

**Appendix 1.** Study method used to identify child maltreatment in health administrative databases.

Variable	Description	
Early Childhood Maltreatment	Binary variable (Yes/No) indicating at least one occurrence of fatal or non-fatal child maltreatment identified in the emergency room, in hospital, in another health care setting, or out of hospital deaths occurring between 0 weeks and up to 60 months of age	At least one diagnostic code Y/N in 1, 2, 3, 4, 5, 6†, 7†, or 8†
	Description	Data Source
	1. Either fatal or non-fatal maltreatment syndrome: T74, Y06, Y07, T73	NACRS, CIHI-DAD
	2. OR fatal or non-fatal assault: X85- Y09	NACRS, CIHI-DAD
	3. OR fatal or non-fatal undetermined cause: Y10-Y34, Y87, Z04.0, Z04.5, Z04.8	NACRS, CIHI-DAD
	4. OR fatal or non-fatal adverse social circumstances: Z60-Z63, Z72, Z74, Z76.1, Z76.2, Z81, Z86.5, Z91.6, Z91.8	NACRS, CIHI-DAD
5. OR Deaths <i>out of hospital</i> associated with maltreatment, where the cause of death is coded as any of the above: <ul style="list-style-type: none"> <li>i. Maltreatment syndrome: T74, Y06, Y07, T73</li> <li>ii. Assault (homicides and injury purposively inflicted): X85- Y09</li> <li>iii. Undetermined cause (other violence): Y10-Y34, Y87, Z04.0, Z04.5, Z04.8</li> <li>iv. Adverse social circumstances: Z60-Z63, Z72, Z74, Z76.1, Z76.2, Z81, Z86.5, Z91.6, Z91.8</li> </ul>	Ontario Registrar General Database- Vital Statistics	
† excluded in the variable for sensitivity analysis		

Abbreviations: NACRS, National Ambulatory Care Reporting System; CIHI-DAD, Canadian Institute for Health Information Discharge Abstract Database; ICD10CA, International Classification of Diseases 10<sup>th</sup> Revision-Canada;

**Supplemental Table 1.** Additional analyses of neighborhood income quintiles with more specific definition of the maltreatment outcome (hospitalizations and deaths only).

	Non-immigrants						Immigrants						Immigrants ≥ 25 years		Immigrants vs. Non-Immigrants			
	Cases	Rate per 100 children	RR	95% CI	aRR*	95% CI	Cases	Rate per 100 children	RR	95% CI	aRR*	95% CI	aRR**	95% CI	aRR**	95% CI	aRR*	95% CI
<b>Income Quintile</b>																		
1: Lowest	1408	0.8	2.72	2.46, 3.01	1.74	1.57, 1.93	287	0.3	1.06	0.81, 1.37	1.06	0.82, 1.39	1.04	0.80, 1.36	0.81	0.58, 1.15	0.44	0.39, 0.50
2	892	0.5	1.69	1.51, 1.88	1.31	1.17, 1.47	220	0.3	1.01	0.77, 1.33	1.05	0.80, 1.38	1.03	0.78, 1.36	0.92	0.64, 1.32	0.67	0.57, 0.79
3	742	0.4	1.29	1.15, 1.44	1.13	1.01, 1.26	144	0.2	0.93	0.70, 1.23	0.97	0.73, 1.29	0.96	0.72, 1.28	0.79	0.54, 1.16	0.77	0.64, 0.93
4	690	0.3	1.10	0.99, 1.24	1.06	0.94, 1.19	120	0.3	0.96	0.71, 1.28	1.00	0.75, 1.34	0.99	0.74, 1.34	0.85	0.58, 1.25	0.89	0.73, 1.09
5: Highest	534	0.3	1.00	Ref.	1.00	Ref.	72	0.3	1.00	Ref.	1.00	Ref.	1.00	Ref.	1.00	Ref.	0.98	0.76, 1.26
RR for trend			1.30	1.27, 1.33	1.16	1.12, 1.18			1.03	0.33, 1.09	1.02	0.97, 1.08	1.02	0.96, 1.08	0.97	0.91, 1.05		
p-value for trend				<0.0001		<0.0001				0.337		0.396		0.597		0.473		

Abbreviations: CM, child maltreatment; RR, rate ratio; aRR, adjusted rate ratio

\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, and birth order.

\*\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, birth order, maternal region of birth, duration of residence in Canada, refugee status, knowledge of Canadian official languages, marital status at arrival, and educational attainment at arrival.

**Supplemental Table 2.** Additional analyses of birth order with more specific definition of the maltreatment outcome hospitalizations and deaths only).

