COMPOUNDING DISADVANTAGE: THE IMPACT OF COVID-19 ON IMMIGRANTS LIVING WITH MENTAL HEALTH & ADDICTION DISORDERS

https://ccdproject.ca/

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INTRODUCTION

Immigrants made up about half of the COVID-19 cases in Ontario

Racialized immigrants have been hit hard by COVID-19

Highest rate of COVID-19 was among people who identified as South Asian or Indo-Caribbean (27%), Black (16%), Southeast Asian (13%), Arab, Middle Eastern or West Asian (8%)

COVID-19 disparity derives from immigrants' underprivileged social and economic position in Canada

Disproportionately represented in precarious jobs -> working in sectors with a greater risk of exposure to COVID-19 ->more likely to live below the poverty line

INTRODUCTION

- The association of social inequities with COVID-19 morbidity and mortality further can be intensified in the context of Mental Health & Addictions (MH&A)
- MH&A is a leading cause of morbidity and mortality in Ontario.
- People with MH&A disorders have also been found to be at greater risk of COVID-19 infection and of worse outcomes.
- What happened to those who are at the intersection of social and clinical disadvantage?
- There is little information on this area.
- Our study aimed to examine the impact of COVID-19 on immigrants living with MH&A

METHODOLOGY

Study design: A population-based retrospective cohort study based on Ontario-linked healthcare administrative databases: CIHI-DAD, NACRS, IRCC, RPDB, COVax-ON, OMHRS

- **Inclusion criteria: Ontario residents aged 18 and above**
- **Exclusion: Rural areas (based on Statistics Canada definition)**

4 Subgroups

- **Immigrants with MH&A**
- **Immigrants without MH&A**
- **Non-immigrants with MH&A**
- **Non-immigrants without MH&A**

METHODOLOGY

Definition of "Mental Health & Addiction Disorders"

- More than 1 diagnosis code 300 outpatient claims or have at least 1 non-300 diagnosis code MHA-related outpatient claim or MHA-related NACRS ED visit **or** MHA-related DAD/OHMRS hospitalization in the 1 year before the index date (March 31, 2020).

METHODOLOGY

Outcomes

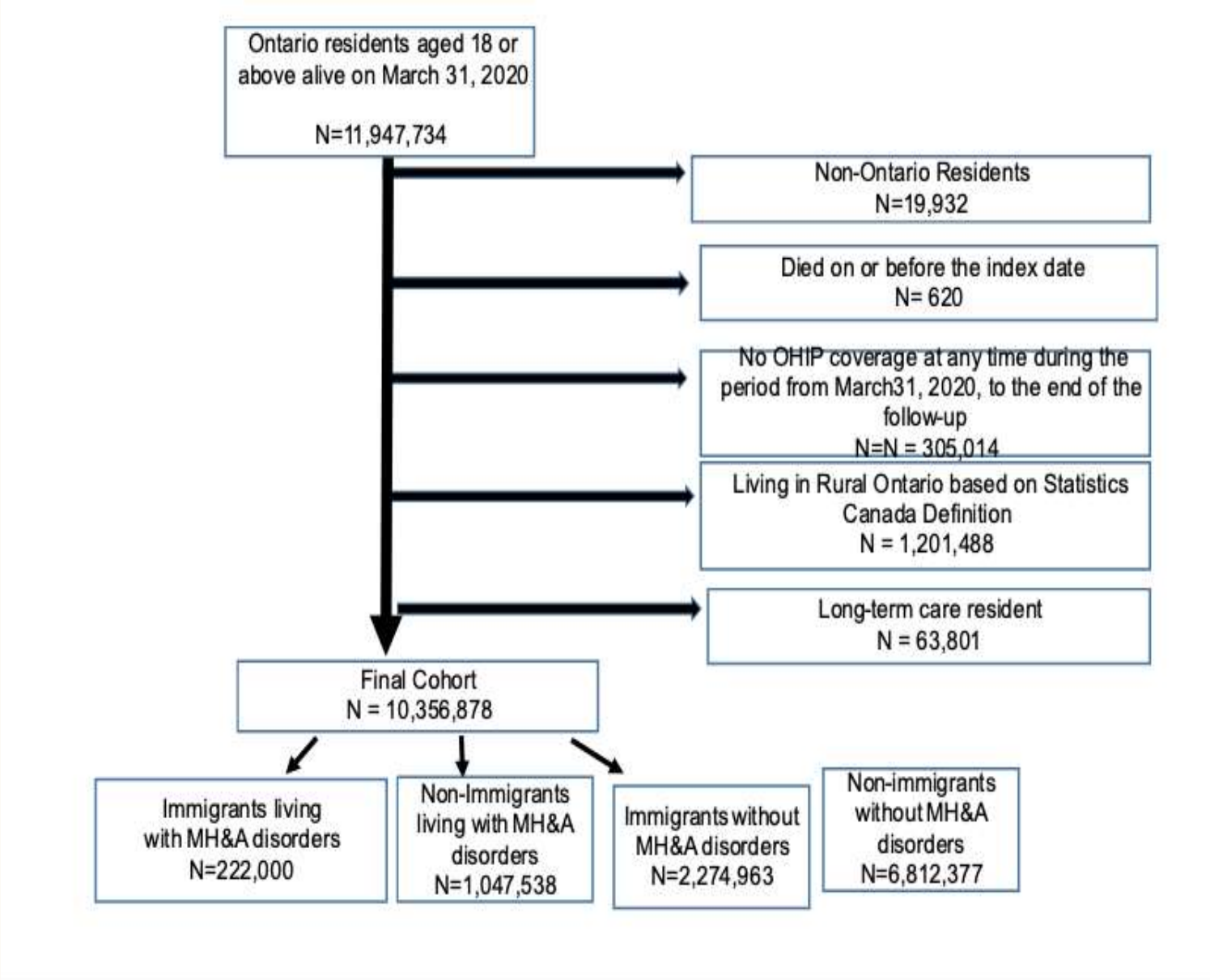
- COVID-19 diagnosis
- Hospitalization
- ICU admission
- COVID-19 related mortality
- COVID-19 vaccination

