

CHRD 2024: Abstract Submission Form

Presenter Name

M. Florencia Ricci

Presenter Status

Non-Trainee

Role in the project

Design
Perform Experiments
Analyze Data
Write Abstract

Research Category

Clinical

Title

Exploring the Association Between Autism Spectrum Disorder and Immigration in Manitoba, a population-based approach

Background

Higher rates of autism spectrum disorder (ASD) among immigrants have been described in several countries. We previously conducted the first ever Canadian study examining this association; a retrospective review that identified an overrepresentation of immigrant families among children ≤ 6 years diagnosed with ASD at Manitoba's primary and only publicly funded site for ASD assessment, the Rehabilitation Center for Children (RCC). While a useful first step, the study lacked granular data on immigration. We now aimed to further research this association by examining population-level data.

Objective

To determine differences in the incidence of ASD among children ≤ 6 years of age living in Manitoba during May 2016-December 2022 who belong to immigrant vs. nonimmigrants families, and related factors

Methods

We linked the RCC ASD dataset to the Manitoba Population Data Repository. Children were classified as: Group 1-no immigration, Group 2- one/both parent(s) immigrants, Group 3-parents and child immigrants to Canada. Sociodemographic information including country of origin and refugee status was collected. Diagnoses of ASD at RCC were made by developmental pediatricians and/or psychologists. Incidence rate of ASD (95% CI) was calculated for each group; adjusted relative rates with 95% CI were calculated to compare groups.

Results

Table 1: Incidence of ASD per 1000-person year in Manitoba and Adjusted Relative Rate according to immigration status.

Table 2: Adjusted Relative Rate for ASD based on refugee status among immigrant families.

Table 3: Adjusted Relative Rate for ASD based on region of origin among immigrant families.

Conclusion

Findings of this population-based Manitoba study identified an increased incidence of ASD among immigrant families. While non-European region of origin was associated with increased risk for ASD, refugee status was not. Further studies are needed to further understand the mechanisms behind the higher incidence of ASD among children of immigrant families.

Do you have a table/figure to upload?

Yes

Authors

Name	Email	Role	Profession
M. Florencia Ricci	fricci@rccinc.ca	Presenting Author	Assistant Professor
Marcelo Urquia	murquia@umanitoba.ca	Co Author	Associate Professor

Table 1: Incidence of ASD per 1000-person year in Manitoba and Adjusted Relative Rate according to immigration status

	Number of children	Number of ASD cases	Person-years	ASD incidence per 1000 person-year	Crude relative rate	95%LCL	95%UCL	Adjusted Relative rate *	95%LCL	95%UCL
Immigration status										
Group 1	147,470	1,248	816388.00	1.53	1.00 ref			1.00 ref		
Group 2	59,151	1,034	303724.09	3.40	2.23	2.05	2.42	2.28	2.09	2.49
Group 3	20,384	164	54876.90	2.99	1.95	1.66	2.30	1.80	1.51	2.15

*Adjusted for child's sex, birth order, rural/urban, income quintile, single parents, income assistance

Table 2: Adjusted Relative Rate for ASD based on refugee status among immigrant families.

		Number of children	Number of ASD cases	P/Y of followup	Crude Relative Rate	95% LCL	95% UCL	Adjusted* Relative Rate	95% LCL	95% UCL	
Refugee status	Group 2	No	37,533	792	198529.19			1.00 (Ref)			
		Yes	5,600	121	29547.59	1.03	0.85	1.24	0.94	0.76	1.16
	Group 3	No	8,347	81	30446.68	1.00 (Ref)			1.00 (Ref)		
		Yes	1,599	15	5281.05	1.07	0.62	1.85	1.56	0.83	2.93

*Adjusted for child's sex, birth order, rural/urban, income quintile, single parents, income assistance

Table 3: Adjusted Relative Rate for ASD based on region of origin

		Number of children	Number of ASD cases	P/Y of followup	Crude Relative Rate	95% LCL	95% UCL	Adjusted* Relative Rate	95% LCL	95% UCL	
Region of origin	Group 1	Canada	147,470	1,248	816388.00	1.00 (Ref)			1.00 (Ref)		
		Africa	6,061	173	31216.79	3.63	3.09	4.25	3.47	2.93	4.11
	Group 2	Asia	25,356	638	133363.75	3.13	2.85	3.44	3.36	2.99	3.77
		Europe	7,058	41	37578.01	0.71	0.52	0.97	0.93	0.68	1.27
		Rest world	4,658	61	25918.23	1.54	1.19	1.99	1.83	1.41	2.38
	Group 3	Africa	1,772	22	6192.39	2.32	1.53	3.54	2.17	1.41	3.33
		Asia	6,453	68	23382.34	1.90	1.49	2.43	1.92	1.48	2.49
		Europe/Rest world	1,721	6	6153.00	0.64	0.29	1.42	0.78	0.35	1.74

*Adjusted for child's sex, birth order, rural/urban, income quintile, single parents, income assistance