



## **The Psycho-Social Impacts of Covid-19: A Review of the Literature**

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This report provides an overview of literature on the psycho-social impacts of disasters and epidemics in order to anticipate potential impacts of the Covid-19 pandemic on the population.

### **Summary of Findings**

**Impacts of Disasters and Epidemics on Mental Health:** Studies have indicated a strong relationship between epidemics and disasters and increased mental health concerns. Disasters and Epidemics can introduce several shocks that are associated with elevated levels of acute psychological distress that can result in Post-Traumatic Stress Disorder, Major Depressive Disorder, Substance Use Disorder, and other psychological symptoms and comorbidities. While historical epidemics are most commonly associated with increased rates of depression and anxiety, research suggests that the COVID-19 pandemic may present unique psychosocial impacts due to its length, spread, media exposure, and unpredictability.

**Impacts of COVID-19 on Canadian Mental Health:** Recent data suggests that the mental health of Canadians has been significantly impacted by the COVID-19 pandemic, with reports of anxiety increasing from 5% to 20% and depression from 4% to 10%. Increased levels of anxiety and depression were found to be associated with economic loss, concern for family members, self isolation, household conflict, and social media and news exposure. Several Canadian cities have experienced an increase in distress center calls and predict increased suicide rates across Canada due to unemployment.

**Vulnerable and Most Impacted Populations:** Specific populations have been found to be more vulnerable to experiencing psychological distress due to the COVID-19 pandemic. Children have especially been impacted by media exposure, family conflict, and loss of routine. Visible minorities and recent immigrants have reported increased experience of stigma and racism and gender diverse individuals have been found to be more worried about the impacts of the epidemic than male or female counterparts. Individuals with low social economic status, seniors, and individuals with pre-existing health and mental health concerns are also adversely impacted.

**Mental Health Supports:** Findings indicate that, despite increased distress center calls, there has been a slight decrease in individuals accessing mental health supports during the outbreak (from 22% to 20%). In addition, 33% of Canadians surveyed reported limited access to mental health supports since the pandemic and 27% reported that the quality of mental health support has declined. In this way, an increased percentage of Canadians are in need of mental health supports, but fewer are accessing them since COVID-19, and those who are, are not getting the quality of support needed.

**Conclusion:** A large body of research indicates that historical disasters and pandemics can have lasting negative impacts on the mental health of survivors. Emerging data on the COVID-19 pandemic demonstrates that the virus has been a disaster that has and will have lasting impact

on the mental health of individuals on a local, national, and global scale. Recent Canadian surveys report increased levels of anxiety, depression, and isolation. Specific populations are found to be more impacted and at risk of developing adverse psychological symptoms, especially children, immigrants and visible minorities, and gender diverse individuals. The global reach of the pandemic, media-coverage, and wide-spread loss of routine and social network has exposed a significantly greater population to stress, loss, and uncertainty than historical disasters and epidemics, making it increasingly necessary to improve access and quality of mental health resources to impacted individuals and vulnerable populations

## **1. Introduction**

While there is no consistent definition of disasters used in literature, many studies agree that disasters share three primary characteristics according to Goldmann & Galea (2014). First, disasters threaten harm or death to a significant percentage of the population; second, they cause disruptions of service, social networks, and social processes which can result in loss of resources; and third, disasters result in secondary consequences, such as identifiable mental and physical health outcomes (Goldmann & Galea, 2014). While epidemics are a unique category of emergency and do not have the same catastrophic physical repercussions as natural disasters, epidemics can share the same three primary characteristics as disasters described historically and can result in physical harm, service and resource disruption, and lasting psycho-social impacts. By this definition, COVID-19 is found to be a “disaster” that has significantly impacted the lives of individuals on a local, national and global scale. It is therefore valuable to anticipate the short-term and long-term impacts of the virus by exploring key trends in how historical disasters and epidemics have impacted individuals, especially the most vulnerable populations. The following document uses key learnings from historical disasters and epidemics and emerging research on the global and national impacts of COVID-19 to explore the psycho-social impacts of COVID-19 on mental health.

Findings indicate that the increased isolation, financial unpredictability, stress, and shock of the COVID-19 pandemic can result in severe and long-term psychological distress. Specific demographics and vulnerable groups, as described in this report, have also been found to be more at risk during uncertain times, and can therefore feel psychological impacts of COVID-19 more drastically (Makwana, 2019). Despite the increase in mental health concerns of Canadians during the pandemic and findings from historical disasters and pandemics indicating the variety of adverse impacts of emergencies on mental health, findings reveal that Canadians are not receiving accessible and quality resources to help them cope with complex psycho-social impacts and uncertainties introduced by COVID-19.

## **2. Impacts of Disasters and Epidemics on Mental Health**

Studies have indicated a strong relationship between epidemics and disasters and increased mental health concerns. Unpredictable impacts of emergencies can leave victims in a state of shock (Makwana, 2019). Victims have been found to deny loss and try to escape from reality, which has been found to make them more vulnerable to stress, anxiety, depression, and other maladaptive reactions. Several factors have been associated with psychological vulnerability. These include “displacement of family, lack of preparedness for disaster, disruption in the family

bond, lack of social support, and negative coping skills” ([Makwana, 2019](#)). There are also several “losses” associated with disasters that can cause feelings of shock and despair. These include loss of identity due to unexpected employment transitions and socio-economic loss, loss of a loved one, resources, daily routine, and social support. These shocks have been associated with elevated levels of acute psychological distress following historical epidemics, natural disasters and states of emergencies, and have historically resulted in an increased risk of developing PTSD, major depressive disorder, substance abuse disorder, and several other psychological symptoms and comorbidities. Historically, victims have been found to develop:

- a) **Post-Traumatic Stress Disorder (PTSD):** Studies have found Post Traumatic Stress Disorder to be particularly prevalent among direct victims of disasters and emergencies, with one study indicating a prevalence of PTSD diagnosis in 30-40% of victims ([Goldmann & Galea, 2014](#)). PTSD has also been reported among rescue workers (10-20%) and in the general population (5-10%). The prevalence of PTSD has also been found to be particularly high among children directly impacted, especially when exposed to direct mass violence. Studies however show varying results of the prevalence of PTSD among disaster survivors due to differences in disaster type, degree of exposure, and methods of measurement ([Goldmann & Galea, 2014](#)).

While the prevalence of PTSD is lower in historical pandemics compared to disaster victims, several studies have also found increased risk and prevalence of PTSD in epidemic survivors. A study of Ebola survivors by [Hugo, et al., \(2015\)](#) found that witnessing the death of a loved one and stigma upon returning to their community predicted an increased risk of developing PTSD and resulted in 22% of participants being diagnosed with the disorder. While only 2% of participants were found to have PTSD, a study of the effects of H1N1 in Chinese students found that being female, “having H1N1 influenza, having family members, friends, or acquaintances with H1N1 influenza, and being afraid of H1N1 influenza” were significant predictors of developing PTSD ([Xu et al., 2011](#)).