Time period for outcomes

- January 2020 – December 2021

FIGURE 1: COHORT FLOWCHART

- **Cohort Size:** 10,356,878 Ontario residents aged 18 or older.
  - **Immigrants:** 2,496,963 (24.10%). **Of those about 9% lived with MH&A**
  - **Non-immigrants** (Canadian-born/long-term residents): 7,859,915 (75.89%). **Of those about 13% lived with MH&A**



SOCIODEMOGRAPHIC CHARACTERISTICS:

Overall

Immigrants were younger than non-immigrants (mean age 47 vs. 49).

•The average length of stay of immigrants in Canada was 17 years.

•16% of immigrants were refugees and protected persons.

•

•The highest concentration of immigrants was in Toronto followed by Central West and Central East (34% vs 29% vs 20% respectively).

•The most common region of origin of immigrants was East Asia and Pacific (26.2%) followed by South Asia (26%), Europe and Central Asia (25.5%), Latin America and the Caribbean (12.9%), and Sub-Saharan Africa (7.6%).

SOCIODEMOGRAPHIC CHARACTERISTICS:

More immigrants (vs. non-immigrants) lived in neighbourhoods that:

- Had the **lowest household income** (25% vs 18%),
- Were the **most residentially unstable** (28% vs 24%),
- Were the **most materially deprived** (22% vs 18%,)
- Were the **most ethnically diverse** (60% vs. 22%)

- More immigrants (vs. non-immigrants) **did not have a primary care provider** (9.3% vs. 7.4%).

- The **average number of comorbidities** was significantly higher among non-immigrants vs. immigrants (5.3 vs. 4.9).

PEOPLE WITH MENTAL HEALTH & ADDICTIONS DISORDERS

➢**222,000 (8.9%)** immigrants were identified as having MH&A disorders as opposed to 1,047,538 (13.3%) non-immigrants.

Age and Gender:

- Immigrants living with MH&A were of similar age overall as non-immigrants living with MH&A (46.3 vs. 45.9 years).
- Fewer immigrants (vs. non-immigrants) living with MH&A were young adults (7.5% vs. 13.5%)
- Fewer immigrants (vs. non-immigrants) living with MH&A were seniors (10.9% vs. 17.6%)

- Similar gender proportion of females and males between immigrants and non-immigrants with MH&A (56.9% vs. 57.1%, 43.1% vs. 42.9%).

Socioeconomic neighbourhood conditions:

A higher proportion of immigrants living with mental health and addiction disorders (vs. non-immigrants) lived in neighbourhoods that:

- **Had the lowest Income:** 27.2% vs. 21.7%.
- **Were Ethnically Diverse:** 58.1% vs. 21.1%.
- **Residential Instability:** no significant difference.
- **Material Deprivation:** no significant difference.

PEOPLE WITH MENTAL HEALTH & ADDICTIONS DISORDERS

- **MH&A Types among immigrants with MH&A were:**
  - Anxiety and other disorders (71.4%),
  - Major mood disorders (19.6%),
  - Substance abuse (4.9%), and
  - Psychotic disorders (3.9%).

- Immigrants had a higher proportion of Anxiety and other disorders compared to non-immigrants (71.4% vs. 66.1%).

- 1.1% of immigrants with MH&A also suffered from cancer which included breast cancer (0.3%), blood, cervix, colorectal, lung, and prostate (0.1% each).

IMMIGRANTS WITH MENTAL HEALTH &ADDICTION

- Immigrants with MH&A also lived with other comorbidities:

- **Common Chronic Comorbidities:**
  - Cancer, COPD, HTN, Asthma, Arthritis: Higher among Non-immigrants with MH&A.
  - Diabetes: Higher among Immigrants with MH&A.

PREVALENCE OF COVID-19 DIAGNOSIS

- The prevalence of COVID-19 diagnosis was significantly higher among Immigrants: 8% vs. Non-immigrants: 4.8% (Std diff = 0.133).
- The prevalence of COVID-19 was significantly higher among immigrants with MH&A compared to all other groups
- The prevalence of COVID-19 was slightly higher among immigrants with MH&A compared to immigrants without MH&A, although not significant (9.2% vs, 7.9%, Std diff=0.047).
- The prevalence of COVID-19 was significantly higher among immigrants without MH&A than non-immigrants without MH&A (7.9% vs. 4.7%, Std diff=0.132).

