# Maternal depressive and anxiety symptoms before and during the COVID-19 pandemic in Canada: a longitudinal analysis

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## Excerpted from summary

# Background

Parents have faced substantial social and economic challenges during the COVID-19 pandemic. Preliminary cross-sectional research has demonstrated increases in mental health problems in mothers during the COVID-19 pandemic compared with pre-pandemic estimates. We aimed to study an existing longitudinal cohort of mothers to assess changes in the prevalence of maternal depression and anxiety symptoms as a result of the COVID-19 pandemic over time and at the individual level.

# Methods

In this longitudinal observational study, women who took part in the All Our Families pregnancy cohort in Canada were invited to complete a COVID-19 impact survey between May 20 and July 15, 2020. Women who had not agreed to additional research, had discontinued, were lost to follow-up, or who were not contactable via email were excluded. Maternal depression and anxiety symptoms during the COVID-19 pandemic were compared with three previous estimates collected at 3, 5, and 8-year timepoints (between April, 2012, and October, 2019). Depression symptoms were assessed using the 10-item Center for Epidemiological Studies Depression scale and anxiety symptoms were assessed using the short form of the Spielberger State-Trait Anxiety Inventory. Repeated cross-sectional analyses were done to assess temporal trends and fixed-effects regression models were fitted to assess within-person change over time.

## Findings

Of the 3387 women included in the All Our Families study, 2445 women were eligible and were invited to participate in the COVID-19 impact study, of whom 1333 consented to participate, and 1301 were included in the longitudinal analysis. At the COVID-19 impact survey timepoint, a higher proportion of mothers had clinically significant depression (35·21%, 95% CI 32·48–38·04) and anxiety symptoms (31·39%, 28·76–34·15) than at all previous data collection timepoints. The mean depression score (8·31, 95% CI 7·97–8·65) and anxiety score (11·90, 11·66–12·13) at the COVID-19 pandemic timepoint were higher than previous data collection waves at the 3-year timepoint (mean depression score 5·05, 4·85–5·25; mean anxiety score 9·51, 9·35–9·66), 5-year timepoint (mean depression score 5·43, 5·20–5·66; mean anxiety score 9·49, 9·33–9·65), and 8-year timepoint (mean depression score 5·79, 5·55–6·02; mean anxiety score 10·26, 10·10–10·42). For the within-person comparisons, depression scores were a mean of 2·30 points (95% CI 1·95–2·65) higher and anxiety scores were a mean of 1·04 points (0·65–1·43) higher at the COVID-19 pandemic timepoint, after controlling for time trends. Larger increases in depression and anxiety symptoms were observed for women who had income disruptions, difficulty balancing home schooling with work responsibilities, and those with difficulty obtaining childcare. White mothers had greater increases in anxiety scores than non-white mothers and health-care workers had smaller increases in depressive symptoms than non-health-care workers.

## Interpretation

Compared with previous estimates, the prevalence of maternal depression and anxiety among mothers in a Canadian cohort increased during the COVID-19 pandemic. Financial support, childcare provision, and avoiding the closure of schools, might be key priorities for preventing future increases in maternal psychological distress.

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