- b) **Major Depressive Disorder:** According to [Goldmann & Galea \(2014\)](#), “In disaster research, depression is, after PTSD, the second most commonly studied post-disaster mental health condition; however, owing to its large burden in the general population, it may be the most prevalent post-disaster and post epidemic disorder”. Depression was found to be the most prevalent psychological symptom found in Ebola survivors. A study in Guinea reported depression in 17% of the 713 participants ([James et al, 2019](#)). A study in Uganda found a prevalence of 24% in Ebola survivors. The study also found that survivors of lower socio-economic status were less likely to be depressed compared to participants with higher socio-economic status (15% vs 22%). Survivors experiencing depression were more likely to experience “stigma, fatigue, palpitations, weight loss, decreased libido, insomnia, pain/numbness, visual problems, anxiety, headache, hearing loss”, and several other symptoms compared to survivors without feelings of depression ([James et al, 2019](#)). Depression has also been found to increase for survivors of other epidemics, including survivors of Dengue Fever ([Gunathilaka et al., 2018](#)) and Influenza ([Bornand et al., 2016](#)).

- c) **Substance Use Disorder:** Several studies indicate an increase in the use of alcohol, drugs, and cigarettes after a disaster as a means of coping with the reality and shock of the emergency. [Goldmann & Galea \(2014\)](#) note that 15% of survivors of the Oklahoma City

bombing reported using alcohol to help them cope with their experience. Similarly, 10% of the New Yorkers post WTC attacks reported increased cigarette use, 25% alcohol use, and 3% marijuana. Several studies argue that higher use of substances is found primarily among those with “prior substance use problems or those who developed other psychopathology in response to the disaster (Goldmann & Galea, 2014).” A study by Martin & Cooper, (2020) with a reliable sample of 1,803 Canadian adults found that 28% of the total participants surveyed reported increased use of alcohol and 29% increased use of cannabis due to the COVID-19 pandemic. Substance use was found to be higher for participants diagnosed with an anxiety disorder (34% alcohol and 47% cannabis) and depression (33% alcohol and 41% cannabis). Despite these increased levels, 75% of participants found that increased use of alcohol did not have a strong positive or negative impact on their mental health. Similarly, 64% of participants found the same to be true for their increased use of cannabis. Use of illegal drugs was also found to have increased for individuals diagnosed with anxiety disorder (37% of participants) or depression (31% of participants). The study also found that the use of alcohol (36% of participants), Cannabis (31% of participants) and illegal drugs (25% of participants) was more likely to increase for individuals with children under the age of 18 Martin & Cooper, (2020).

- d) **Schizophrenia:** Several studies indicate that disasters and epidemics can exacerbate schizophrenia. A study by Aoki et al., (2012) found that extensive media coverage of a disaster can increase hospitalization rates of schizophrenia. While 7 people in Tokyo were killed during the Great East Japan Earthquake, extensive media coverage indirectly exposed residents to the disaster and led to an increase in mandatory hospitalizations of people with schizophrenia in the 6 months following the earthquake (Aoki et al., 2012). Other studies, such as research conducted on the Christchurch, New Zealand earthquake reported a decrease in hospitalization for schizophrenia (SAMHSA, 2019).

While studies disagree on whether the prevalence of schizophrenia increases after a disaster, several studies note that individuals with schizophrenia are more vulnerable and at-risk during pandemics. A study by Kozloff et al., (2020) cautions that individuals with schizophrenia may be more susceptible to being infected by the COVID-19 virus due to several factors including “cognitive impairment, lower awareness of risk, and barriers to adequate infection control including congregate living (Kozloff et al., 2020).”

- e) **Other Psychological Symptoms:** Several studies indicate a variety of psychological effects post disaster including anxiety disorder (GAD), death anxiety, panic disorder, phobias, prolonged grief disorder (PGD), stress, suicidality, sleep disruption, and remorse. Disasters have also been found “to precipitate other physical symptoms such as headache, fatigue, abdominal pain, and shortness of breath.” “The prevalence of these symptoms varies by study, from 3% to 78%” (Goldmann & Galea, 2014). Participants of a study in Sierra Leone reported 13.8% of survivors feeling shame or embarrassment of their status as survivors (James et al, 2019). Several other studies of historical pandemics document high levels of anxiety found in up to 10.7% of Ebola survivors in Sierra Leone. While most symptoms gradually dissipate, some can have persisting long-term effects.
- f) **Comorbidity:** Goldmann & Galea (2014) note that many of the disorders discussed above are not found in isolation in disaster and epidemic survivors. “Disaster-related PTSD is often

accompanied by symptoms of other anxiety disorders, MDD, and substance use disorders (Goldmann & Galea, 2014)." PTSD and Major Depression are often related as both disorders are "psychological consequences of traumatic exposure. Suffering with PTSD brings on secondary depression, and symptoms that characterize the two conditions overlap."

### **3. Long term Impacts of Disasters and Epidemics on Mental Health**

While it is difficult to predict the long-term impacts of COVID-19 on mental health, several studies indicate that the psychological impacts of disasters can persist in victims several years after the disaster. Results can be impacted by a variety of factors such as type of disaster and how directly impacted the survivor was. One study, following the 1995 Oklahoma City Bombing, found that 7 years after the bombing, 73% of the participants with major depression surveyed were in full remission (SAMHSA, 2019). Remission was found to be correlated with the individual's level of educational attainment, however correlation with gender, ethnicity, age, or pre-disaster psychiatric history was not found. 98% of survivors experiencing major depression post disaster were receiving mental health services. One year following the midwestern flood, 16% of survivors surveyed were still experiencing flood related PTSD (SAMHSA, 2019).

A report published by the Mental Health Commission of Canada (2020) predicts that "the mental health impacts from COVID-19 will follow a different pattern than psychiatric and mental health outcomes after natural disasters or shorter, more contained epidemics. The prevalence and severity of mental health problems and illnesses resulting from the pressures of COVID-19 will depend on how the pandemic manifests in specific regions and the responses that are implemented. Prolonged periods of quarantine could worsen psychological symptoms. A one-size-fits-all approach is likely to be ineffective. Rather, we will need to ensure that we can evaluate the effectiveness of various interventions and share the lessons learned quickly (Mental Health Commission of Canada, 2020)." .

### **4. COVID-19 and Mental Health**

While some populations are more at risk and impacted by disasters and pandemics than others, a study by Martin & Cooper (2020) has found that the mental health of Canadians has been significantly impacted by the COVID-19 pandemic. Approximately 2 in 10 Canadians surveyed indicated that they have been diagnosed with either an anxiety disorder (18%) or depression (17%). Since COVID-19, reports of high levels of anxiety have increased from 5% to 20% and depression from 4% to 10%. Women and younger adults between the age of 18-34 are found to be significantly more likely to have mental health diagnosis. The study also found that 16% of participants predicted that they would experience increased levels of depression if social distancing and self-isolation were to persist for another 2 months. Alberta has been found to have the "highest prevalence of those diagnosed with an anxiety disorder (23%), while Quebec (13%) and the Prairies (15%) are among the lowest. Atlantic Canada (25%) and Alberta (22%) have the highest number of those who report being diagnosed with depression and the lowest prevalence is in Quebec (5%)" Martin & Cooper, (2020).