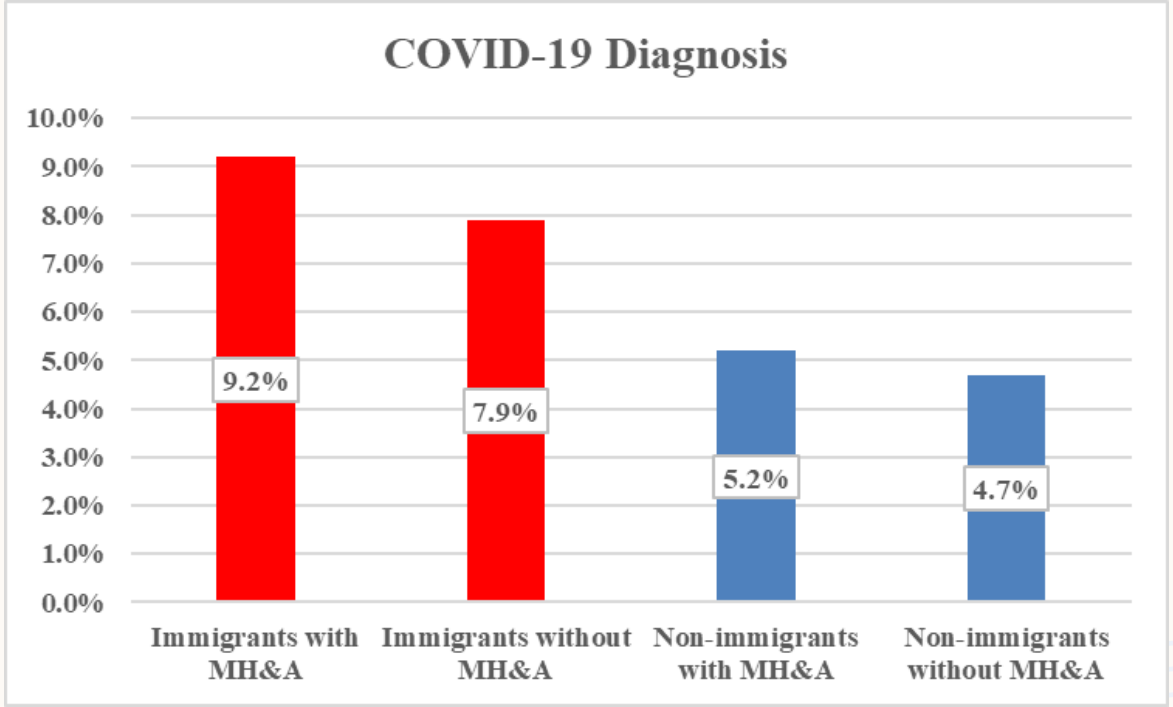


Figure 2: Prevalence of COVID-19 diagnosis by immigrant and MH&A st

CONFIRMED POSITIVE TESTS

- A lower proportion of immigrants with MH&A compared to non-immigrants with MH&A were tested for COVID-19.
- Confirmed positive test results were significantly higher among immigrants with MH&A (17.7%) than non-immigrants with MH&A (9.5%). Similarly, a significantly higher proportion of immigrants without MH&A tested positive as opposed to non-immigrants without MH&A (19.2% vs. 10.5%)
- No significant difference in COVID-19 Hospitalization, ICU admission and mortality rates were observed across immigrants and non-immigrants with or without MH&A.

