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# Understanding the perceived mental health of Canadians during the COVID-19 pandemic

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# Understanding the perceived mental health of Canadians during the COVID-19 pandemic

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## Abstract

**Background:** While the physical health implications of the COVID-19 pandemic are regularly publicly available, the mental health toll on Canadians is unknown. This article examines the self-perceived mental health of Canadians during the COVID-19 pandemic and explores associations with various concerns after accounting for socioeconomic and health factors.

**Data:** The cross-sectional Canadian Perspectives Survey Series 1 collected information related to COVID-19 in late March and early April 2020 concerning labour market participation, behaviours, and health for the Canadian population 15 years and older living in the 10 provinces.

**Methods:** Socioeconomic and health characteristics of respondents as well as concerns about the impact of COVID-19 were examined to determine differences in experiencing excellent or very good compared to good, fair or poor perceived mental health.

**Results:** Just over half of Canadians aged 15 and older (54%) reported excellent or very good mental health during the COVID-19 pandemic. Several concerns were also associated with mental health. Notably, after considering the effects of socioeconomic and health characteristics, women, youth, individuals with a physical health condition and those who were very or extremely concerned with family stress from confinement were less likely to report excellent or very good mental health.

**Interpretation:** These findings point to particular risks for lower perceived mental health during the COVID-19 pandemic. Results highlight various concerns of Canadians which may be associated with mental health, in particular, family stress in the home.

**Keywords:** perceived mental health, COVID-19, social determinants of mental health, concerns, family stress

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The World Health Organization declared the outbreak of the novel coronavirus (COVID-19) an international public health emergency on January 30, 2020, and a pandemic on March 11.<sup>1</sup> Governments and public health authorities worldwide have initiated public health plans to mitigate risks created by the virus, including strict physical distancing, extreme reductions in travel and closures of many businesses and schools. Although the impact on physical health is substantial (including hospitalizations and deaths), the impact of the COVID-19 pandemic on the mental health of Canadians is less clear.

Evidence from the 2003 SARS outbreak and the 2009 H1N1 pandemic demonstrated the toll that public health emergencies can play on the mental health of a population.<sup>2,3</sup> While many individuals may be resilient in the face of a pandemic, a substantial proportion may experience psychological impairment and others may experience increased symptoms of mental disorders related to anxiety or post-traumatic stress.<sup>4</sup>

Early evidence from around the world confirms the negative impact of COVID-19 on mental health. According to Huang and Zhao,<sup>5</sup> one in three Chinese citizens experienced symptoms of anxiety during the COVID-19 pandemic and one in five, depression symptoms. Younger individuals were particularly impacted, another study finding that among a large sample of college students, one quarter reported increased anxiety as a result of the pandemic.<sup>6</sup>

For many Canadians, the challenges of physical distancing, reduced ability to work or contribute to society, and pressures related to taking care of their family in isolation may lead to greater anxiety, loneliness, and stress. Previous findings from Statistics Canada's CPSS1 suggested that fewer Canadians reported excellent or very good mental health during COVID-19 compared to data from 2018.<sup>7</sup>

The mental health consequences of the COVID-19 pandemic may be especially concerning for particular groups of the Canadian population that may already be at risk for lower mental health. This may include women, individuals of lower socioeconomic status, and those with low social support.<sup>2,8,9</sup> It is also possible that situations specifically related to COVID-19, such as concerns about the ability to meet financial responsibilities<sup>10</sup> or particular health conditions (e.g., respiratory disease or cardiovascular diseases) that may compromise an individual's ability to fight the infection,<sup>11</sup> may further worsen mental health at this time. Finally, confinement related to physical distancing and social isolation may contribute to lower mental health,<sup>4,12</sup> in particular among families who are more likely to be balancing multiple responsibilities such as those related to work and home schooling.

