

COVID-19 PANDEMIC

RAEB'S Evidence Update

Highlights of health research synthesized by the Research, Analysis and Evaluation Branch

March 14, 2022

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Evidence Products Produced with Our Partners

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. Please contact [Evidence Synthesis Unit](#) for the full read of these evidence products.

Impact of the COVID-19 Lockdown Measures on Mental Health Outcomes

(Produced in collaboration with McMaster Health Forum and Ontario Health)

- **Anxiety:** Lockdowns or school closures are associated with an increase in symptoms of anxiety in the general population and among children and adolescents (e.g., an additional 76.2 million cases of anxiety disorders in the general population were reported globally as of 2020).
- **Depression:** Lockdowns or school closures are associated with an increase in symptoms of depression in the general population and among children and adolescents (e.g., an additional 53.2 million cases of major depression disorder in the general population was reported globally as of 2020).

- **Loneliness:** Mixed findings are reported: while one systematic review reported loneliness as a significant issue from before to during the COVID-19 pandemic, other evidence suggests that there is no significant association between lockdowns and loneliness.
- **Post-Traumatic Stress Disorder (PTSD):** Mixed findings are reported: while one systematic review reported relatively high rates of PTSD symptoms in the global population (i.e., China, Denmark, Iran, Italy, Nepal, Spain, Turkey, and the United States), a Chinese study found no significant correlation between quarantining and PTSD symptoms.
- **Multiple Mental Health Conditions:** Lockdowns or school closures are associated with an increase in multiple mental health conditions (i.e., stress, anxiety, PTSD, depression, and distress) in the general population, and among children and adolescents.
- **Risk Factors for Psychological Distress:** Developing anxiety, depression, PTSD, and other forms of psychological distress during the COVID-19 pandemic may be associated with risk factors such as: younger age; being female; poor physical health; lower educational levels; student status; unemployment; lower household income; and frequent exposure to social media/news concerning COVID-19.

Research Evidence and Jurisdictional Experience

The research evidence profiled below was selected from highly esteemed academic journals and grey literature sources, based on date of publication and potential applicability or interest to the Ontario health sector.

Disease Management

Journal of the American Medical Association (JAMA): Association between dexamethasone treatment after hospital discharge for patients with COVID-19 infection and rates of hospital readmission and mortality

March 8, 2022. In this study of 1,164 patients with COVID-19 who received less than 10 days of dexamethasone (six mg/d) during hospitalization, the rate of readmission or mortality within 14 days of discharge was 9.1% among patients who continued dexamethasone treatment compared with 11.4% among patients who did not. The difference was not statistically significant. These findings suggest that prescribing dexamethasone at discharge for patients hospitalized with COVID-19 who received less than 10 days of dexamethasone is not associated with a reduction in readmission or mortality. [Article](#).

The Lancet: Safety of mRNA vaccines administered during the initial six months of the US COVID-19 vaccination program

March 7, 2022. This study analyzed surveillance data collected through the Vaccine Adverse Event Reporting System (VAERS), a passive system, and v-safe, a new active system, during the first six months of the COVID-19 vaccination program. The data from more than 298 million doses of mRNA COVID-19 vaccine administered show that most reported adverse events were mild and short in duration. [Article](#).

Nature: Waning of SARS-CoV-2 booster viral load reduction effectiveness

March 4, 2022. This study found that the viral load reduction effectiveness of Pfizer vaccine significantly declines within months post the booster dose. The Ct values of RdRp gene initially increases by 2.7 relative to unvaccinated in the first month post the booster dose, yet then decays to a difference of 1.3 in the second month and becomes small and insignificant in the third to fourth months. These results suggest rapid waning of the booster's effectiveness in reducing infectiousness, possibly affecting community-level spread of the virus. [Article](#).

New England Journal of Medicine: COVID-19 vaccine effectiveness against the Omicron variant in England

March 2, 2022. This study found primary immunity to the Omicron variant was very low and less than that of the Delta variant 20 weeks after the second vaccine dose, regardless of the initial vaccine type (i.e., Pfizer-BioNTech, AstraZeneca, or Moderna). A booster dose of either the Pfizer or Moderna vaccine substantially improved efficacy of all three vaccines to an average of 65%, but protection waned over a five- to nine-week period. [Article](#).

Understanding the Disease

JAMA: Comparison of seroconversion in children and adults with mild COVID-19

March 9, 2022. Among patients with mild COVID-19, this study suggests that children may be less likely to have seroconversion than adults despite similar viral loads. This finding has implications for future protection after SARS-CoV-2 infection in children and for interpretation of serosurveys that involve children. Further research to understand why seroconversion and development of symptoms are potentially less likely in children after SARS-CoV-2 infection and to compare vaccine responses may be of clinical and scientific importance. [Article](#).

Health Equity and Vulnerable Populations

JAMA: Mortality among people experiencing homelessness in San Francisco during the COVID-19 pandemic

March 10, 2022. In this study, more than twice as many people died while homeless in the year starting March 17, 2020, compared with any prior year. The number of deaths in San Francisco among people experiencing homelessness increased markedly during the COVID-19 pandemic, with most of the increase associated with overdose deaths rather than COVID-19 itself. These findings may guide future interventions to reduce mortality among individuals experiencing homelessness. [Article](#).