	Non-immigrants						Immigrants						Immigrants vs. Non-Immigrants					
	Cases	Rate per 100 children	RR	95% CI	aRR*	95% CI	Cases	Rate per 100 children	RR	95% CI	aRR*	95% CI	aRR**	95% CI	aRR**	95% CI	aRR*	95% CI
<b>Birth Order</b>																		
1st	2347	0.5	1.00	Ref.	1.00	Ref.	545	0.3	1.00	Ref.	1.00	Ref.	1.00	Ref.	1.00	Ref.	0.71	0.65, 0.79
2nd	1137	0.4	0.68	0.63, 0.72	0.95	0.88, 1.02	194	0.2	0.67	0.57, 0.79	0.71	0.60, 0.84	0.69	0.58, 0.82	0.75	0.59, 0.96	0.62	0.53, 0.73
3rd	487	0.5	0.88	0.80, 0.97	1.32	1.19, 1.46	52	0.2	0.63	0.47, 0.84	0.65	0.49, 0.88	0.62	0.45, 0.84	0.62	0.39, 0.98	0.44	0.33, 0.59
4+	295	0.8	1.52	1.33, 1.73	2.27	1.99, 2.60	22	0.2	0.78	0.51, 1.19	0.75	0.49, 1.14	0.69	0.58, 1.07	0.52	0.34, 1.15	0.30	0.19, 0.46
RR for trend			0.98	0.94, 1.03	1.21	1.16, 1.26			0.79	0.71, 0.88	0.81	0.73, 0.90	0.79	0.71, 0.89	0.78	0.66, 0.92		
p-value for trend				<0.0001		<0.0001				<0.0001		<0.0001		<0.0001		0.0003		

Abbreviations: CM, child maltreatment; RR, rate ratio; aRR, adjusted rate ratio

\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, and neighborhood income.

\*\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, neighborhood income, maternal region of birth, duration of residence in Canada, refugee status, knowledge of Canadian official languages, marital status at arrival, and educational attainment at arrival.

**Supplemental Table 3.** Additional analyses of neighborhood income quintiles in maltreatment among 5-year-old Ontario-born children of immigrant mothers by maternal region of birth.

World region	Income quintile	RR	95% CI	aRR*	95% CI	aRR**	95% CI
South Asia	1:Lowest	0.98	0.74, 1.30	0.94	0.71, 1.25	0.95	0.71, 1.26
	2	0.91	0.68, 1.21	0.89	0.67, 1.19	0.9	0.67, 1.20
	3	0.73	0.54, 0.99	0.72	0.53, 0.98	0.73	0.53, 0.99
	4	0.69	0.50, 0.96	0.69	0.50, 0.96	0.69	0.50, 0.96
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
East Asia/Pacific	1:Lowest	1.17	0.86, 1.59	1.18	0.87, 1.60	1.18	0.86, 1.60
	2	1	0.73, 1.38	1.03	0.75, 1.41	1.02	0.74, 1.41
	3	1.08	0.78, 1.49	1.11	0.80, 1.53	1.1	0.79, 1.52
	4	1	0.71, 1.41	1.02	0.72, 1.43	1.01	0.72, 1.43
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
Latin America/Caribbean	1:Lowest	2.13	1.39, 3.27	1.97	1.29, 3.03	1.89	1.23, 2.90
	2	1.59	1.02, 2.48	1.51	0.97, 2.35	1.46	0.94, 2.28
	3	1.6	1.02, 2.53	1.56	0.99, 2.46	1.52	0.97, 2.39
	4	1.38	0.85, 2.23	1.37	0.85, 2.22	1.35	0.84, 2.19
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
North Africa/Middle East	1:Lowest	1.52	0.82, 2.81	0.54	0.34, 0.88	1.2	0.65, 2.22
	2	1.43	0.74, 2.75	0.54	0.32, 0.90	1.13	0.59, 2.16
	3	1.61	0.82, 3.16	0.56	0.33, 0.97	1.4	0.73, 2.69
	4	1.13	0.56, 2.28	0.47	0.27, 0.84	1.01	0.51, 2.01
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
Western Europe, US, Australia, New Zealand	1:Lowest	1.74	1.14, 2.66	1.81	1.16, 2.84	1.75	1.11, 2.75
	2	1.29	0.83, 2.02	1.4	0.89, 2.22	1.34	0.85, 2.13
	3	1.25	0.79, 1.97	1.37	0.86, 2.19	1.35	0.84, 2.15
	4	1.19	0.76, 1.86	1.25	0.78, 1.98	1.24	0.78, 1.96
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
Eastern Europe	1:Lowest	1.85	1.11, 3.09	1.63	0.97, 2.74	1.66	0.99, 2.80
	2	2.25	1.36, 3.72	2.11	1.27, 3.49	2.15	1.29, 3.56
	3	1.54	0.91, 2.58	1.46	0.86, 2.45	1.46	0.86, 2.45
	4	0.92	0.53, 1.61	0.9	0.52, 1.57	0.91	0.52, 1.59
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.
Sub-Saharan Africa	1:Lowest	1.49	0.77, 2.90	1.52	0.77, 2.98	1.48	0.74, 2.93
	2	1.55	0.77, 3.12	1.6	0.79, 3.23	1.58	0.77, 3.21
	3	1.44	0.70, 3.00	1.48	0.71, 3.09	1.50	0.72, 3.15
	4	1.49	0.70, 3.18	1.58	0.74, 3.40	1.60	0.75, 3.45
	5:Highest	1.00	Ref.	1.00	Ref.	1.00	Ref.

Abbreviations: RR, rate ratio; aRR, adjusted rate ratio

\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, and birth order.

\*\* Adjusted for maternal age, child sex, rural residence, complex chronic conditions, birth order, duration of residence in Canada, refugee status, knowledge of Canadian official languages, marital status at arrival, and educational attainment at arrival.

