

# Experiences of Albertan Families with Young Children during the COVID-19 Pandemic: Descriptive Report

November 2020

## Report prepared by

**Sheila McDonald, PhD** | Departments of Community Health Sciences & Pediatrics, University of Calgary; Alberta Health Services

**Sarah Edwards, PhD** | Department of Community Health Sciences, University of Calgary

**Erin Hetherington, PhD** | Department of Community Health Sciences, University of Calgary

**Nicole Racine, PhD** | Department of Psychology, University of Calgary

**Melissa Mueller, MSc** | Department of Psychology, University of Calgary

**Brae Anne McArthur, PhD** | Department of Psychology, University of Calgary

**Sheri Madigan, PhD** | Department of Psychology, University of Calgary

**Deborah Dewey, PhD** | Departments of Community Health Sciences & Pediatrics, University of Calgary

**Gerald Geisbrecht, PhD** | Departments of Community Health Sciences & Pediatrics, University of Calgary

**Nicole Letourneau, PhD** | Faculty of Nursing, University of Calgary

**Suzanne Tough, PhD** | Departments of Community Health Sciences & Pediatrics, University of Calgary



The Owerko Centre  
at the Alberta Children's Hospital  
Research Institute



## Suggested citation

McDonald S, Edwards S, Hetherington E, Racine N, Mueller M, McArthur BA, Madigan S, Dewey D, Geisbrecht G, Letourneau N, Tough S. Experiences of Albertan Families with Young Children during the COVID-19 Pandemic: A Descriptive Report. Calgary, Alberta: University of Calgary; 2020.

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## Acknowledgements

We are extremely grateful to all the families who took part in this study and the All Our Families and the Alberta Pregnancy Outcomes and Nutrition study research teams. We acknowledge and express our gratitude to the investigators, coordinators, research staff and managers. Initial funding for these cohorts was provided by Three Cheers for the Early Years, the Alberta Children's Hospital Foundation and through Alberta Innovates Health Solutions Interdisciplinary Team Grants #200700595 and #200700586. Funding specific to this project was provided by a Canadian Institutes of Health Research, COVID-19 Rapid Research Response operating grant as well as an Alberta Children's Hospital Research Institute Owerko Centre grant.

We acknowledge the contributions of Muci Wu, Mary Canning, and Andrea Deane for their help with survey development, data collection, extracting and cleaning the data, and Melissa Mueller for her help with data analysis. We acknowledge the contribution of Myriam Bigras, graphic designer, AHS for her help with graphics and formatting.

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# Executive Summary

## The issue

The psychological, economic and social effects of the pandemic are pervasive. Contemporary quality data on family coping during this unprecedented global pandemic is crucial to inform strategies and resource allocation to minimize adverse health, mental health and financial outcomes for families.

## What we did

Participants were invited based on a unique collaboration across two longitudinal cohorts in Alberta: [The All Our Families study](#) (AOF) and the [Alberta Pregnancy Outcomes and Nutrition study](#) (APrON). This report describes data collected from approximately 2,000 Albertan families from a COVID-19 Impact Survey implemented in May 2020. Results from this cross-sectional survey, coupled with longitudinal follow-ups can identify opportunities for prevention and intervention to promote well-being and resilience during a pandemic in Alberta.

## What we found

Urban Alberta families parenting at least one child in elementary school during the COVID-19 pandemic have described their experiences during a time when home schooling, working from home and access to typical services such as childcare and domestic services has been disrupted. **In over half (58%) of all families, at least one parent experienced job loss, loss of main income source, or reduction in employment hours. Up to 35% of mothers reported elevated stress, anxiety and depression. Over 40% reported tension in their partner relationship. Almost 30% of mothers are concerned about their child's behavior and mood. Families experiencing a high number of stresses may reach a 'tipping point' in coping and require services and supports to minimize long-term threats to health and well-being.** The combination of financial volatility, mental health concerns and increased undertaking of domestic tasks place many families at a tipping point for coping. The failure to address these concerns could have long-term negative outcomes on society through persistent mental health challenges in adults, which could threaten future capacity to contribute to society. In addition, the failure to ensure that children can achieve their cognitive, social and emotional potential could threaten their ability to contribute to a knowledge based civil society.

## What we know (contextualizing the findings)

1. **Financial Impact:** In families where income and financial supports become precarious, parents need readily available non-stigmatizing avenues to meet basic needs. Job losses and reduced incomes affect the financial and mental health of all family members and can strain relationships, which can lead to family strife, poor coping strategies and escalated tension or abuse. Cumulative impacts of these stressors are related to adverse individual and family functioning with long-term impacts to families and increased costs to the health, social services and other systems.
2. **Mental Health and Relationship Impact:** In families where women experience mental health concerns and partnership tension, addressing these concerns improves adult functioning that in turn can improve child behavior and self-regulation. Children who can regulate emotions and behavior are better able to learn, make friends and direct resources to typical activities of childhood such as schoolwork, peer relationships and skill development. Pre-pandemic rankings from the Canadian chapter of UNICEF place Canada at 31 out of 39 countries of comparable wealth in terms of children's well-being. Although the impacts from COVID-19 on children will take time to unravel, strategies that support child well-being and family functioning are critically urgent now and will continue to be throughout the pandemic.