Stress and mental health due to COVID-19 was found to be associated with several factors highlighted by Martin & Cooper, (2020) including:

- The impact of the pandemic on the economy and employment is found to be the highest concern from participants surveyed (48%) “many are worried about losing work hours or pay (42%), getting laid off themselves (38%) or having a family member lose their job (43%), and some have already suffered a recent job loss (57%).
- Concern for family members: Canadians have also been found to be more concerned about their family members catching the virus (47%) than they are of catching it themselves (35%).
- Self Isolation: 41% of participants have also found self-isolation to be having a negative impact on their mental health.
- Household Conflict: 27% of participants have found household non-physical conflict to have increased, especially for households who have children under the age of 18 (36%).
- Social Media and News Coverage: 36% of participants are also experiencing a mental toll from daily news coverage on the outbreak.

These factors are having a strong negative impact on the mental health of Canadians Martin & Cooper, (2020).”

## **5. Vulnerable and Most Impacted Populations**

Some populations have been found to be more vulnerable to experiencing psychological impacts after a disaster and during COVID-19. Children, directly exposed victims and first responders, low income individuals, individuals with disabilities, seniors, visible minorities, women and gender diverse individuals, and Individuals with pre-existing mental health concerns are most at risk during uncertain times, and can therefore feel psychological impacts of COVID-19 more drastically (Makwana, 2019). The following section will describe the psychosocial impacts that historical disasters and pandemics have had on vulnerable populations as well as highlight emerging data on the impact of COVID-19 specifically.

### ***Children and Adolescents***

Post disaster, children and adolescents are more likely to develop PTSD, depression, anxiety, emotional distress, and sleep disorders (Makwana, 2019). Negative post disaster adaptive behaviours can have many lasting negative impacts on children, impairing their social and emotional development (Stafford et al., date unknown).

A child or adolescent’s reaction to a disaster has been found to vary widely depending on their circumstances. Studies have found that the following characteristics and qualities can negatively influence a child’s ability to cope with the shock of emergencies and can cause lasting anxiety, depression, and mental health concerns:

- a) The extent of exposure to the event: “Acute situations of short duration that generate few changes in everyday life cause less psychological damage than those that are prolonged and cause extensive damage to the social environment (Stafford et al., date unknown).” The amount of support during and after the disaster, as well as the amount of personal loss and social disruption are significant contributors to a child and adolescent’s ability to cope with shock. In this way, children and youth who have been most impacted by school closure, isolation, and other changes to their routine may experience more negative psychological

impacts. Children who have had direct exposure to the epidemic, via a family member becoming ill, getting laid off, or experiencing domestic violence, may also be more likely to develop negative psycho-social coping behaviours (Stafford et al., date unknown).

- b) **Exposure to Social Media:** Exposure to social media has also been found to influence a child's ability to cope with emergency. "Repetitive exposure of children to terrifying images on television has an emotional impact on them. Children may misunderstand these images and believe that the event is ongoing or more severe or closer to them than in reality (Stafford et al., date unknown).” Indirect exposure to the emergency through social media has been associated with higher levels of anxiety and emotional disturbance in children who are otherwise not directly exposed or impacted by the disaster.
- c) **Impact on Parents or Caregivers:** Children are sensitive to how their family and community have been impacted by the state of emergency. Adults who have been impacted by a disaster may be experiencing stress, loss of routine, and loss of supports. These changes can impact one's ability to care for a child and can expose the child to additional stress. Previously tense and conflicting family relationships can result in additional strain on family dynamics and can expose children to domestic violence and feelings of helplessness and insecurity.
- d) **Child Abuse:** Child abuse has been found to increase after a natural disasters (WHO, 2005). Studies indicate that "inflicted traumatic brain injury (TBI) is one of the most severe forms of child abuse, often leading to hospitalization and even death". Following Hurricane Floyd in North Carolina, TBI rates increased 5 times for children under the age of 2. Children have also been found to be exposed to increased interpersonal violence, especially sexual abuse during disasters (Stafford et al., date unknown).

A recent study by Statistics Canada (2020B), on the impacts of COVID-19 on Canadian families and children, found that 71% of parents were extremely concerned about their children's social engagement and 54% were extremely concerned about their child's loneliness or social isolation. 64% of parents were also extremely worried about their child's amount of screen time. While parents have been found to be worried about this, the study also indicates that children have been engaging in a variety of activities such as reading daily (62% of families), physical activities 3-5 days per week (26% of families), and other activities at least 3 times per week such as music, drama or art, and developing other skills (approximately 50% of families) (Statistics Canada, 2020).

### ***Directly Exposed Victims and Responders***

As previously mentioned, individuals who have been directly impacted by a disaster or pandemic are also more at risk of experiencing mental health issues, especially a state of fear and shock, persistent grief, maladjustment and dysfunctionality (Makwana, 2019). Victims directly exposed to disasters are significantly more likely to develop PTSD, with studies estimating 30-40% of direct victims developing PTSD post disaster, compared to 5-10% of the general population.

Several studies indicate that first responders and medical professionals are at a greater risk of developing adverse psychological symptoms. A case study of EMS professionals found 6.8% reported depression and 5.9% stress. A study of German emergency physicians found that 16.8% had probable PTSD (SAMHSA, 2019). A study by Abbot et al (2015) found that 37% of EMS

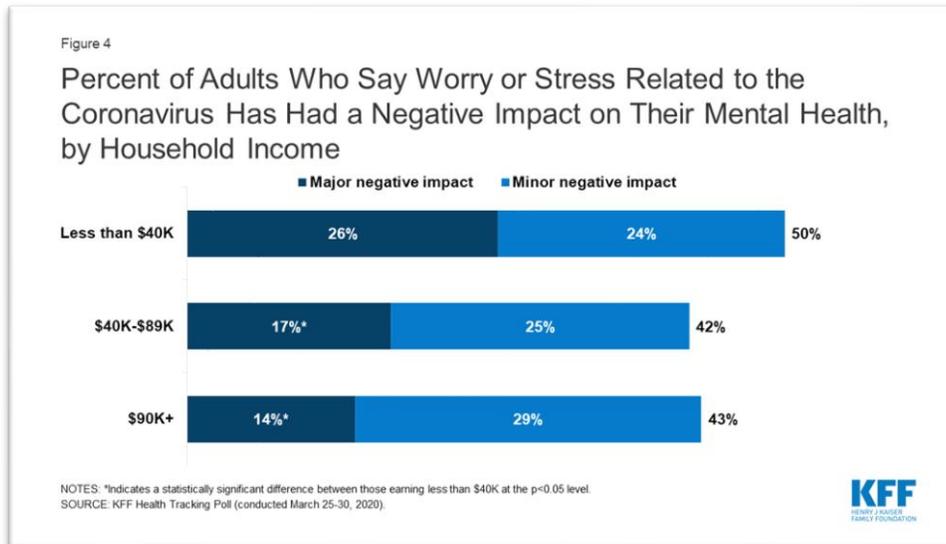
professionals had contemplated suicide, which was found to be nearly 10 times more prevalent than the average rate of American adults. During disasters, research has found these rates to increase significantly. One study by FSEAP (2020) found that among medical teams responding to the great East Japan Earthquake, 21.4% were diagnosed with clinical depression. While there is limited research on the effect of COVID-19 on the mental health of medical and first responders, several articles predict that that healthcare workers and first responders may experience unique challenges due “long shifts, infrequent breaks, new policies and procedures, decreased socialization”, and fear of illness (FSEAP, 2020). These factors can increase feelings of stress, anxiety, isolation, and depression.