The objective of this study is to report on the self-perceived mental health of Canadians during the COVID-19 pandemic. Based on recent data from the CPSS1, this report provides a description of Canadians' perceived mental health based on their socioeconomic and health characteristics, as well as particular concerns that may be related to mental health.

## Methods

### Data source

#### *Canadian Perspectives Survey Series 1 – Impacts of COVID-19*

The cross-sectional Canadian Perspectives Survey Series 1 (CPSS1) collected information related to COVID-19 concerning the labour market, behaviours, and health impacts for the Canadian population 15 years of age or older living in the 10 provinces. The CPSS1 sample was selected from four Labour Force Survey (LFS) rotation groups that responded to the LFS for the last time in April, May, June, or July of 2019. Excluded from the LFS coverage are persons living on reserves and Aboriginal settlements in the provinces; full-time members of the Canadian Armed Forces; the institutionalized population; and households in extremely remote areas with very low population density. These groups together represent less than 2% of the Canadian population aged 15 or older. Data were collected from March 29 to April 3, 2020. One household member was selected at random. Of the 7,242 individuals who were invited to complete the survey, 4,627 people (52% women) responded, yielding a 63.9% response rate representing 31 million Canadians. Additional information on the survey is available at: <https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=5311>

### Measures

Several socioeconomic and health characteristics of respondents were examined, including current age, sex, highest level of education, household size, presence of children under the age of 18 living in the household, and marital status. In terms of employment or financial stability, current employment status and concern about COVID-19 impacts on the ability to meet financial obligations were included in the current study. Finally, whether respondents had a compromised immune system as well as whether they had diabetes or a chronic condition affecting their lungs, heart or kidneys were considered.

Individuals also reported whether their mental health was excellent, very good, good, fair or poor. These responses were dichotomized to reflect better (excellent, very good) and worse (good, fair, poor) mental health similar to other studies.<sup>13</sup> Finally, respondents indicated their level of concern for a variety of situations related to health, society and family, including concern for their own health, civil disorder, and family stress.

### Analysis

Descriptive statistics were examined overall and separately for individuals with better or worse mental health. Comparison tests (chi-square tests) were performed between the two groups. Correlations among the concern variables were examined to explore the degree to which they were related. They ranged from  $r=0.05$  between overloading the health system and violence in the family, to  $r=0.80$  between the ability to cooperate during the crisis and the ability to cooperate and support one another after the crisis. Finally, a multivariable logistic regression model was conducted to explore associations between all statistically significant factors (based on the comparison tests) and mental health. This model excluded two concern variables: (a) *violence in the home*, due to low proportions (8% in the total sample) and the uncertainty as to whether violence was in their own home or in general, as well as (b) *ability to cooperate or support one another after the crisis*, due to a high correlation with the *ability to cooperate during the crisis*. All analyses were performed using survey and bootstrap weights in order to render the sample representative of the Canadian population living in the 10 provinces.

### Results

Overall, 54% of Canadians aged 15 and older reported excellent or very good mental health during the COVID-19 pandemic. Descriptive characteristics of the sample as well as a comparison of the characteristics of those who reported better or worse mental health are shown in Table 1. Younger individuals and

women were less likely to report better mental health than worse mental health. By comparison, individuals with higher education (i.e., a Bachelor's degree or above), who were married or common law, or were living in a household with two people were more likely to report better versus worse mental health. In general, respondents with children under 18 living in their household were less likely to report better mental health than those who did not have children. The ability to meet financial obligations also showed a significant difference—among those who felt that COVID-19 had a minor or no impact on their ability to meet financial obligations, 76% reported excellent or very good mental health, whereas among those who reported a moderate or major impact, only 25% reported excellent or very good mental health. Finally, individuals with a compromised immune system as well as those with diabetes or a chronic condition affecting their lungs, heart, or kidneys were less likely to report better mental health (compared to worse mental health).