## What we can do

COVID-19 has threatened the financial and emotional well-being of citizens and investments are required to ensure families are able to thrive. Coordination from local, provincial and federal jurisdictions is required to ensure food and housing security for families. Public Health strategies that mobilize existing evidence about the value of healthy lifestyle choices including routines related to sleep, exercise and recreation, as well as the value of a healthy diet, health literacy and strong social relationships will be important. The emphasis on routines and habitual activities like game night or reading books together can help families cope in times of stress. These Public Health approaches can normalize help seeking behaviour and empower families during uncertain times. These Public Health approaches can normalize help seeking behaviour and empower families during times of stress. Existing investments in mental health and addiction support can be leveraged to ensure ease of access to services for all families, minimizing financial barriers to interventions and treatments for those most in need. Further, public investments in approaches that enhance natural supports and naturally supportive environments will improve well-being, sense of belonging and purpose among citizens ([connectionsfirst.ca](https://connectionsfirst.ca)), and may alleviate stress associated with COVID-19 related restrictions on usual activities. The fundamental need to belong is an undercurrent for optimal development across the life course, and innovative strategies to foster connections during a pandemic are imperative. These strategies align with Government of Alberta documents, including the Well-Being and Resiliency Framework (March 2019).

Addressing both economic needs and relational poverty during a pandemic is crucial. Communities and families can focus resources to ensure children and youth experience safety, physical and emotional well-being, sense of purpose and belonging, and skill acquisition with the recognition that these are core elements for healthy development. Public Health resources that focus on strategies for coping, conflict resolution and enhancing mental health are important for adult well-being. Collective efforts across jurisdictions, including health, education, children's services, labour, economy and innovation will be required to mitigate adverse outcomes consequent to this global pandemic. Collaborative efforts from individual to family to community and across service and government sectors will ensure that the best possible outcomes are achieved for all Albertans.

## Introduction

On January 25, 2020 Canada had its first presumptive case of the novel coronavirus, COVID-19, and by March 5, 2020, Alberta's first presumptive case of COVID-19 was reported in Calgary (Figure 1). By March 15, 2020, physical distancing and isolation orders were put in place by the Alberta Provincial Government to prevent the spread of COVID-19.

The COVID-19 Pandemic is an unprecedented experience for families and communities worldwide. The psychological, economic and social effects of the pandemic are pervasive. High quality, contemporary data on coping and recovery of families in Alberta during a global pandemic is crucial to inform further action and resource allocation in any future waves of this pandemic and periods of lockdown. It also has the potential to inform strategies for promoting family well-being and recovery after the pandemic.

This report describes data collected from on Albertan families on the COVID-19 Impact Survey implemented in May, which built on a unique collaboration across two longitudinal cohorts in Alberta: [The All Our Families study](#) (AOF) and the [Alberta Pregnancy Outcomes and Nutrition study](#) (APrON).

## Objectives

Our objectives are as follows:

- Describe household infections of COVID-19 in Alberta among families with school-aged children.
- Describe urban Albertan family experiences of the pandemic within the first 3-4 months of the outbreak across the areas of financial impact, maternal mental health and well-being, school and daily life, and relationships in the home.
- Describe associations among key predictor variables (e.g., financial impact) and outcomes (e.g., maternal anxiety, concern for child's well-being).

## All Our Families and Alberta Pregnancy Outcomes and Nutrition Cohorts

The mothers who were invited to participate in the COVID-19 Impact Survey were part of two longitudinal cohorts in Alberta called the AOF study (formerly the All Our Babies study) and the APrON study. These women have been participating in these studies since pregnancy, 8 to 12 years ago. Specifically, women were recruited into the AOF study between 2008 and 2011. Since then, information has been collected twice during pregnancy and at 4 months, 1 year, 2 years, 3 years, 5 years and 8 years postpartum. Youth follow-up at 13 years is anticipated to be launched in 2021. For the APrON study, women and their partners were recruited between 2009 and 2012. Women were surveyed during pregnancy in each trimester and information has been collected at 3 months, 6 months, 1 year, 2 years, 5 years and 8 years postpartum. Proposed follow-ups are anticipated at 12 and 16 years of age.

## COVID-19 Impact Survey

Complete details of the survey development and data collection have been compiled in a manuscript under consideration for academic publication (MacKay et. al, 2020; submitted). In brief, the COVID-19 Impact Survey was sent to AOF and APrON participants, on May 20th and May 26th, 2020, respectively. AOF participants had until July 15th, 2020 and APrON participants had until July 31st, 2020 to complete the survey; however, for the purposes of this report data collected up until July 15, 2020 were included. The survey was developed based on existing COVID-19 surveys, previously used validated scales that had been used to survey these two longitudinal cohorts, and key content areas. The survey was circulated to content experts, subspecialists, and clinical experts in infectious diseases for review prior to distribution. Descriptions of the various components of the COVID-19 Impact Survey are included in Appendix A. Given the urgency of the data collection, a small pilot study ( $n < 10$ ) was completed with mothers prior to launching the survey. The eligible cohort sample was composed of 4,116 mothers, including 2,534 from AOF and 1,582 from APrON. In total, 1,815 mothers (1,376 AOF and 439 APrON)

consented to participate in the COVID-19 Impact Survey. Given the APrON COVID-19 Impact Survey was still ongoing when the data was transferred to include in this report, the response rate was calculated using AOF data only and was 54%. Descriptive statistics are presented below. The number of missing responses was less than 5% for all variables and is not reported. Bivariate associations for two main predictors: 1) financial impact defined as *'self or partner lost job or had reduced hours'*; and 2) maternal level of resilience (high resilient copers vs. not as per scores on the Brief Resilient Coping Scale) and select outcome variables such as maternal mental health and parental concerns for their child's well-being were investigated.

## Results

**Demographics:** The majority of respondents to the COVID-19 Impact Survey reported a total household income (before the pandemic) of \$80,000 or more (82%) (Table 1). The survey is representative of White, educated, food and housing secure, families, living in a Canadian urban centre.

### Physical Impacts of COVID-19 Pandemic

**Key Point(s):** Over 90% of families did not have personal experience with COVID-19, either through personal infection, infection of a child, extended family member or close friend.