While COVID 19 has not displaced as many individuals compared to victims of natural disasters, individuals stranded away from home, exposed to the illness or death of a loved one, or experiencing a sudden and large-scale loss of routine and identity may experience similar psychological effects. As previously mentioned, social media can play a role in making individuals, especially children, feel more impacted and exposed to the disaster than they are in reality (Stafford et al., date unknown). A study by Panchal et al., (2020) found that individuals experiencing the most disruption due to COVID-19 are more likely to experience more negative mental health impacts than those less disrupted. “28% of people experiencing a lot of disruption in their lives due to coronavirus reported major negative mental health impacts, compared to 15% of those experiencing just some disruption and 10% of those with little or no disruption (Panchal et al., 2020)”

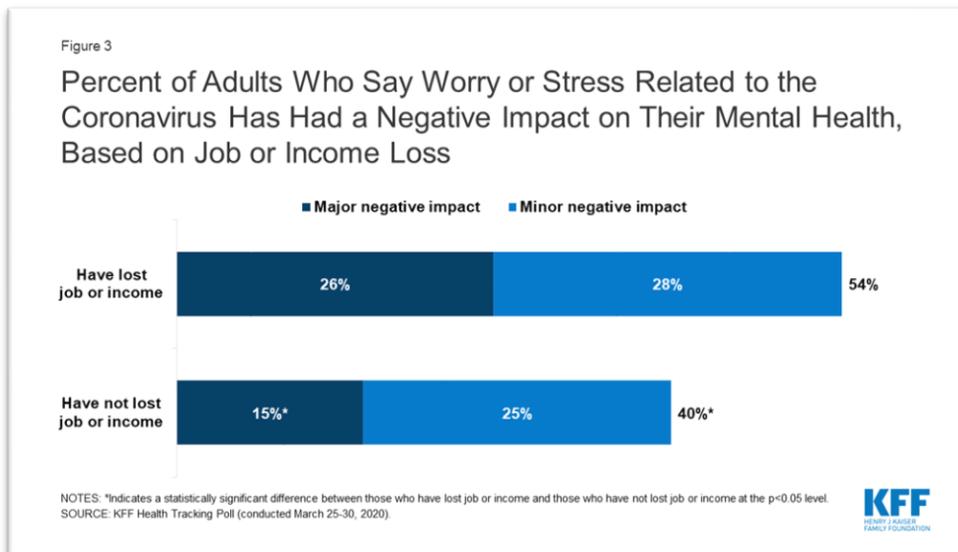
### ***Low Social Economic Status (SES) and Job Loss***

Individuals with lower economic status have been found to be significantly more vulnerable to disasters and emergencies. Several studies provide insight into how barriers to accessing resources can cause stress, depression, and other psycho-social impacts. Following Superstorm Sandy, a study conducted by Subaiya et al., (2014) found that lower income households are more likely to worry about food than higher income households. According to the study, “Given that the storm and its aftermath severely affected public transportation and also damaged and destroyed many cars, it is probable that lower income households worried more about food because of the difficulty of getting to a grocery store.” Studies have also found lower SES individuals to be at a greater risk of depression after a disaster, “Those with a lower annual household income and fewer years of education (a high school degree or equivalent, as opposed to some college or more years of education) were more likely to be depressed” following Hurricane Ike (SAMHSA, 2019). Similarly, a study following the Deepwater Horizon Oil Spill found that increased depression among lower SES households was related to two factors, unemployment and having less than \$25,000. These results have also been reported by Panchal et al., (2020) upon surveying the impact of COVID-19 on low income Canadian.

The graph below, from Panchal et al., (2020) indicates that the pandemic has especially impacted the mental health of low income Canadians, with 26% of individuals with an income less than \$40K experiencing major negative impacts, compared to 17% of individuals with an annual income of \$40k-\$89K and 14% of incomes \$90K and higher.



As seen in the graph below, job or income loss has also had a major negative impact on the mental health of 26% of individuals and a minor negative impact on 28%.



Several studies seek to explain why the mental health of individuals with lower SES suffers more than higher income households. Studies suggest that it is due to several factors including, not being prepared economically for disasters and emergencies and not being able to afford more expensive preparedness actions such as stockpiling on food or purchasing insurance ([SAMHSA, 2019](#)).

### Seniors

Individuals over the age of 60 are especially more vulnerable to pandemics. According to a recent [Statistics Canada \(2020F\)](#) report, individuals aged 60 and over account for one third of Canada's

COVID-19 cases. A WHO report documented that more than 95% of COVID-19 deaths were among individuals over the age of 60. While seniors are more likely to have underlying health conditions, such as cardiovascular disease, diabetes, or respiratory illness, that put them at a greater risk of suffering harsher symptoms and mortality when contracting the flu ([Sandoiu, 2020](#)), pandemics can also increase their isolation, fear and anxiety, and cut them off from the resources they need.

A study by [Parker et al., \(2016\)](#) found that seniors were 2.11 times more likely to experience PTSD symptoms and 1.73 times more likely to develop adjustment disorder after exposure to a natural disaster than younger adults. While there is no available data for how the mental health of seniors has been affected by historical pandemics, there is ample evidence that seniors are experiencing neglect, isolation and fear during the COVID-19 pandemic.

Individuals living in senior homes experienced the greatest shock during the pandemic, with 35% of deaths in the U.S occurring in long term care facilities ([Sandoiu, 2020](#)). Senior homes in Quebec, were especially affected. A CBC article describes the sudden rise of COVID cases in seniors' homes, leading to the death of more than 1000 seniors, making up 75% of COVID 19 deaths in the province. The article uncovers the deep need for senior care professionals, as many care providers were told to leave quarantine early to ensure that the needs of the seniors were still being met. This led to even more positive COVID cases and deaths ([CBC, 2020](#)). Senior Care providers had limited resources to protect themselves and often worked in several homes, increasing their exposure to the virus and its spread to seniors. The decreasing amount of Senior Care professionals led to the neglect and isolation of seniors, causing fear, isolation, and limited access to basic needs. An interview with the Euthanasia Prevention Coalition, also indicates that some seniors testing positive for the virus may not have been transferred to hospitals due to the hospital's limited treatment capacity to accept the elderly. The Coalition noted that some treatable seniors may be being denied medical treatment even when there is ICU capacity ([Euthanasia Prevention Coalition, 2020](#)).