Overall, approximately four in five Canadians were extremely or very concerned about overloading the health system and vulnerable peoples' health. Individuals' concerns about the impact of COVID-19 also differed between those with better mental health compared with worse mental health. For example, individuals who reported better mental health were less likely to be very or extremely concerned about a member of their household's health, civil disorder, and family stress from confinement (see Figure 1 and Table 2).

Finally, a multivariable model was explored to determine the independent associations of the socioeconomic, health, and concern variables in predicting better mental health (Table 3). When all factors were considered simultaneously, respondents who were younger, female, and those with a compromised immune system or with diabetes or a chronic condition were less likely to report better mental health. In addition, respondents who were very or extremely concerned about family stress from confinement

**Table 1**  
**Characteristics of the 2020 Canadian Perspectives Survey Series 1 sample**

Characteristic	Total			Perceived mental health					
	Proportion	Low 95% confidence interval	High 95% confidence interval	Excellent/very good			Good/fair/poor (reference group)		
				Proportion	Low 95% confidence interval	High 95% confidence interval	Proportion	Low 95% confidence interval	High 95% confidence interval
	percent								
<b>Age as of March 29, 2020</b>									
15 to 24	14.2	14.2	14.2	11.0*	8.9	13.6	18.2	15.8	21.0
25 to 34	16.8	16.8	16.8	14.7*	13.1	16.5	19.4	17.5	21.4
35 to 44	16.1	16.1	16.1	14.0*	12.7	15.5	19.0	17.4	20.7
45 to 54	15.2	15.2	15.2	14.3	12.8	15.9	16.8	15.1	18.7
55 to 64	16.7	16.7	16.7	19.1*	17.6	20.7	13.8	12.1	15.6
65 and older	21.0	21.0	21.0	26.8*	25.1	28.7	12.7	10.9	14.7
<b>Sex of respondent</b>									
Male	48.3	47.7	48.9	53.5*	51.2	55.8	42.6	39.9	45.4
Female	51.7	51.1	52.3	46.5*	44.2	48.8	57.4	54.6	60.1
<b>Respondents' highest level of education ever completed</b>									
High school graduation or less education	33.5	31.3	35.7	32.0	28.7	35.5	34.4	31.0	37.9
Some post-secondary education‡	38.4	36.3	40.6	37.0	34.0	40.1	40.1	36.7	43.5
Bachelor's degree or above	28.1	26.5	29.8	31.0*	28.6	33.5	25.6	22.9	28.4
<b>Employment status</b>									
Employed and at work††	48.7	46.6	50.8	47.8	44.7	50.9	50.5	46.9	54.2
Employed but absent from work due to COVID-19	8.9	7.6	10.4	8.9	7.2	10.9	9.1	7.2	11.5
Not employed	42.4	40.2	44.5	43.3	40.2	46.5	40.4	36.7	44.1
<b>Household size (members)</b>									
1	15.6	14.2	17.1	14.9	13.2	16.7	16.3	14.2	18.5
2	51.7	49.6	53.7	55.7*	52.5	58.9	47.6	44.2	51.0
3	17.3	15.3	19.4	17.0	14.3	20.0	18.1	15.1	21.6
4 or more	15.4	13.3	17.8	12.4*	9.9	15.5	18.1	14.7	22.0
<b>Presence of a household member under 18 as per current age</b>									
Yes	34.6	32.5	36.8	31.9*	29.0	34.9	38.0	34.7	41.5
No	65.4	63.2	67.5	68.1*	65.1	71.0	62.0	58.5	65.3
<b>Marital status of respondent</b>									
Married or living common-law	63.0	61.2	64.8	68.4*	65.4	71.2	56.9	53.5	60.2
Widowed, separated or divorced	9.7	8.7	10.7	9.6	8.3	11.2	9.5	7.9	11.3
Single, never married	27.3	25.8	28.9	22.0*	19.3	24.9	33.6	30.5	37.0
<b>COVID-19 impact on ability to meet financial obligations or essential needs</b>									
Minor impact, no impact or too soon to tell	71.0	68.7	73.2	75.5*	72.5	78.3	66.0	62.4	69.5
Moderate or major impact	29.0	26.8	31.3	24.5*	21.7	27.5	34.0	30.5	37.6
<b>Compromised immune system</b>									
Yes	14.1	12.7	15.6	11.2*	9.6	13.0	17.3	15.0	19.8
No	85.9	84.4	87.3	88.8*	87.0	90.4	82.7	80.2	85.0
<b>Diabetes or chronic condition affecting lungs, heart or kidneys</b>									
Yes	17.6	16.1	19.2	15.8*	13.8	18.0	19.9	17.4	22.8
No	82.4	80.8	83.9	84.2*	82.0	86.2	80.1	77.2	82.6