As of June 2020, fewer than 5 mothers responding to the survey reported having COVID-19 themselves or that their AOF or APrON child had COVID-19 (Table 2). Approximately 3% of mothers reported symptoms consistent with COVID-19 for themselves and their child. Similarly, mothers reported few other family members infected with COVID-19 (less than 10 mothers reported that someone under the age of 18 in the household had COVID-19, and less than 5 mothers reported that someone else over the age of 18 had COVID-19). When mothers were asked about whether extended family (outside their home) or whether a close friend had COVID-19, 8% reported yes. Approximately 17% of mothers reported that a close friend or extended family had COVID-19 and was hospitalized. Less than 1% (n=12) reported that someone close to them had passed away after being infected with COVID-19.

### COVID-19 Vaccine Intentions

**Key Point(s):** Although over 60% of mothers and their children would obtain a COVID-19 vaccine when available, almost 30% were undecided and 8% would not obtain a vaccine.

Mothers were asked if they planned to receive a COVID-19 vaccine when an approved one becomes available and 64% said yes, while 8% said no (Table 3). Just over a quarter of mothers were undecided (28%). Similar numbers were seen when mothers were asked if they planned to have their child receive a COVID-19 vaccine when an approved one becomes available, with 63% responding yes and 8% no. Just under a third of mothers were undecided (29%).

### Financial Impact of COVID-19 Pandemic

**Key Point(s):** In 58% of all families, at least one parent experienced job loss, loss of main income source, or reduced hours (i.e., in 19% of families, both parents were financially impacted, and in 39% of families, one parent was financially impacted). 1 in 5 mothers reported difficulty meeting financial needs for the household, and 5% of families were experiencing food insecurity. Over 40% of respondents reported at least some impact on their ability to meet financial obligations, with 20% of these families reporting moderate to major impact.

Specifically, Seventeen percent of women reported a job loss or reduction in their main source of income and a further 21% reported reduced income or hours (Table 4). Of those women experiencing a financial impact, 62% were eligible to receive provincial or national assistance. Of those not experiencing a loss or decrease income, 13% agreed or strongly agreed with the statement: "I might lose my job or my main source of income in the next 3 months." If this were to happen, by autumn 2020, 52% of all women would experience job loss or employment income losses consequent to COVID-19.



Twelve percent of women reported their partner had lost their job or experienced a reduction in their main source of income and 25% reported their partner had reduced income or hours. Of those reporting a financial impact on their partner, 65% of their partners were eligible to receive provincial or national assistance. Among those whose partner did not experience a loss or decrease in income, 13% agreed or strongly agreed that their partner may lose their job or main source of income in the next three months. **Collectively, in 58% of all families, at least one parent experienced job loss, reduction in income, or reduced hours.** One in five mothers reported that the pandemic had a major or moderate impact on their ability to meet financial obligations or essential needs like rent or mortgage payments, utilities and groceries. Five percent reported food insecurity, with 2% reporting that someone in the household received food from a food bank, soup kitchen or other charitable agency.

### Maternal Concerns related to the COVID-19 Pandemic

**Key Point(s): Approximately 20% and 30% of respondents reported a high level of concern for their own or a family member's health, respectively.**

Mothers voiced concerns about a number of additional topics/issues due to the pandemic ranging from their own health to civil disorder (Table 5). Being either 'very or extremely' concerned about the variety of topics ranged from 19% for concern about mother's own health to 70% for concern about the health of a vulnerable family member in the household. Forty-seven percent rated that they were either very or extremely concerned about overloading the health system. Excluding the lowest and highest proportions (i.e., 3% highly concerned about violence and 70% highly concerned about a vulnerable family member), on average, 30% of mothers reported being highly concerned about a number of consequences of the pandemic, including the following: own health, health of a family member in the house, health of Canadians, health of the world's population, overloading the health system, civil disorder, maintaining social ties, cooperation during and after the pandemic, and family stress of confinement. This proportion of concern is less than Canadians responding to the same question at the start of the pandemic in April where 40% and 50% were concerned for their own or a family member's health, respectively, according to Statistics Canada.

### Maternal Mental Health and Wellness Impact of COVID-19 Pandemic

**Key Point(s): A high proportion of mothers reported elevated stress (21%), anxiety (25%) and depression (35%). Approximately 26% of mothers reported limited coping skills. Almost 90% of mothers have undertaken more domestic tasks in the home.**

Approximately 70% of mothers reported alcohol consumption in the last month, of which 40% reported having 4 or more drinks on one occasion (Table 6). **The reported consumption of 4 or more drinks on one occasion by mothers in the COVID-19 Impact Survey was more than double the rate of 15% of Albertan women aged 35 to 49 years who reported drinking 4 or more drinks on one occasion in the Canadian Community Health Survey in 2019.** Our finding is in line with research suggesting an increase in alcohol intake during the COVID-19 pandemic. Reported recreational drug use was low with 10% of women reporting the use of cannabis in the past month.

The majority of mothers indicated that they were doing more domestic activities and household projects (86%), new or re-kindled hobbies (61%), and spending more time as a family (90%). Although over 50% of women reported doing more physical fitness and self-care activities, 30% reported doing less since the pandemic.

Thirty-five percent of mothers reported symptoms of depression and 25% reported symptoms of anxiety. Despite the above concerns and mental health challenges, close to 75% of mothers scored as either medium or high resilient copers on the Brief Resilience Coping scale, with one-quarter scoring as low resilient copers. This demonstrates that at this stage of the pandemic, the majority of mothers believed they had the skills and ability to deal with this difficult situation, to feel in control, and to grow in a positive way from challenges.