JAMA: Hospitalizations and mortality from non-SARS-CoV-2 causes among Medicare beneficiaries at US hospitals during the SARS-CoV-2 Pandemic

March 9, 2022. In this study of 8,448,758 Medicare admissions to 4,626 US hospitals from 2019 and April 2020 through September 2021, admissions for non-SARS-CoV-2 diagnoses fell sharply in March and April 2020 and remained lower through September 2021. Mortality rates after hospitalization were substantially higher, especially for Black individuals, Hispanic individuals, and those with low socioeconomic status, and the increases in mortality were greater in lower-quality hospitals and hospitals with high caseloads of SARS-CoV-2. [Article](#).

Nature: Ethnic disparities in hospitalization and hospital outcomes during the second wave of COVID-19 infection (Jan 2020 to Feb 2021) in East London

March 8, 2022. This study of patients aged ≥ 16 years who had an emergency admission with SARS-CoV-2 infection to acute hospitals found that relative to the White population, Asian and Black populations experienced 4.1 times and 2.1 times higher rates of hospital admission, respectively. Despite higher-than-expected rates of hospital admission, Black and Asian patients also experienced similar or greater risk of death in hospital since the start of the pandemic, implying a higher overall risk of COVID-19 associated death in these communities. [Article](#).

JAMA: Assessment of structural barriers and racial group disparities of COVID-19 mortality in the US

March 4, 2022. In this study of 3,142 counties in 50 US states and the District of Columbia, the associations between different measures of social determinants of health and COVID-19 mortality varied across racial and ethnic groups (Black or African American, Hispanic or Latinx, and non-Hispanic White populations) and different community types (rural, suburban, and urban areas). Findings suggest the need for future research that addresses health inequity and

guides policies and programs by further exploring the different dimensions and regional patterns of social determinants of health. [Article](#).

McGill Journal of Medicine: Implication of COVID-19 on post-secondary students' mental health

March 4, 2022. This review summarizes recent research that determined that COVID-19 has increased mental health symptoms among post-secondary students, such as depression, anxiety, post-traumatic stress disorder, as well as increased feelings of isolation, loneliness, and fatigue. Drinking and substance use, poor sleeping patterns, and screen time have also risen as a result of the ongoing pandemic. These findings call for post-secondary institutions, health care providers, and governments to prioritize the mental health of future generations while providing support and intervention programs. [Article](#).

Frontline Workers

Nature: The indirect effect of vaccination on health care workers' unvaccinated household members in Finland

March 4, 2022. This study analyzed COVID-19-related data from more than 250,000 health care workers who were vaccinated with one or two doses of an mRNA-based vaccine, and their unvaccinated household members. The study found vaccination is associated with a reduction in SARS-CoV-2 infections not only among vaccinated individuals, but unvaccinated adult household members as well, including children. [Article](#).

Public Health Measures

BMC Medical Education: Evaluating e-health literacy, knowledge, attitude, and practice (KAP) regarding COVID-19 prevention and self-protection among Iranian students

March 5, 2022. This study examined the KAP of COVID-19 prevention and self-protection behaviours among 925 Iranian university students. The strongest predictors of preventive practices were knowledge, attitude, having a COVID-19 infected person in the family, being an older age, having a medical field of education, higher score on the e-Health Literacy Scale (EHEALS) questionnaire, and female gender. Results suggest that KAP and e-health literacy of university students, especially non-medical students, should be considered in order to improve COVID-19 preventive behaviours in the society. [Article](#).

Trusted Resources

- The Evidence Synthesis Network (ESN) is a collaborative COVID-19 response initiative by Ontario’s research and knowledge production community. The [ESN website](#) is a portal where research evidence requests can be made and includes previously completed ESN briefing notes.
- The [Ontario COVID-19 Science Advisory Table](#) is a group of scientific experts and health system leaders who evaluate and report on emerging evidence relevant to the COVID-19 pandemic, to inform Ontario’s response to the pandemic.
- COVID-19 Evidence Network to support decision-making (COVID-END) in Canada:
 - COVID-END is a time-limited network that brings together more than 50 of the world's leading evidence-synthesis, technology-assessment, and guideline development groups to support decision-making. In addition to Living Evidence Profiles, COVID-END hosts an inventory of best COVID-19 evidence syntheses from around the world. An up-to-date and comprehensive list of sources, organized by type of research evidence, is available on McMaster Health Forum’s COVID-END [website](#).
 - The COVID-19 Evidence Spotlights from COVID-END provide updated information on COVID-19 responses with three types of products from COVID-END in Canada: 1) Canadian spotlights; 2) global spotlights; and 3) horizon scans. To receive an email containing hyperlinks to these products twice a month, [subscribe here](#).

In the second half of February 2022, contributing Canadian evidence synthesis teams shared six newly completed evidence syntheses. One of these syntheses provides insight across three domains of the COVID-END taxonomy (public health measures, clinical management, and health system arrangements) and the remaining focus on public health measures (n=3), clinical management (n=1), and health system arrangements (n=1). Please visit [Canadian Spotlight 14.2](#) to view the evidence, or browse past [Canadian evidence spotlights](#). A complete list of the products is available [here](#).

About RAEB

Through research funding, brokering, translating, and sharing, we promote an enhanced evidence use capacity that supports all aspects of health policy, programming, and investment decision-making. Services include:

- Literature reviews
- Jurisdictional scans
- Economic analysis
- Evaluation planning

Research fund management
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