\*significantly different from reference group ( $p < 0.05$ )

‡ Including trades certificate or diploma, community college, CEGEP or university certificate below Bachelor's degree.

†† Employed and at work, Employed and at work at least part of the reference week or employed but absent from work for unknown reason or reasons not related to COVID.

Source: Statistics Canada, Canadian Perspectives Survey Series 1, March/April 2020.

were also less likely to report better mental health. The latter finding suggests that although various health, social, and family-related concerns may be associated with mental health, family stress appears to be an important factor over and above other concerns related to the impact of COVID-19.

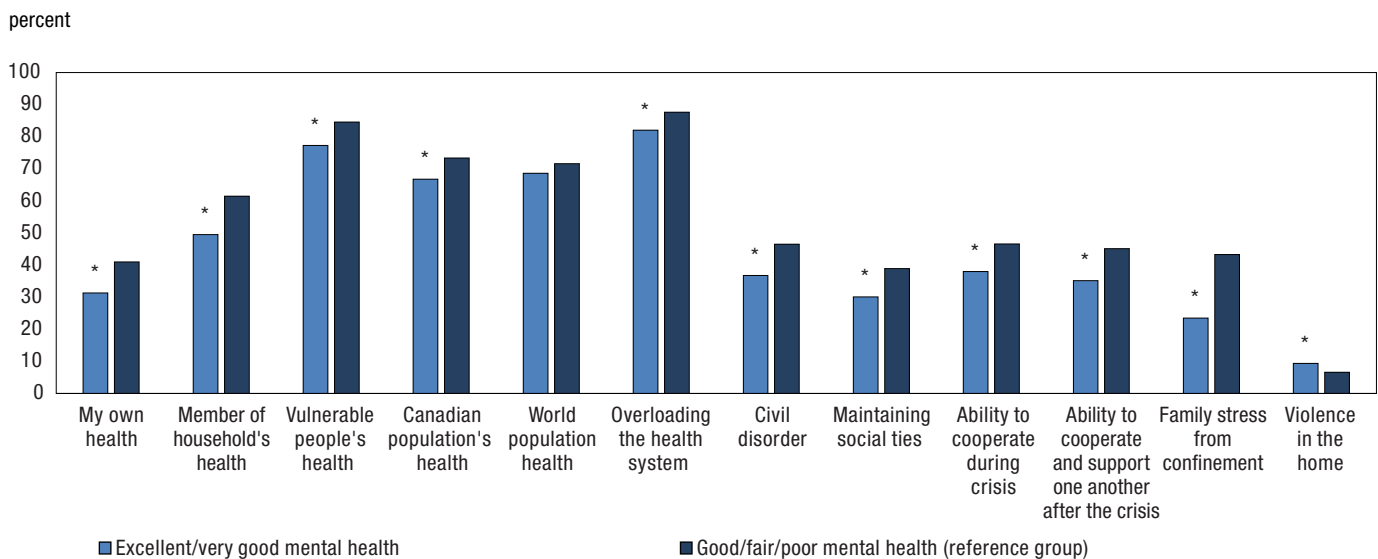
## Discussion

The objective of this study was to describe the self-perceived mental health of Canadians during the early phase of the COVID-19 pandemic. The results show that younger adults, women, and individuals with a compromised immune

system, diabetes, or chronic health condition are less likely to report better mental health. Although the ability to meet financial obligations was not statistically significant in the final model (due to an association with the other variables also included in the model), the proportion of individuals who reported better mental

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**Figure 1**  
Canadians' concerns about the impact of COVID-19



\*significantly different from reference category (p < 0.05)  
Source: Canadian Perspectives Survey Series 1, March/April 2020.