## Impact of COVID-19 Pandemic on School and Daily Life

**Key Point(s):** Most mothers (78%) reported that parental need to supervise their child's schoolwork was somewhat or very difficult and 60% indicated managing school work and other activities in the home was somewhat to very difficult. Nearly a quarter of mothers reported it was very difficult to find daytime care for children so they could undertake work related tasks. Most mothers felt their child would be able to keep up with schoolwork (74%) and re-adjust socially and be academically ready for the next school year (82% and 61%, respectively). One quarter of mothers were worried about their child's behavior and depression. A third of mothers were worried that their child was anxious. Mothers reported that screen time use outside of schoolwork increased by almost 2 hours per day from pre-COVID-19 levels, on average.

Most mothers (78%) reported that parental need to supervise their child's schoolwork was somewhat or very difficult for their family. The majority reported their child was able to keep up with schoolwork (74%) (Table 7). Few mothers reported that their own familiarity with the technology (8%) or school material (9%) made it very difficult to help their child with their schoolwork. A similar proportion of mothers reported it was very difficult to help with school material because of language barriers (8%) or child learning or behavioural challenges that require accommodation (12%). Nearly a quarter of mothers reported it was very difficult to find daytime care for children so they could go to work outside the house or perform work-related tasks.

Most mothers reported adequate internet access (75%) and no difficulty in terms of the availability of devices to enable learning or working online (71%). Most mothers felt their child would be able to re-adjust socially for the next school year (82%), and 61% felt they would be academically ready. One quarter of mothers were worried about their child's behavioural challenges, outbursts or short temper and that their child was sad or depressed. A third of mothers were worried that their child was anxious.

Half of mothers felt their child was receiving adequate amounts of physical activity. Outside of schoolwork, **mothers reported their child used electronic devices an average of 3.32 (+/-2.08) hours on weekdays and 3.79 (2.23) hours on weekends. This represents an increase of almost 2 hours per day from pre-COVID-19 data** where average screen time was 1.76 hours per day (weighted average by weekday/weekend use in hours per day; unpublished data) at 8 years of age. Most mothers reported their child had connected with friends (93%) and family (90%) outside the home through social networking or online platforms, with a majority reporting this was a primarily positive experience for both friends (75%) and family (80%). There were 19% of mothers who reported that they did not limit their child's screen time at all. Most mothers (82%) reported being aware of what their child was doing on media devices.

## Impact of COVID-19 Pandemic on Relationships Inside the Home

**Key Point(s):** Although 47% of mothers reported some (43%) or a lot (4%) of tension in their relationship with their partner, 27% responded that the pandemic had brought them closer together. Despite the reported tension and challenges, over 80% of mothers reported their relationship with their partner as happy to perfectly happy. Many families reported that siblings were closer to one another (52%), and so were parent and child (47% of mothers, 35% of partners).

Just over a quarter of women (27%) reported the pandemic had resulted in a closer relationship with their partner (Table 8). Approximately 14% reported the pandemic had strained their relationship with their partner and 43% reported some tension in their relationship. Nearly half of mothers reported the pandemic had resulted in closer relationships with their child (47%). About a third of mothers reported the pandemic had resulted in closer relationships between their partner and child. Half of mothers also reported the pandemic improved their child's relationship with their siblings (52%).

When mothers were asked to rate the degree of happiness in their relationships, about a quarter picked “happy” corresponding to the level of happiness in most relationships. Just under half rated the happiness in their relationships as higher (“very”, “extremely” or “perfectly” happy) than this, and 18% rated their happiness as lower (“a little unhappy”, “quite unhappy” or “extremely unhappy”).

## Associations: Financial Impact and Coping

**Key Point(s): Families who were financially impacted were more likely to report higher levels of stress, depression and anxiety. Mothers scoring high on resiliency measures, including feeling in control and positive, were more likely to manage the child’s learning environment. Mothers who had a positive, coping-focused attitude were slightly less concerned about their child’s mental health or wellbeing.**

Compared to families who were not impacted financially, those who were, reported increased maternal stress (24% vs. 16%), depression (36% vs. 31%), and anxiety (28% vs.22%) symptoms. Families reporting a household income of less than \$80,000 pre-pandemic were more likely to report financial impact than families reporting higher pre-pandemic incomes. Mothers who scored as high resilient copers (i.e., felt in control, had a growth mindset, and found ways to creatively problem solve) compared to those who scored as medium or low resilient copers were more likely to report low levels of difficulty managing their children’s home learning situation in terms of supervision (31% vs. 19%) and need for assistance (62% vs. 53%). High resilient copers were also less likely to report concern that their child was sad or depressed compared to less resilient copers (20% vs.25%). **These exploratory analyses suggest that those with greater financial impact consequent to the pandemic experienced greater stress, anxiety and depression. Regardless of income, mothers with more resilience were better able to supervise and assist their children with school and were less concerned about their child’s sadness.** Further analyses are required that control for pre-pandemic variables to identify families that are more vulnerable to the impact of the pandemic.

## Limitations

Limitations of this survey include the potential for selection bias and generalizability. Compared to the general population, the two Alberta cohorts have higher socioeconomic status and less ethnic diversity. In general, however, participants are representative of the pregnant and parenting population in an urban centre with the exception of higher education and household income. The participation rate of 54% is also a limitation but is not surprising given the urgent nature of the data collection and an off-cycle data collection wave. The report presents a description of experiences of families; multivariable analyses that control for pre-pandemic factors are required to better understand vulnerability and resilience during a pandemic. It is important to note that this cross-sectional survey was administered approximately 2.5 months into the pandemic and reflects the experiences of families finishing up the school year and navigating the public health measures put in place at that time. Results may change with increasing time in lockdown and changing public health measures. Follow-up surveys are underway to compare baseline responses to longitudinal impacts.