Many seniors not living in permanent care facilities are found to be living alone. In 2016, 24.6% of seniors aged 65 and over were living alone. Women over the age of 85 are significantly more likely to be living alone than men (36.6% vs 21.8%) ([Comfort life, 2019](#)). This increases the risk of experiencing isolation and limited accessibility to basic needs.

Increased use of technology to connect with resources and community has helped many individuals feel less isolated during the pandemic; however, low technological literacy can create an additional barrier for seniors to access resources and connect with their loved ones while in isolation.

Canadian Seniors are also more likely to have a disability, according to [Statistics Canada \(2017\)](#), which causes increased risk during a disaster and pandemic.

### ***Individuals with Disabilities***

A literature review conducted by Stough (2009), finds that the majority of individuals with disabilities rely more heavily upon family and friends for support and that the social and personal

supports available to individuals with disabilities can be fragile during emergencies and disasters. Individuals with disabilities are also more likely to be low income, have limited social capital, and lower levels of educational attainment. These factors increase the risk of individuals living with a disability during disasters and pandemics (Stough, 2009). Research on the direct psycho-social impacts on individuals with disabilities post disaster is limited and should be explored further.

Statistics Canada (2020C) explores the vulnerability of Canadians with disabilities during the COVID-19 pandemic using the 2017 Canadian Survey on Disability. Canadian statistics show that individuals with disabilities are more likely to live alone (21% of the 6.2 million Canadians aged 15 and older with disabilities). One in 5 individuals with disabilities do not use the internet, making it more challenging to stay informed and connected with family and friends during the pandemic. Approximately 50% of individuals with a disability are also dependent on outside formal and informal support with daily activities, including support with “preparing meals, getting to appointments or running errands, or basic medical care at home.” One third of individuals rely on family, friends, and organizations to provide this care (Statistics Canada, 2020C).

Statistics Canada also reports that “Three-quarters of Canadians who considered themselves housebound relied on outside help with their daily activities. When asked why they were housebound, over one-third (38%) said it was due to limited social connections outside the home. The impact of physical distancing may be magnified for those with an already limited social network (Statistics Canada, 2020C).”

### ***Visible Minorities and Recent Immigrants***

Several studies have identified that visible minorities are impacted differently than ethnic majority counterparts. While there is limited research on how historical disasters and pandemics impact the mental health of visible minorities, a study by University College London found that visible minorities, especially Black and Asian Minority Ethnic (BAME) have experienced greater psychological impacts from the COVID-19 pandemic. The study found higher levels of anxiety, depression and loneliness coupled with lower levels of happiness and life satisfaction for visible minorities during the lockdown compared to the ethnic majority (Pinkstone, 2020).

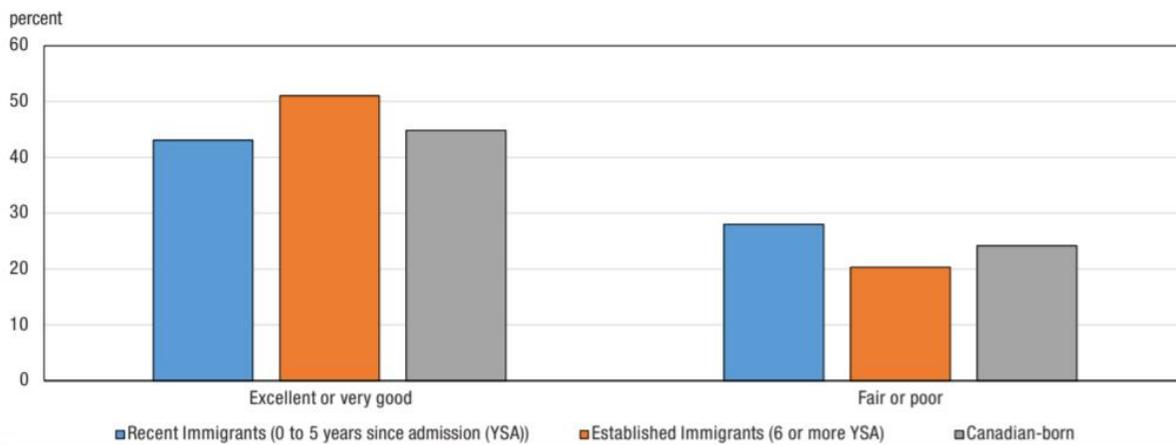
The study also found visible minorities to be more worried about unemployment and financial stress (Pinkstone, 2020). Similarly, a study by statistics Canada (2020), found that visible minority and majority individuals reported an equal amount of job loss or reduced work hours; however, visible minorities were more likely to report that the epidemic had “affected their ability to meet financial obligations and essential needs, such as rent or mortgage, payments, utilities, and groceries (Statistics Canada, 2020C).

In addition to financial stress, 21% of visible minorities have also reported an increase in harassment or attacks based on ethnicity since the pandemic. “The proportion of visible minority respondents who perceived an increase in the frequency of these discriminatory incidents since the start of the COVID-19 pandemic was three times higher than the rest of the population (18% versus 6%) (Statistics Canada, 2020D)”. Similarly, “a higher proportion of visible minority respondents (14%) perceived an increase in neighborhood crime compared to the rest of the population (11%). 27% of visible minority participants felt very unsafe walking alone at night

compared to 15% of the rest of the population”. Asian Americans were found to be almost 3 times more likely to report having experienced COVID-19 associated discrimination (13%) than white Americans (5%), Black Americans (9%) and Latino Americans (9%) (University of Southern California, 2020).

A recent study by Ezra & Mongrain (2020) finds that the mental health of established immigrants who have lived in Canada for 6 years or more has historically been better compared to recent immigrants (in Canada for 0-5 years) and Canadian born individuals. The chart below demonstrates that in 2017 recent immigrants were more at risk of having fair or poor mental health (28%) compared to 24% of Canadian-born and 20% of established immigrant participants.

**Chart 1**  
**Perceived mental health of participants by immigrant status and period of immigration**

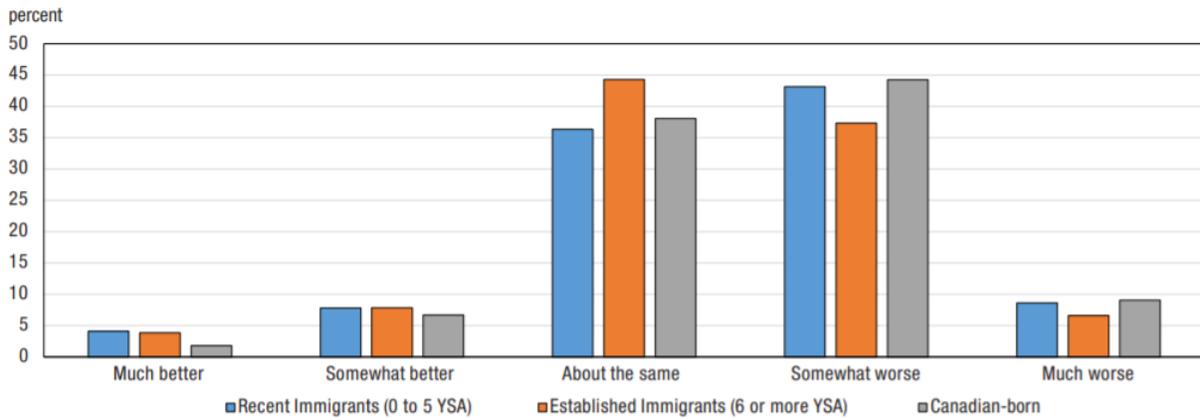


Source: Statistics Canada, Impacts of COVID-19 on Canadians – Your mental health.