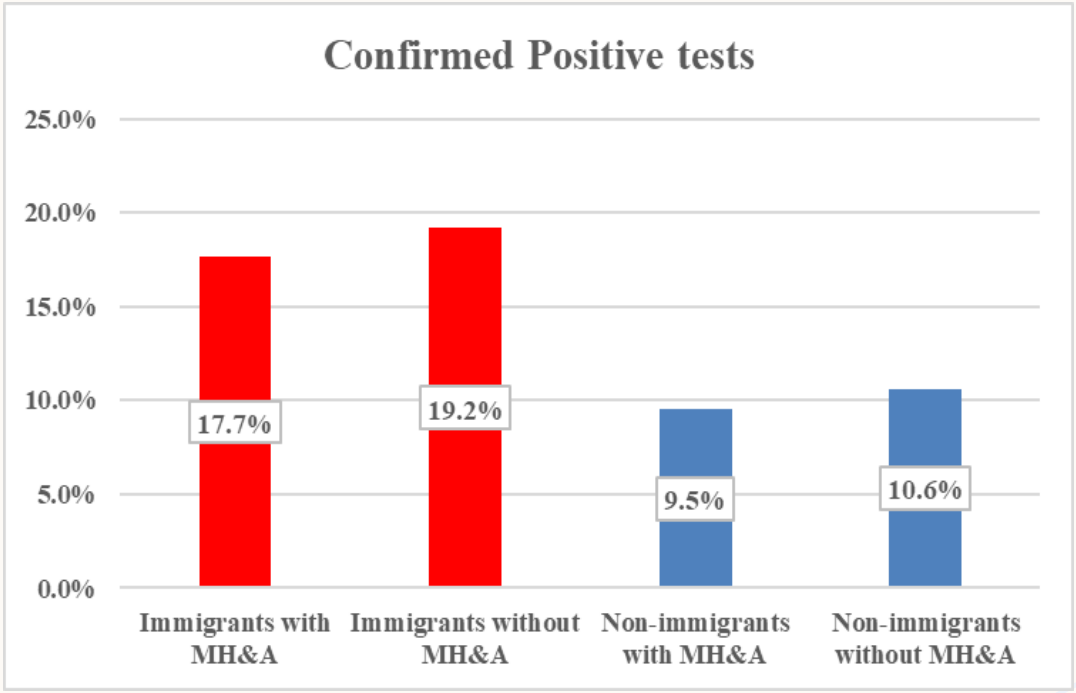


Figure 3: Percent positivity among those tested by immigration and MH&A status

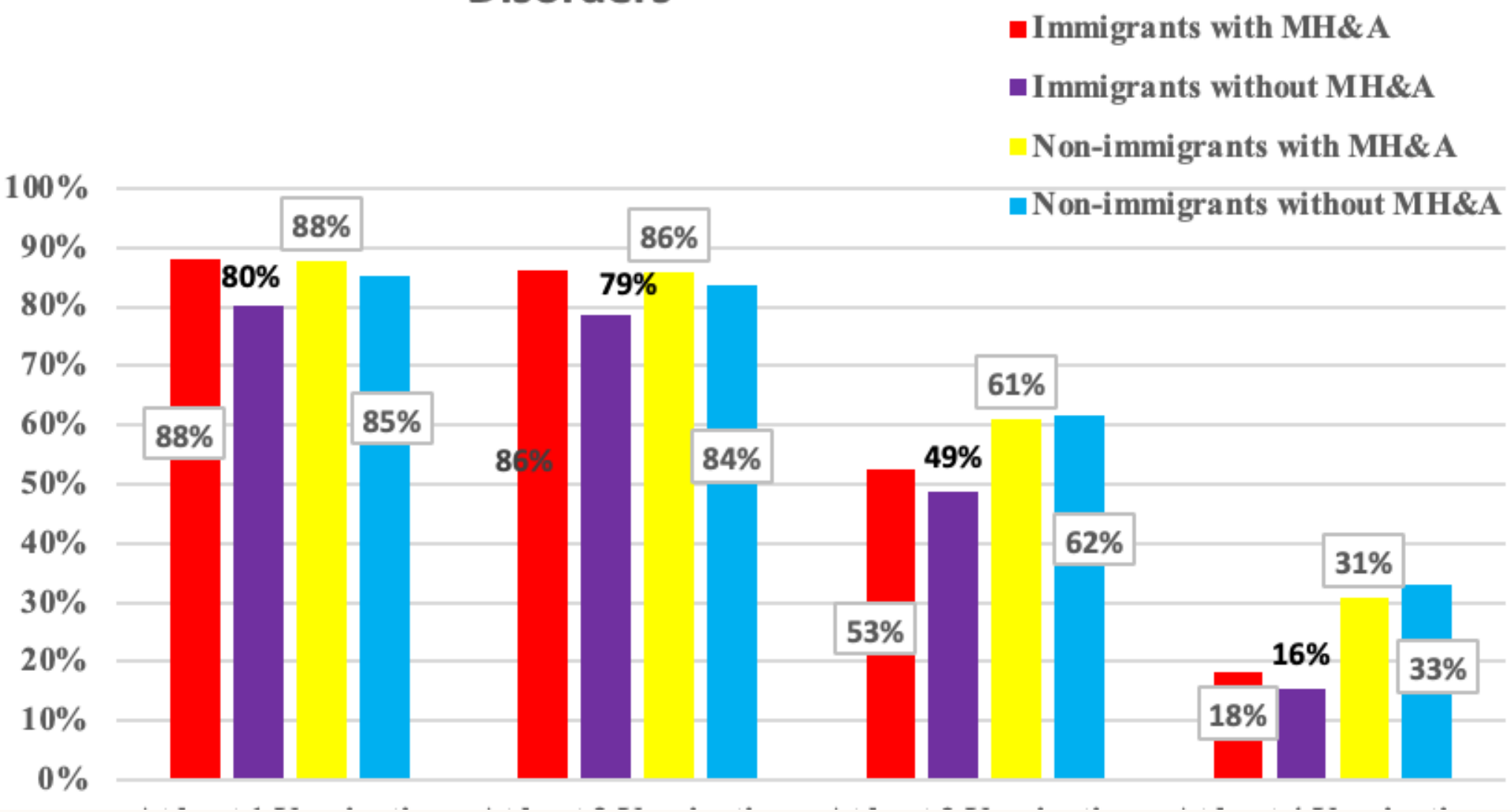
PREVALENCE OF COVID-19 HOSPITALIZATION, ICU ADMISSION AND MORTALITY

- No significant difference in COVID-19 Hospitalization, ICU admission and mortality rates was observed across immigrants and non-immigrants with or without MH&A.

Toronto Metropolitan University

WCHH WOMEN'S COLLEGE HOSPITAL Healthcare REVOLUTIONIZED

Vaccination Doses by Immigration Status and MH&A Disorders



LOGISTIC REGRESSION MODLES

Outcomes:

- COVID-19 diagnosis
- Hospitalization
- ICU admission
- COVID-19 related mortality
- COVID-19 vaccination