## Summary and Next Steps

In summary, this report presents baseline results from the first cross-sectional COVID-19 Impact Survey, sent out to over 4000 Albertan families approximately 2.5 months into the pandemic. In 58% of all families at least one of the parents experienced job loss or reduction in employment hours. In 20% of families both parents lost their job or income. Mothers reported increased stress (21%), anxiety (35%) and depression (25%), which is higher than pre-pandemic rates of depression in this cohort of 16%. Almost half of mothers reported tension in their relationship. Mothers also reported that their children showed increased sadness and behavioural challenges. The COVID-19 pandemic has had profound financial and mental

health impact on some families. Investment in strategies to alleviate financial stress, provide parenting supports, and alleviate mental health concerns is critical.

### What we know

Our work based on the [AOF](#) and [APrON](#) cohorts and the literature show that maternal mental health strongly influences child well-being and that external and internal coping strategies can mitigate adverse effects of maternal mental illness on maternal and child outcomes. For example, AOF found that participating in the following activities helped to buffer the influence of poor maternal mental health on women, children and families: i) using low-cost community resources such as recreation centres or the library; ii) having a social support system in place such as a close friend, helpful neighbour, or group; iii) using a drop-in or structured child/youth care arrangements; and iv) learning to have a [positive outlook](#). This speaks to social connections, in general, that are protective against poor outcomes for mothers and families. When women can develop social support networks and engage in community activities, their mental health can improve. In turn, improved maternal mental health can benefit mothers, children and their families. Social support has the largest impact on alleviating maternal anxiety and depressive symptoms postpartum, and social support and increased dispositional optimism are two tools that can help women cope with mental health challenges. Families where women are able to share responsibilities and offset stress with support from partners and extended family have the greatest potential for improved mental health.

We also know that brief and informal positive interactions in daily events, also known as ‘social snacking’, is important in community building and well-being. Such interactions can add to or deduct from [one’s emotional currency; that is, one’s well-being and ability to handle encounters](#). Relationships buffer negative experiences and social snacking improves mood, sense of connection, and well-being. In sum, social connections at the individual, family and community level are imperative for well-being.

### What we can do

During this time of physical distancing, social connections are more important than ever before. In the context of COVID-19, these strategies translate into feasible social connections with physical distancing, investing in ‘social bubbles’, and virtual connections. For the latter, evidence suggests that online social support, peer and parenting supports, and online mental health care can be effective. Efforts to maintain social connections in small groups and that are outdoors have the potential to improve mental health. Accessible outdoor spaces where small groups of individuals or cohort families can gather (e.g., parks, walking paths, and trails) provide opportunities to engage in social support.

Finally, investing in family mental health must be prioritized as part of the COVID-19 pandemic response. Interventions should include normalizing help-seeking, ensuring ease of access to professional help (virtual or in-person), and resources that support healthy intimate relationships and remediate stress related to financial losses.

Further longitudinal research will help to better understand how pre-pandemic factors factor in families’ ability to cope with the stresses experienced as a result of the pandemic. Such research will help to isolate modifiable protective factors that promote resilience in the midst of risk. Investing in longitudinal cohorts like AOF and APrON is important to examine the effects of the pandemic over time.

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## Appendix A: Survey Components

### Household infections during COVID-19

Maternal or household members infected by COVID-19 (yes, no, maybe) (confirmed laboratory test, used an online or telephone assessment tool, had symptoms consistent with COVID-19 infection, had contact with someone with a confirmed test, other please specify), how would you characterize your or your household members' symptoms (mild, moderate, severe), did a member of your extended family or a close friend have COVID-19 (yes, no), has someone close to you passed away after being infected by COVID-19 (yes, no).

### Financial

Impact on ability to meet financial obligations/needs (major impact, moderate impact, minor impact, no impact, too soon to tell). Questions on food insecurity and accessing food charities were included.

### Mental Health and Wellbeing

Maternal concerns about the impacts of COVID-19 (own health, member of households health, vulnerable people's health, Canadian population health, world population health, overloading the health system, civil order, maintaining social ties, ability to cooperate and support one another, family stress from confinement, violence at home, other) were collected on a 4-point Likert scale from 'not at all' to 'extremely'.

### Maternal Stress

Mothers were asked to rate: in the past month how often have you been or felt: upset, unable to control things, nervous, confident coping with problems, able to control irritations in your life, on top of things, anger, difficulties piling up using a 5-point Likert scale from 'never' to 'very often'.

### Maternal Depressive Symptoms

Mothers were asked to rate if they felt or behaved: bothered, able to focus, depressed, low energy, hopeful, fearful, restless sleep, happy, lonely, motivated using a 4-point Likert scale from 'rarely or none of the time' to 'most or all of the time'.

### Maternal Relationship Satisfaction

Mothers were asked to rate the degree of happiness in their relationship with a spouse/partner on a 7-point scale from 'extremely unhappy' to 'perfectly happy'.

### School and Daily Life

Mothers were asked to rate how difficult various school-related activities (supervising child's schoolwork, familiarity with technology and school material to help child, ability to help with school material because of language barriers/due to behavioural challenges that require accommodation) were on a 3-point scale (not difficult, somewhat difficult, very difficult). They were also asked to rate the difficulty of access to technology (availability of devices, internet bandwidth and coverage) on a 3-point scale (not difficult, somewhat difficult, very difficult). As well as the difficulty of managing childcare (balancing with working from home, availability of daytime care to be able to work outside the home and increased expenses for childcare) on a 3-point scale (not difficult, somewhat difficult, very difficult). Mothers were asked how they feel about supporting their child's school goals including how academically ready for the next school year their child will be, the child's ability to re-adjust socially, the child's ability to keep up with schoolwork, as well as the child's behavior, mental and physical health. Mothers were asked whether their child had connected with friends and family through online platforms and if they feel that has been primarily positive or negative. Mothers were also asked to report how many hours per day their child spends (outside of school) on electronic devices on both weekdays and weekends. Mothers were also asked how often they are aware of what their child is doing on these devices on a 5-point Likert scale from 'always' to 'never'.

and if they had practiced or enforced any rules or limits to their child's screen use during the COVID-19 pandemic.