Since COVID-19, Canadian-born participants have been found to be slightly more adversely impacted by social distancing (44% somewhat worse, 9% much worse) compared to recent immigrants (43% somewhat worse, 8% much worse) and established immigrants (36.5% somewhat worse, 6% much worse) as seen in the graph below.

**Chart 2**

**Perceived mental health of participants compared to before social distancing by immigrant status and period of immigration**



Source: Statistics Canada, Impacts of COVID-19 on Canadians – Your mental health.

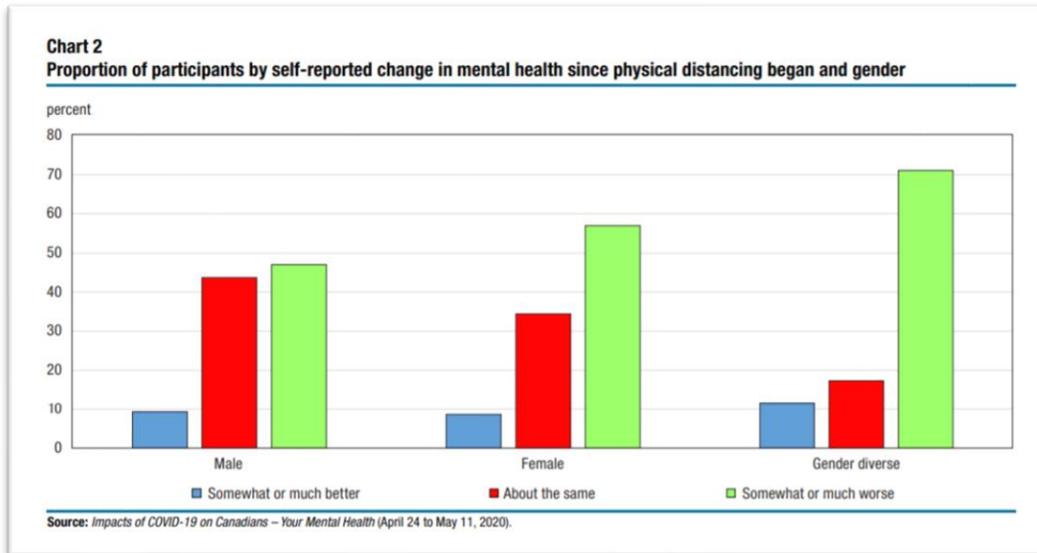
Despite Canadian-Born participants reporting 1% more mental health impacts than recent immigrants, recent immigrants are more likely to report symptoms of anxiety than other Canadians, especially female recent immigrants. According to [Ezra & Mongrain \(2020\)](#), “among recent immigrant participants, those who identified as female reported symptoms consistent with moderate or severe generalized anxiety disorder (39%) more often than their male counterparts (26%).” Recent immigrants financially affected by COVID-19 also reported higher levels of anxiety. Statistics Canada notes that the majority of recent immigrant participants were under the age 30 compared to 11% of Canadian born and 17% of established immigrants ([Ezra & Mongrain, 2020](#)).

Several studies also found that Immigrants and Ethnic Minorities are more likely to follow COVID-19 health precautions and guidelines. Statistics Canada found that Immigrants were “particularly more likely than Canadian-born individuals to report that they would wear masks in public places (80% vs 61%) and keep their distance from others (89% vs 78%) ([Statistics Canada, 2020A](#)). Similar results were also found in a study regarding public perceptions, anxiety, and behaviour change in relation to swine flu outbreak. Ethnicity was found to be strongest predictor of behaviour change, with “participants from ethnic minority groups being more likely to make recommended changes and carry out avoidance behaviours ([Rubin et al., 2009](#)). Further research should be conducted to explore the motivation and the relationship between anxiety, mental health, and discrimination in adhering to health guidelines.

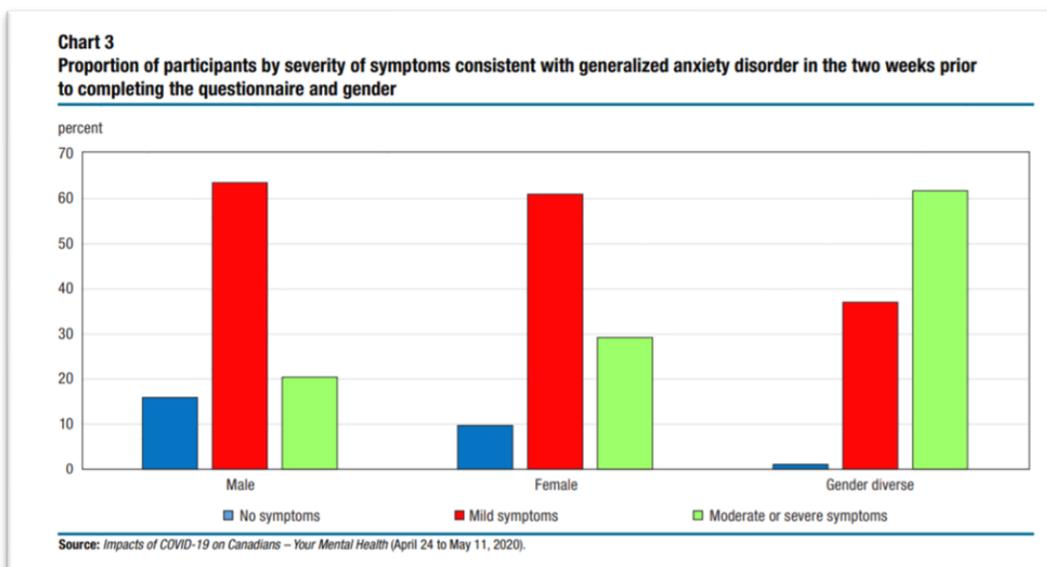
### ***Women and Gender Diverse Individuals***

Research conducted by Statistics Canada (2020) has found significant differences in levels of stress associated with COVID-19 based on gender identification. Gender-diverse participants, individuals who wished to not report their gender, reported highest levels of stress and poorer mental health outcomes than male and female counterparts across all measures ([Statistics Canada, 2020E](#)). According to the study, “Almost 70% of gender-diverse participants reported fair/poor mental health, compared with 25.5% of female participants and 21.2% of male participants. The proportion of gender-diverse participants who reported symptoms consistent

with moderate/severe GAD was double (61.8%) that of female participants (29.3%) and triple that of male participants (20.5%).” The study suggests that poorer mental health outcomes for gender diverse participants may be related to age, as “the mental health of younger Canadians has been particularly affected by the pandemic and quarantine”. More than half of gender-diverse participants (54.7%) were under the age of 30, compared with 21.6% of female participants and 20.7% of male participants (Statistics Canada, 2020D)..