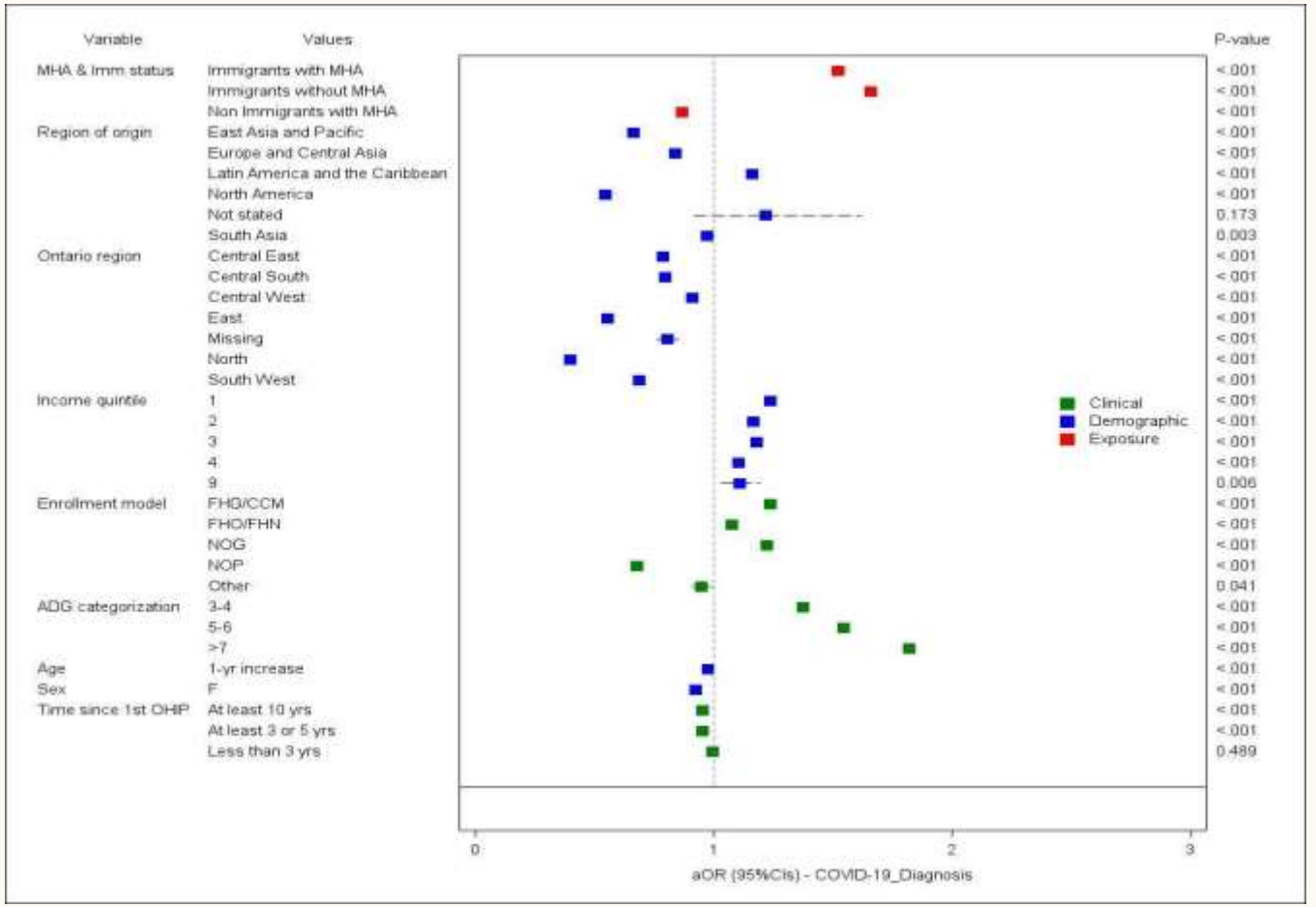
Adjusted for:

- Age
- Sex
- Income
- Region of origin
- Length of OHIP eligibility time in Ontario
- Region of residence in Ontario
- Number of ADGs (comorbidities)
- Primary Care Patient Enrollment Model

LOGISTIC REGRESSION
BY IMMIGRANT STATUS AND MH&A - - COVID-19 DIAGNOSIS

Immigrants living with and without MH&A (vs. non-immigrants without MH&A) were 52% and 66% more likely to be diagnosed with COVID-19 vs.

Non-immigrants with MH&A (vs. non-immigrants without MH&A) were 13% less likely to be diagnosed with COVID-19



Immigrants from Latin America and the Caribbean (vs. non-immigrants) were 16% more likely to be diagnosed with COVID-19