### **COVID-19 Vaccine Willingness**

Mothers were asked if they would plan to and if they would have their child receive a COVID-19 vaccine when it becomes available with response options of: no, yes, I have thought about it, but am undecided and I have not thought about it yet.

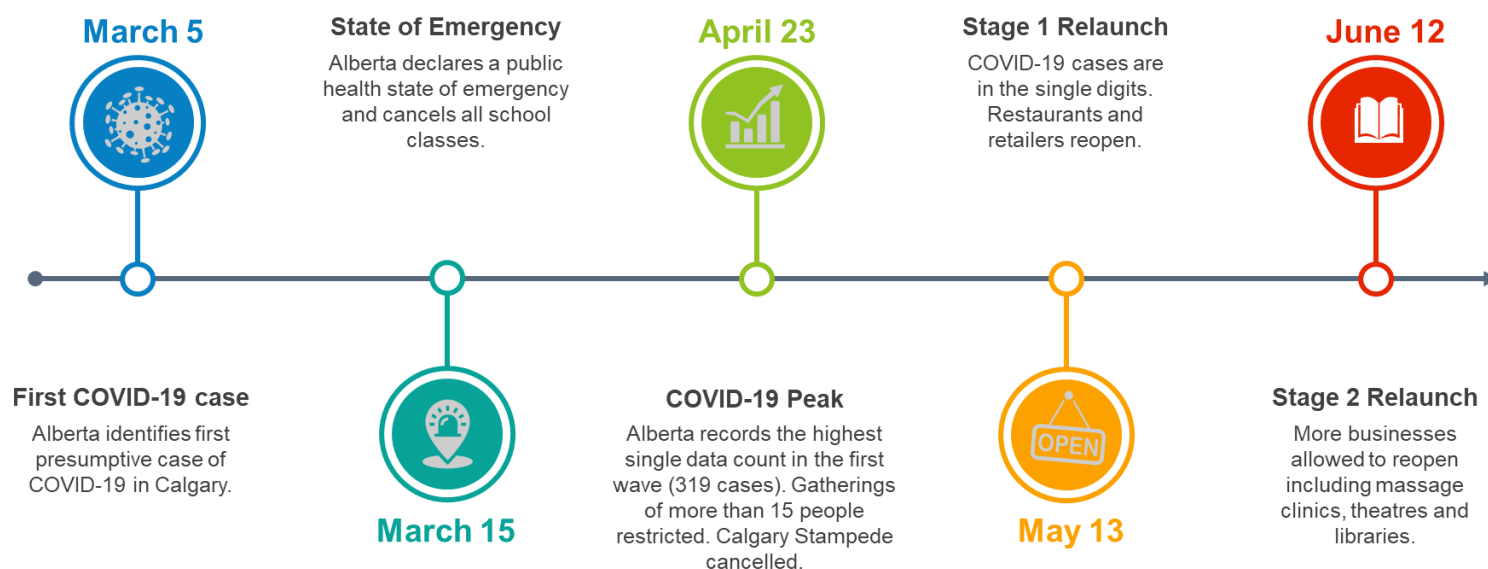
### **Demographics**

Most demographics were collected on earlier survey waves for both cohorts. Mothers were only asked to report their pre-COVID-19 household income for this survey to minimize burden.



## Appendix B: Figures and Data Tables

**Figure 1.** Timeline of COVID-19 Pandemic in Alberta



**Table 1.** Family Income and Family Size reported by mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>Family Income</b>	
Less than \$80, 000	243 (14.0)
\$80, 000 or greater	1,492 (86.0)

**Table 2.** Physical Impact of COVID-19 on Mothers, their Child and Extended Families reported by mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>Maternal COVID-19 Infection</b>	
No	1735 (96.1)
Yes	4 (0.2)
Maybe	67 (3.7)
<b>Child COVID-19 Infection</b>	
No	1748 (96.8)
Yes	4 (0.2)
Maybe	53 (2.9)

	n (%)
<b>Extended family (outside your home), or a close friend have COVID-19</b>	
No	1664 (92.4)
Yes	137 (7.6)
Hospitalized for COVID-19	24 (17.7)
<b>Someone close to you passed away after COVID-19</b>	
No	1789 (99.3)
Yes	12 (0.7)

**Table 3.** COVID-19 Vaccine Intentions reported by mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>Plan to receive vaccine if approved COVID-19 vaccine available</b>	
No	149 (8.3)
Yes	1146 (63.6)
I have thought about it, but am undecided	443 (24.6)
I have not thought about it yet	63 (3.5)
<b>Plan for child receive vaccine if approved COVID-19 vaccine available</b>	
No	145 (8.0)
Yes	1127 (62.6)
I have thought about it, but am undecided	465 (25.8)
I have not thought about it yet	64 (3.5)