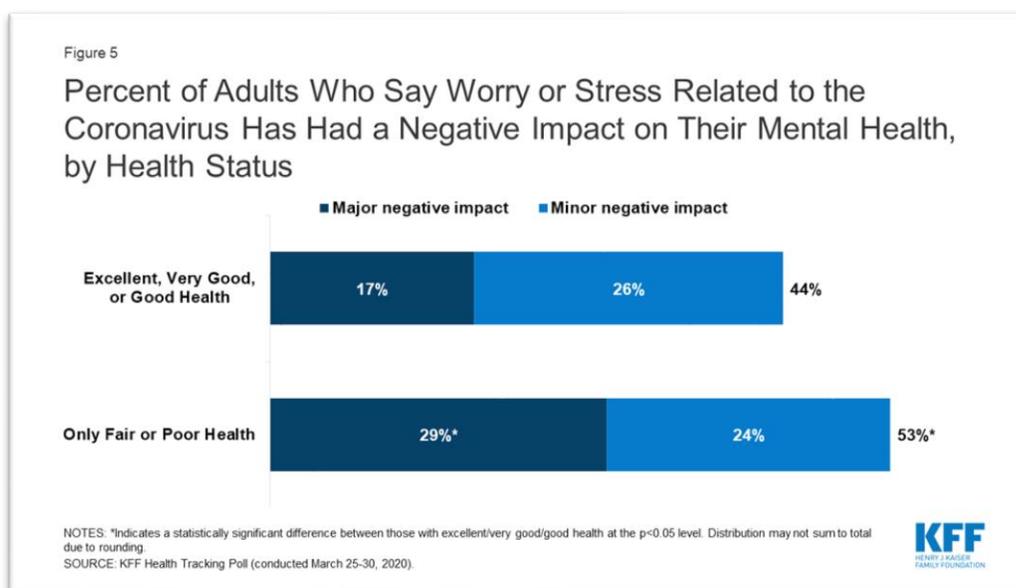
Women have also been adversely affected by COVID-19 compared to male participants. 57% of female participants in the crowdsourcing reported their mental health is “somewhat” or “much” worse since physical distancing began, as did 47% of male participants. These mental health reports are approximately 6 times worse than pre COVID-19 statistics (8.6% female and 6.7% male in 2018) (Statistics Canada, 2020E).



All three genders were found to be most concerned with the health of vulnerable people (83% Gender Diverse Individuals, 73% females, 68% male), overloading the health system (72% Gender Diverse Individuals, 62% females, 53% males), and the world population's health (65% Gender Diverse Individuals, 54% Females, 41% males). All three genders were least concerned with civil disorder, their own health, and family stress from confinement (Statistics Canada, 2020E).

### **Individuals with pre-existing health and mental health concerns**

Individuals with pre-existing health concerns are found to be more susceptible to negative psychological responses to COVID-19. A study by Panchal et al., (2020), found that 29% of individuals with fair or poor health felt that the Coronavirus had a major negative impact on their mental health compared to 17% of individuals with excellent, very good, or good health.



Individuals with pre-existing mental health concerns have especially been negatively impacted by historical disasters and emergencies. An article by Yao et al., (2020) outlines why individuals with preexisting mental health concerns are more vulnerable during pandemics. First, cognitive impairment, limited awareness of risk, and knowledge of personal protection can increase the risk of infection. Second, individuals with preexisting mental health concerns can be exposed to additional barriers to accessing health services due to discrimination, limited social capital, access to resource information, and closure of services. Third, the shock of COVID-19 can cause additional mental health concerns such as fear, anxiety, stress, and depression, which can result in relapse, trigger and aggravate pre-existing disorders due to higher susceptibility to stress compared to the general population (Yao et al., 2020).”

Studies found this to be especially true for individuals with schizophrenia, especially due to social distancing practices. According to Kozloff et al., (2020),

“Individuals with schizophrenia on average have smaller and poorer-quality social networks than the general population. Thus, they may be more able to comply with, and tolerate, social distancing directives. However, social support has been associated with higher scores on recovery measures in schizophrenia, and broad community supports, including casual contacts at pharmacies, grocery stores, and cafes, have also been associated with improved recovery and community integration scores in schizophrenia. These casual contacts will be disrupted by social distancing, putting patients at risk. Among people with schizophrenia, social isolation may increase the risk for suicide, and stress has been associated with aggressive behavior. Social distancing may also disproportionately impact the ability of people with schizophrenia to maintain their basic needs, given their high reliance on income support and other community services that become more difficult to access (Kozloff et al., 2020)”

## **6. Social Isolation**

Isolation and feelings of loneliness can contribute to many negative psychological challenges and health outcome. An article by Smartcitiesworld (2017) discusses how a combination of social isolation and loneliness has created a burden on health services, of individuals living alone being 60% more likely to visit the emergency room than individuals living with a partner. Loneliness and isolation can also effect mental health conditions, with many studies identifying a correlation between loneliness and depression (Smartcitiesworld, 2017).

Prior to the COVID-19 pandemic, seniors, new-comers and immigrants, and individuals with disabilities have been especially isolated and limited in social capital. Since COVID-19, an increased amount of individuals have been isolated from their loved ones, with 41% of Canadians finding self-isolation due to COVID-19 to have a negative impact on their mental health Martin & Cooper, (2020).

### ***Quarantine***

Several studies have explored the effects of quarantine on individuals, finding that “separation from loved ones, loss of freedom, uncertainty over disease status, and boredom can, on occasion, create dramatic effects” such as PTSD, depression, and anxiety. A study examining the impacts of quarantine due to SARS found that participants were more likely to develop acute stress disorder, exhaustion, detachment from others, anxiety, irritability, insomnia, poor concentration and indecisiveness, and deteriorating work performance (Brooks et al., 2020). A similar study of quarantined hospital employees found a predictor of symptoms of PTSD lasting up to 3 years after. 34% of horse owners quarantined for several weeks during an equine influenza outbreak experienced high levels of psychological distress. Studies have also found children quarantined to be 4 times more likely to develop PTSD than the control group. 28% of parents in the same study reported trauma related mental health disorder compared to 6% of non-quarantined parents. A study examining individuals quarantined because of having had close contact with someone testing positive for SARS found that over 20% of participants reported fear, nervousness, sadness, and guilt (Brooks et al., 2020). Two studies have identified long term impacts of quarantine, including substance abuse in health care workers 3 years after the SARS

outbreak. Post-quarantine, several studies found increased avoidance behaviors such as minimizing direct contact, avoiding people coughing or sneezing, and avoiding public and crowded spaces ([Brooks et al., 2020](#)).