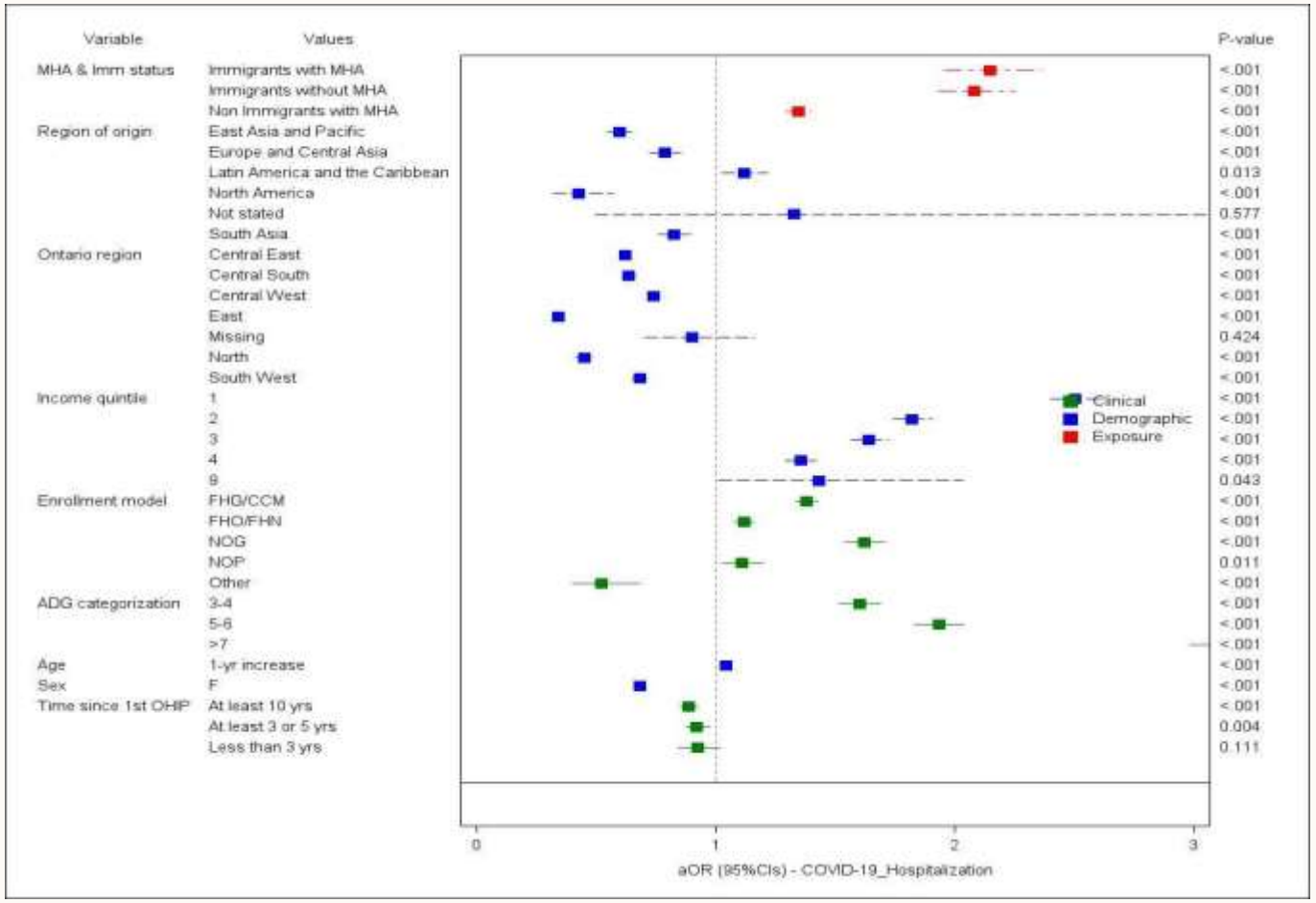
Those living in the lowest-income neighbourhoods were 24% more likely to be diagnosed with COVID-19

LOGISTIC REGRESSION
BY IMMIGRANT STATUS AND MH&A - **COVID-19 HOSPITALIZATION**

Immigrants living with and without MH&A (vs. non-immigrants without MH&A) were almost **twice more likely to be hospitalized.**

Non-immigrants with MH&A (vs. non-immigrants without MH&A) **were 34% more** likely to be hospitalized.

Females were **32% less** likely than men to be hospitalized.



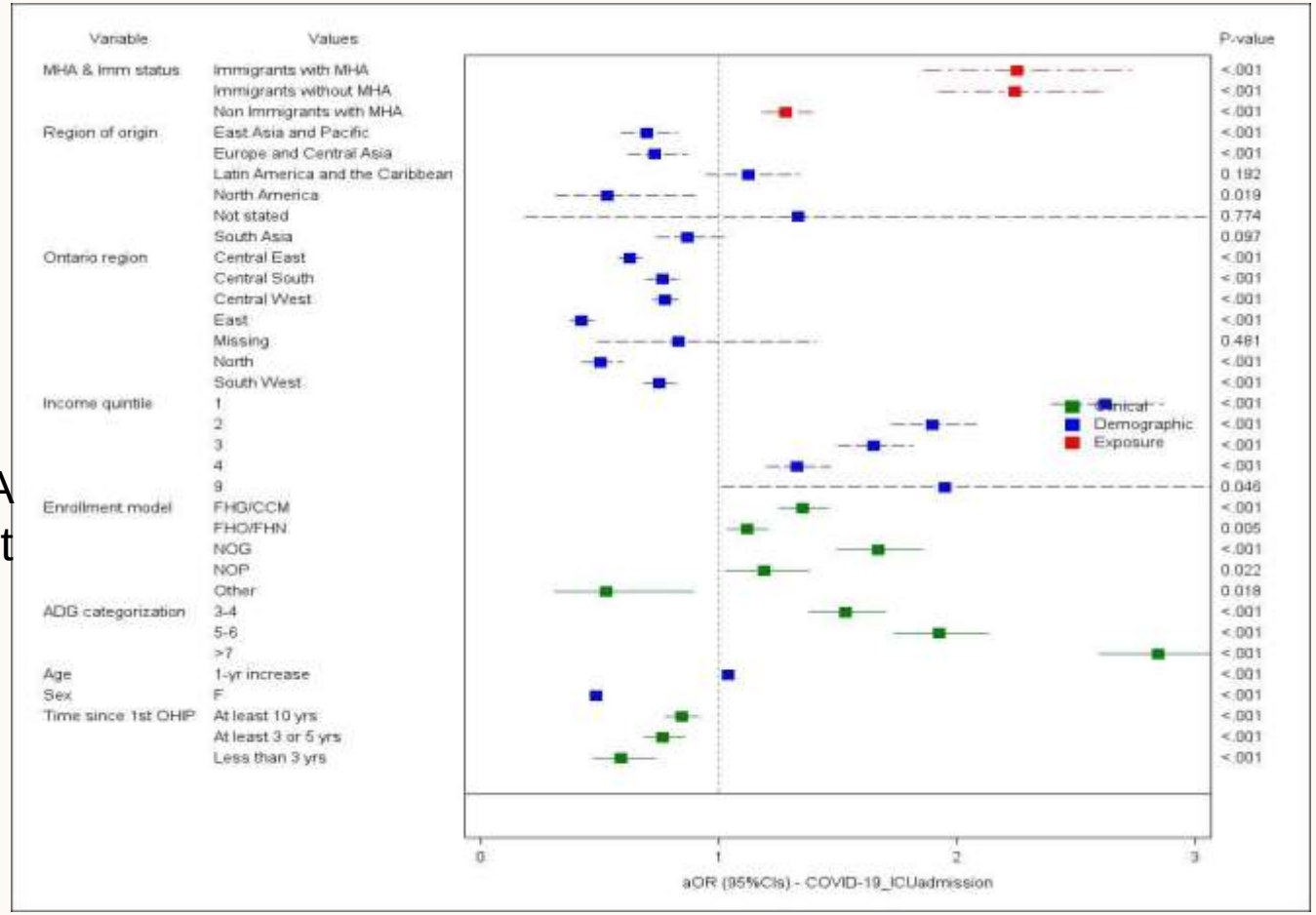
Those living in the **lowest-income neighbourhoods** were about **2.5 times more** likely to be hospitalized