**Table 2**  
Concerns about the impact of COVID-19

Proportions of Canadians who are very or extremely concerned about...	Total			Perceived mental health					
	Proportion	Low 95% confidence interval	High 95% confidence interval	Excellent/very good			Good/fair/poor (reference group)		
				Proportion	Low 95% confidence interval	High 95% confidence interval	Proportion	Low 95% confidence interval	High 95% confidence interval
percent									
My own health	36.4	34.3	38.5	31.3*	28.5	34.2	41.0	37.5	44.5
Member of household's health	55.2	52.8	57.5	49.5*	46.3	52.8	61.5	58.1	64.8
Vulnerable people's health	80.8	79.1	82.4	77.3*	74.7	79.6	84.6	82.0	86.8
Canadian population's health	70.0	67.8	72.1	66.8*	63.5	69.9	73.4	70.2	76.3
World population health	69.8	67.4	72.0	68.6	65.4	71.6	71.6	68.3	74.6
Overloading the health system	84.4	82.6	86.0	82.0*	79.4	84.3	87.6	85.3	89.6
Civil disorder	41.4	39.1	43.8	36.8*	33.9	39.8	46.5	42.7	50.4
Maintaining social ties	33.8	31.6	36.2	30.1*	27.3	33.0	38.9	35.4	42.6
Ability to cooperate during the crisis	42.1	39.8	44.4	38.0*	34.9	41.1	46.6	43.0	50.2
Ability to cooperate and support one another after the crisis	39.4	37.1	41.7	35.2*	32.1	38.4	45.1	41.5	48.8
Family stress from confinement	32.4	30.1	34.8	23.5*	20.8	26.4	43.2	39.6	47.0
Violence in the home	8.1	6.9	9.5	9.4*	7.6	11.5	6.6	5.2	8.5

\*significantly different from reference category (p < 0.05)  
Source: Canadian Perspectives Survey Series 1, March/April 2020.

health was much smaller. Only 25% of respondents who felt that COVID-19 would have a major or moderate impact on their ability to meet their financial obligations reported excellent or very good mental health compared to 75% of those who felt that COVID-19 would have a minor or no such impact.

The findings also suggest that family factors may play an important role

in Canadians' mental health during COVID-19. Respondents with at least one child in the household were generally less likely to report better mental health. In the presence of all factors in the multivariable model, concerns about family stress due to confinement was significantly associated with worse mental health. This could suggest that family stress is particularly important for the

mental health of Canadians during this period.

In terms of the specific concerns reported by Canadians, more than four in five Canadians were very or extremely concerned about overloading the health care system and about vulnerable people's health. In addition, 55% were concerned about the health of a household member, and one in three about family stress due

**Table 3**  
**Results from the logistic regression analysis predicting perceived excellent or very good mental health, selected sample characteristics**

