.kidskan.ca

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"We live in a word where we need to share responsibility. It's easy to say- it's not my child, not my community, not my world, not my problem. Then there are those who see the need and respond. I consider those people my heroes".

Fred Rogers

Healthy Children
Rural Health
Northern and Aboriginal Health

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