Immigrants from Latin America and the Caribbean (vs. non-immigrants) were **12% more likely** to be hospitalized

LOGISTIC REGRESSION
BY IMMIGRANT STATUS AND MH&A - **COVID-19 ICU ADMISSION**

Immigrants living with or without MH&A (vs. non-immigrants without MH&A) **were about 2.3 more likely** to be admitted to ICU.

Non-immigrants with MH&A (vs. non-immigrants without MH&A) were **28% more likely** to be admitted to ICU.



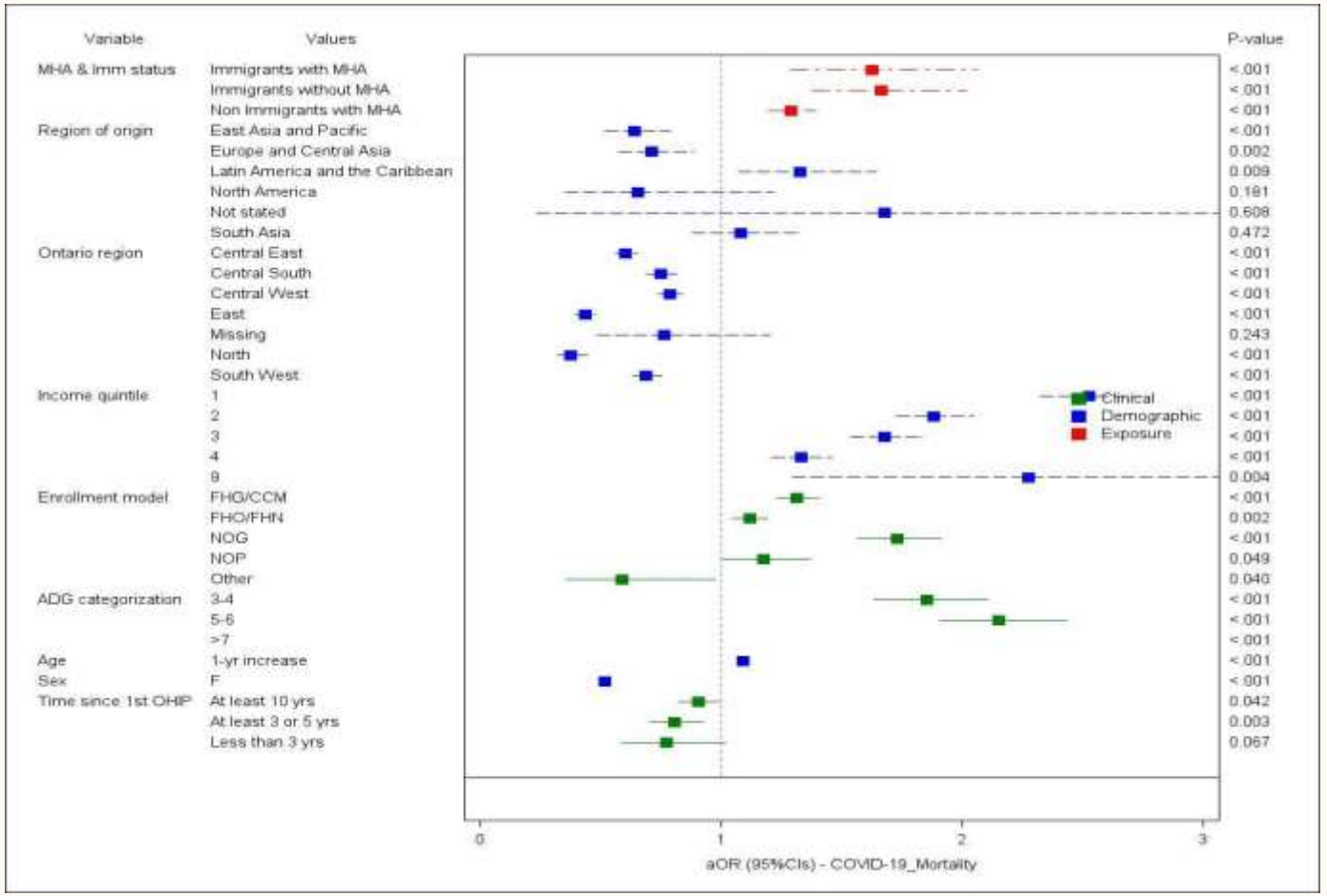
ICU admission was **inversely** related to neighbourhood income.

lowest-income neighbourhoods(vs. highest-income neighbourhoods) were about **2.6 times** more likely to be admitted to ICU

LOGISTIC REGRESSION BY IMMIGRANT STATUS AND MH&A - **COVID-19 MORTALITY**

Immigrants living with or without MH&A (vs. non-immigrants without MH&A) were **63% and 67% more** likely to die from COVID-19.