**Table 4.** Financial Impact of COVID-19 pandemic reported by mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>Lost your job or income source* (permanently or temporarily)</b>	
Yes, lost job or main income source	313 (17.4)
No, but income or hours have been reduced	383 (21.3)
No, no change in job or income source	894 (49.7)
Not working	207 (11.5)
<b>If no or not working:</b>	
Might lose job or main income source in the next 3 months	
Strong agree	57 (3.8)
Agree	137 (9.2)
Neither agree nor disagree	308 (20.8)
Disagree	441 (29.8)
Strong disagree	539 (36.4)

	n (%)
<b>Partner lose their job or income source* (permanently or temporarily)</b>	
Yes, lost job or main income source	207 (12.4)
No, but income or hours have been reduced	424 (25.5)
No, no change in job or income source	989 (59.5)
Not working	43 (2.6)
Do not have a partner	132 (7.3)
<b>If no or not working:</b>	
Might lose job or main income source in the next 3 months	
Strong agree	46 (3.2)
Agree	135 (9.4)
Neither agree nor disagree	307 (21.3)
Disagree	480 (33.3)
Strong disagree	475 (32.9)
<b>Family Impact</b>	
Both mother and partner lost their job or income source* (permanently or temporarily), <i>including reduced hours</i>	316 (19.0)
Either mother or partner lost their job or income source* (permanently or temporarily), <i>including reduced hours</i>	641 (38.6)
Neither mother or partner lost their job or income source* (permanently or temporarily), <i>including reduced hours</i>	703 (42.3)
<b>Impact of COVID-19 on ability to meet financial obligations or essential needs<sup>†</sup></b>	
Major impact	84 (4.7)
Moderate impact	269 (15.0)
Minor impact	420 (23.4)
No impact	919 (51.1)
Too soon to tell	105 (5.8)
<b>During the COVID-19 pandemic, experienced food insecurity</b>	
Often	18 (1.0)
Sometimes	70 (3.9)
Never	1708 (95.1)
<b>Received food from a food bank, soup kitchen or other charitable agency</b>	
No	1765 (98.3)
Yes	31 (1.7)

\*since March 1<sup>st</sup>, 2020

<sup>†</sup>such as rent or mortgage payments, utilities and groceries

**Table 5.** COVID-19 pandemic concerns of mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	<b>n (%)</b>
<b>My own health</b>	
Not at all	383 (21.1)
Somewhat	1057 (58.2)
Very	256 (14.1)
Extremely	93 (5.1)
<b>Member of the household's health</b>	
Not at all	277 (15.3)
Somewhat	940 (51.8)
Very	401 (22.1)
Extremely	166 (9.1)
<b>Vulnerable people's health (e.g., immunocompromised or elderly family members)</b>	
Not at all	57 (3.1)
Somewhat	466 (25.7)
Very	808 (44.5)
Extremely	459 (25.3)
<b>Canadian population's health</b>	
Not at all	142 (7.8)
Somewhat	1069 (58.9)
Very	498 (27.4)
Extremely	80 (4.4)
<b>World population's health</b>	
Not at all	148 (8.2)
Somewhat	1006 (55.4)
Very	519 (28.6)
Extremely	115 (6.3)
<b>Overloading the health system</b>	
Not at all	142 (7.8)
Somewhat	794 (43.7)
Very	656 (36.1)
Extremely	196 (10.8)
<b>Civil disorder</b>	
Not at all	418 (23)
Somewhat	908 (50)
Very	378 (20.8)
Extremely	86 (4.7)
<b>Maintaining social ties</b>	
Not at all	236 (13)
Somewhat	837 (46.1)
Very	567 (21.2)
Extremely	148 (8.2)

	<b>n (%)</b>
<b>Ability to cooperate and support one another during the crisis</b>	
Not at all	298 (16.4)
Somewhat	907 (50)
Very	474 (26.1)
Extremely	105 (5.8)
<b>Ability to cooperate and support one another after the crisis</b>	
Not at all	395 (21.8)
Somewhat	807 (44.5)
Very	478 (26.3)
Extremely	104 (5.7)
<b>Family stress from confinement</b>	
Not at all	323 (17.8)
Somewhat	831 (45.8)
Very	476 (26.2)
Extremely	157 (8.7)
<b>Violence in the home</b>	
Not at all	1597 (88)
Somewhat	126 (6.9)
Very	46 (2.5)
Extremely	9 (.5)

**Table 6.** Mental health, wellbeing and substance use impact of COVID-19 pandemic for mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	<b>n (%)</b>
<b>Perceived Stress Scale</b>	
Mean ( $\pm$ Standard Deviation)	16.1 ( $\pm$ 6.7)
Low symptoms of stress (scored less than 22)	1371 (78.8)
Symptoms of stress (scored 22 or greater)	368 (21.2)
<b>Spielberger State Anxiety Inventory</b>	
Mean ( $\pm$ Standard Deviation)	11.9 ( $\pm$ 4.0)
Low symptoms of anxiety (scored <15)	1315 (74.5)
Symptoms of anxiety (scored 15 or greater)	449 (25.5)
<b>Center for Epidemiologic Studies Depression Scale</b>	
Mean ( $\pm$ Standard Deviation)	8.1 ( $\pm$ 5.7)
Low symptoms of depression (scored <10)	1146 (65.3)
Symptoms of depression (scored 10 or greater)	610 (34.7)
<b>Brief Resilient Coping Scale</b>	
Mean ( $\pm$ Standard Deviation)	14.9 ( $\pm$ 2.6)
Low resilient copers (scored 4-13)	458 (25.9)
Medium resilient copers (scored 14-16)	906 (51.2)
High resilient copers (scored 17-20)	404 (22.9)
<b>Use of alcohol in the past month</b>	
Currently do not consume alcohol	533 (29.7)
Currently consume alcohol	1262 (70.3)
Binge drink (4 or more drinks) at least once in the past month	494 (39.7)

	n (%)
<b>Use of cannabis in the past month</b>	
Currently do not use cannabis	1614 (90.0)
Currently use cannabis	179 (10.0)
<b>Use of recreational drugs in the past month</b>	
Currently do not use recreational drugs	1784 (99.7)
Currently use recreational drugs	6 (0.3)
<b>Activities doing more of since COVID-19</b>	
Domestic activities and household projects	1561 (86.0)
New or re-kindled hobbies	1114 (61.4)
Educational activities	449 (24.7)
Physical fitness or self-care	990 (54.5)
Spending time together as a family	1632 (89.9)
Other	118 (6.5)
<b>Activities doing less of since COVID-19</b>	
Domestic activities and household projects	106 (5.8)
New or re-kindled hobbies	246 (13.6)
Educational activities	418 (23)
Physical fitness or self-care	631 (34.8)
Spending time together as a family	48 (2.6)
Other	335 (18.5)