	Logistic regression analysis results				
	Beta coefficient	Standard error	Odds ratio	Lower 95% confidence level (OR)	Upper 95% confidence level (OR)
Intercept	-0.33**	0.13	....	...	...
<b>Age (reference: 65 and older)</b>					
15 to 24	-0.47*	0.23	0.24	0.13	0.45
25 to 34	-0.34*	0.13	0.28	0.18	0.42
35 to 44	-0.45***	0.12	0.25	0.17	0.36
45 to 54	-0.18	0.12	0.32	0.22	0.47
55 to 64	0.48***	0.13	0.62	0.44	0.88
<b>Sex</b>					
Female (reference: male)	-0.20***	0.06	0.67	0.53	0.83
<b>Education level (reference: Bachelor's degree or above)</b>					
High school graduation or less education	-0.07	0.10	0.80	0.58	1.10
Some post-secondary education, including trades certificate or diploma, community college, CEGEP or university certificate below Bachelor's degree	-0.09	0.08	0.78	0.61	0.99
<b>Household size (reference: 2 members)</b>					
1	-0.03	0.15	0.96	0.64	1.44
3	0.19	0.13	1.19	0.83	1.70
4 or more	-0.17	0.17	0.83	0.54	1.29
<b>Presence of children in the household</b>					
Children < 18 years old (reference: no children < 18 years old)	0.13	0.07	1.30	0.99	1.71
<b>Marital status (reference: married or living common-law)</b>					
Widowed, separated or divorced	-0.09	0.12	0.77	0.49	1.19
Single, never married	-0.09	0.12	0.77	0.51	1.17
<b>Ability to meet financial obligations (reference: minor impact, no impact or too soon to tell)</b>					
Moderate or major impact	-0.12	0.06	0.78	0.61	1.01
<b>Has a compromised immune system</b>	-0.29***	0.08	0.56	0.41	0.75
<b>Has diabetes or chronic condition affecting lungs, heart or kidneys</b>	-0.21**	0.08	0.65	0.48	0.89
<b>Very or extremely concerned about</b>					
My own health	-0.08	0.07	0.85	0.64	1.13
Member of household's health	-0.08	0.07	0.85	0.64	1.14
Vulnerable people's health	-0.04	0.08	0.92	0.68	1.24
Canadian population's health	-0.05	0.07	0.91	0.69	1.18
Overloading the health system	-0.09	0.08	0.84	0.61	1.16
Civil disorder	-0.02	0.07	0.97	0.75	1.25
Maintaining social ties	-0.03	0.07	0.94	0.72	1.24
Ability to cooperate during crisis	0.08	0.07	1.18	0.91	1.52
Family stress from confinement	-0.34***	0.07	0.50	0.39	0.65

... not applicable

\* significantly different from reference category ( $p < 0.05$ )

\*\* significantly different from reference category ( $p < 0.01$ )

\*\*\* significantly different from reference category ( $p < 0.001$ )

**Notes:** OR = odds ratio. The number of observations is 4,202.

**Source:** Statistics Canada, Canadian Perspectives Survey Series 1, March/April 2020.

to confinement. Specific to this study, individuals' concerns about the impact of COVID-19 differed between those with better mental health and worse mental health. This finding is similar to those from China, whereby 75% of Chinese respondents were concerned about a family member catching COVID-19, and those who were more concerned reported higher levels of stress.<sup>14</sup>

Several limitations of the current study should also be noted. First, slightly more

Canadian-born individuals compared to those not born in Canada responded to the CPSS1, limiting an examination of differences for immigrant and newcomers. In addition, because of the brevity of the survey, only a selected number of characteristics of the sample can be described; more detailed measures of mental health, including specific symptoms of mental health disorders, were not collected. It is also important to note that the CPSS1 was not conducted in long-term care

residences or in remote areas with low population density; therefore, the findings should be interpreted accordingly. Finally, it was not possible to explore a more fine-grained breakdown of age categories, including those over age 80 who may be particularly isolated or have a different profile or association with mental health outcomes.

Many factors have been suggested to alleviate stress and anxiety regarding COVID-19, including increased social

support<sup>6</sup> and providing up-to-date, accurate information.<sup>9</sup> According to Goldmann and Galea,<sup>15</sup> post-disaster mental health conditions reach their peak within a year after the situation but

some symptoms can continue for months or years, suggesting that mental health consequences may continue long after the days of physical distancing end. The findings of this study may assist in iden-

tifying targeted groups for intervention strategies for individuals particularly at risk for lower mental health during the pandemic, especially with regards to the concerns highlighted in this report.

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