Non-immigrants with MH&A (vs. non-immigrants without MH&A) were **29% more likely** to die from COVID-19

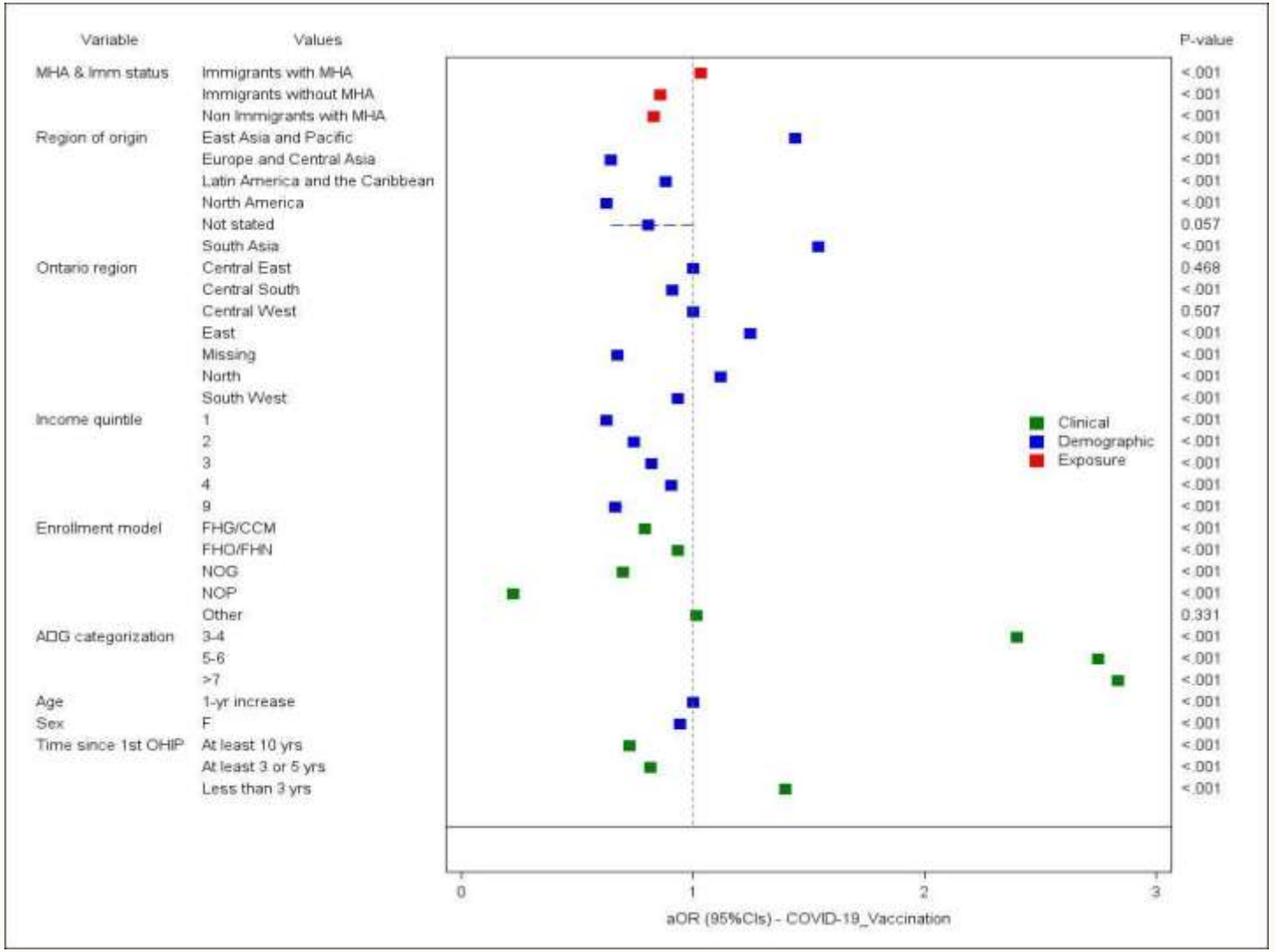


Immigrants from **Latin America and the Caribbean** were **33% more likely** to die from COVID-19 compared to individuals from Canada

COVID-19 mortality was **inversely** related to neighbourhood income.

LOGISTIC REGRESSION BY IMMIGRANT STATUS AND CANCER - **COVID-19 VACCINATION**

Although COVID-19 vaccination among immigrants living with MH&A (vs. non-immigrants without MH&A) was **3% more** **it was 17% and 14% less among immigrants without MH&A and non-immigrants with MH&A respectively.**



Those living in the lowest-income neighbourhoods were about **37% less likely** to receive COVID-19 compared to the highest-income neighbourhoods

Those **without a primary care provider** were **78% less** likely to receive vaccination

KEY FINDINGS

Immigrants:

- were worse off socioeconomically than non-immigrants.
- living with MH&A were worse off socioeconomically than non-immigrants with or without MH&A
- ***Immigrants with MH&A had worse COVID outcomes in our adjusted models.***
- **What strategies can be taken to avoid this in the future?**

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QUESTIONS?