The studies described above identified several participant characteristics that may be predictors of adverse psychological affects due to quarantine, including:

- Age: Younger participants between the age of 16 and 24
- Education: Lower levels of educational attainment
- Gender: identifying as female
- Living Alone
- History of psychiatric illness

### ***Technology and Isolation***

Technology has become an important means of connecting with loved ones, receiving government updates, working remotely, and accessing resources during the COVID-19 pandemic. Approximately 89.9% of Canadians use the internet according to [Internet World Stats \(2020\)](#); however with the increase of virtual work, individuals with limited technological literacy and access to technology may be feeling additionally isolated and cut off from resources and supports. While there is limited data on the specific Canadian populations unable to access technology or with low levels of technology literacy, initiatives to connect vulnerable populations with technology during the pandemic have included low income neighborhoods, long-term care homes, and shelter sites ([City of Toronto, 2020](#)). These populations may be experiencing additional barriers to staying connected during the pandemic and may be at greater risk of loneliness and mental health concerns.

### ***Isolation and Testing Positive***

Previous research on Ebola Virus Disease (EVD) survivors indicates that, in addition to isolation from community and supports, testing positive for COVID-19 may result in additional rejection and stigmatisation of survivors. Several articles studying the experiences of EVD survivors found that the response of family and community to EVD survivors “ranged from acceptance to rejection, isolation, stigmatisation and discrimination ([James et al, 2019](#))”. While many studies found that most survivors were welcomed back by their families, 97% of survivors found some form of rejection by their friends. Similarly, “72% and 71% of EVD survivors from Ebola treatment centres in the Conakry and Coyah districts in Guinea reported lower levels of reintegration with friends and at the workplace including the general public after being discharged from ETC ([James et al, 2019](#)).” Future research should seek to explore whether survivors of COVID-19 are experiencing discrimination and stigmatization.

## **7. COVID-19 Related Distress Calls and Suicide Rates**

The many complex psycho-social factors and impacts arising from the COVID-19 pandemic discussed in this review, has resulted in a significant increase in Distress Centre calls. According to an interview with the Calgary Distress Centre, the Centre’s 211 crisis line has seen an increase of 94% in June 2020 compared to the same week last year([Knight, 2020](#); [Distress Centre Calgary](#),

2020). Other cities have also seen increases in distress calls including Victoria (60% increase in April) and Ottawa (30% increase). The Calgary Distress Centre has also seen a 21% increase in suicide related contacts (Knight, 2020; Distress Centre Calgary, 2020).

A study analyzing the correlation between unemployment and suicide rates, estimates that each 1% increase in joblessness also leads to a 1% increase in the national suicide rate. In this way, the study estimates that Unemployment due to COVID-19 could lead to more than 2,000 suicides in Canada (McIntyre & Lee, 2020). One study following survivors of Ebola, indicates that the negative impacts associated with an epidemic can lead to an increase in suicide ideation, although not as common among survivors. Of the 256 survivors, 3 participants attempted suicide and 1 reported suicide ideation (Keita et al., 2017).

In addition to increased suicide rates due to unemployment, previous sections in this review have identified individuals with pre-existing mental health concerns and front-line workers to be at an additional risk of suicide ideation.

## **8. Mental Health Supports**

Despite the increased mental health needs of Canadians and increase distress calls due to COVID-19, a study by Martin & Cooper, (2020) reports a 2% decrease in individuals accessing mental health support since the outbreak (from 22% to 20%). According to the study, “Of those who are self-isolating and have accessed mental health supports before the outbreak, one-third (33%) feel they have less frequent access to mental health support since the outbreak and one-fourth (27%) also feel that the quality of mental health support has declined.” 57% of individuals with an anxiety disorder or depression accessed mental health supports prior to the pandemic. 43% of individuals with anxiety and 45% with depression feel that they have less access to mental health supports since the pandemic. Similarly, 36% of individuals with anxiety and 38% with depression feel that the quality of the supports being accessed has declined. Rural and Urban access to mental health support remain similar both prior and during COVID-19, with access to rural supports decreasing from 23% to 18% during the pandemic and urban supports decreasing from 22% to 20% Martin & Cooper, (2020). In this way, an increased percentage of Canadians are in need of mental health supports, but fewer are accessing them since COVID-19, and those who are, are not getting the quality of support needed.

Over half of Canadians surveyed (51%) rated that their employers are “considerate and supportive of their mental health needs” and 25% rated the support as neutral. 7% of participants found that their employer was not at all supportive of their mental health and associated mental needs. These ratings are almost identical to ratings of employer mental health supports prior to COVID-19, indicating that employers who were supportive of mental health needs continued to be supportive during the epidemic and only approximately 1% of employers increased their support since the pandemic Martin & Cooper, (2020).

More than 50% of Canadians surveyed expressed that the federal government (55%) and the provincial government (47%) should be doing more to support the increased mental health needs of Canadians. Over 40% of participants felt that the federal government (44%) and provincial government (42%) should “continue with their current plans and level of support”. Individuals with

an anxiety disorder (66%) and depression (69%) emphasised the need for federal government involvement and support. Similarly, 71% of participants with an anxiety disorder and 69% with depression found wished for the provincial government to do more Martin & Cooper, (2020).

## **9. Conclusion**

A large body of research indicates that historical disasters and pandemics can have lasting negative impacts on the mental health of disaster survivors. Emerging data on the COVID-19 pandemic demonstrates that the virus has been a disaster that has and will have lasting impact on the mental health of individuals on a local, national, and global scale. COVID-19 has been found to have similar mental health impacts as historical disasters and pandemics, and also introduces new factors that further exacerbate and introduce mental health symptoms. While research on historical disasters and pandemics highlight increased levels of PTSD, depression, and comorbidities, COVID-19 findings indicate increased levels of anxiety, depression, and isolation. Historical disasters and epidemics have also aided in identifying vulnerable groups at greater risk of adverse psycho-social impacts. These populations include directly exposed victims and first responders, children, individuals with low social economic status and experiencing job loss, seniors, individuals with disabilities, visible minorities and recent immigrants, women and gender diverse individuals, and Individuals with pre-existing health and mental health concerns. These populations have been found to be at greater risk of exposure to COVID related risks and report higher levels of stress impacts of the pandemic on their mental health. While these populations are adversely affected and greater risk of severe psycho-social impacts, the global reach of the pandemic, media-coverage, and wide-spread loss of routine and social network has exposed a significantly greater population to stress, loss, and uncertainty than historical disasters and epidemics, making it increasingly necessary to improve access and quality of mental health resources to impacted individuals and vulnerable populations. Recent data identifies the increased need for the provincial and federal government, employers, service providers, and communities to be aware of the shocks and distresses associated with COVID-19 and their effects on vulnerable populations and seek to explore best practices to support and address growing needs during and after the COVID-19 pandemic.

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