**Table 7.** School and daily life impact of COVID-19 pandemic reported by mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>Parental need to supervise child's schoolwork*</b>	
Not difficult	386 (22.2)
Somewhat difficult	755 (43.3)
Very difficult	601 (34.5)
<b>Parental familiarity with the technology to help child with their schoolwork*</b>	
Not difficult	972 (55.9)
Somewhat difficult	628 (36.1)
Very difficult	138 (7.9)
<b>Parental familiarity with the school material to help my child*</b>	
Not difficult	967 (55.8)
Somewhat difficult	611 (35.3)
Very difficult	155 (8.9)
<b>Ability to help with school material because of language barriers*</b>	
Not difficult	1017 (76.8)
Somewhat difficult	197 (14.9)
Very difficult	110 (8.3)
<b>Ability to help with school material due to learning or behavioural challenges that require accommodation*</b>	
Not difficult	912 (64.5)
Somewhat difficult	331 (23.4)
Very difficult	170 (12.0)

	n (%)
<b>Availability of devices to allow us all to work or learn online from home*</b>	
Not difficult	1234 (70.8)
Somewhat difficult	442 (25.4)
Very difficult	67 (3.8)
<b>Availability of adequate internet access (coverage, bandwidth) *</b>	
Not difficult	1305 (74.8)
Somewhat difficult	369 (21.2)
Very difficult	70 (4.0)
<b>Managing schoolwork and other activities in my home*</b>	
Not difficult	339 (19.4)
Somewhat difficult	711 (40.8)
Very difficult	694 (39.8)
<b>Availability of daytime care for children to enable me to go to work outside the home*</b>	
Not difficult	569 (57.5)
Somewhat difficult	187 (18.9)
Very difficult	233 (23.6)
<b>Availability of daytime care for children to enable my partner to go to work outside the home*</b>	
Not difficult	652 (70.3)
Somewhat difficult	138 (14.9)
Very difficult	138 (14.9)
<b>Increased expenses for childcare arrangements*</b>	
Not difficult	668 (86.1)
Somewhat difficult	68 (8.8)
Very difficult	40 (5.2)
<b>I feel that my child will be academically ready for the next school year</b>	
Strongly agree	382 (21)
Agree	722 (39.8)
Neither agree nor disagree	283 (15.6)
Disagree	299 (16.5)
Strongly disagree	77 (4.2)
<b>I feel that my child will re-adjust socially (reconnecting with or making new friends) for the next school year</b>	
Strongly agree	604 (33.3)
Agree	885 (48.8)
Neither agree nor disagree	152 (8.4)
Disagree	98 (5.4)
Strongly disagree	23 (1.3)

	n (%)
<b>I feel that my child is able to keep up with his/her schoolwork</b>	
Strongly agree	495 (28.1)
Agree	803 (45.6)
Neither agree nor disagree	184 (10.5)
Disagree	217 (12.3)
Strongly disagree	60 (3.4)
<b>I am concerned about my child's behavioural challenges, outbursts or short temper</b>	
Strongly agree	104 (5.9)
Agree	333 (18.9)
Neither agree nor disagree	253 (14.3)
Disagree	541 (30.7)
Strongly disagree	532 (30.2)
<b>I am worried that my child is sad or depressed</b>	
Strongly agree	81 (4.6)
Agree	345 (19.6)
Neither agree nor disagree	315 (17.9)
Disagree	610 (34.6)
Strongly disagree	410 (23.3)
<b>I am worried that my child is anxious</b>	
Strongly agree	127 (7.2)
Agree	475 (27.0)
Neither agree nor disagree	311 (17.7)
Disagree	513 (29.2)
Strongly disagree	330 (18.8)
<b>I feel that my child is currently receiving adequate amounts of physical activity</b>	
Strongly agree	371 (21.1)
Agree	643 (36.5)
Neither agree nor disagree	213 (12.1)
Disagree	452 (25.6)
Strongly disagree	83 (4.7)
<b>I feel that my child is currently receiving adequate amounts of sleep</b>	
Strongly agree	488 (27.7)
Agree	897 (51.0)
Neither agree nor disagree	154 (8.7)
Disagree	199 (11.3)
Strongly disagree	22 (1.3)



	n (%)
<b>Child connected with friends outside the home through social networking or online platforms</b>	
No	128 (7.3)
Yes	1630 (92.7)
<b>Primarily positive or negative experience</b>	
Very negative	7 (0.4)
Negative	80 (4.5)
Neither negative nor positive	310 (17.6)
Positive	837 (47.5)
Very positive	488 (27.7)
Don't know	39 (2.2)
<b>Child connected with family outside the home through social networking or online platforms</b>	
No	172 (9.8)
Yes	1587 (90.2)
<b>Primarily positive or negative experience</b>	
Very negative	4 (0.2)
Negative	29 (1.6)
Neither negative nor positive	254 (14.5)
Positive	736 (42.0)
Very positive	669 (38.2)
Don't know	61 (3.5)
<b>Average time child spends outside of schoolwork using electronic devices since schools closed on <i>weekday</i></b>	
Mean ( $\pm$ Standard Deviation)	3.3 ( $\pm$ 2.1)
<b>Average time child spends outside of schoolwork using electronic devices since schools closed on <i>weekend</i></b>	
Mean ( $\pm$ Standard Deviation)	3.8 ( $\pm$ 2.2)
<b>Aware of what child is doing on media devices</b>	
Always	485 (26.7)
Most of the time	1013 (55.8)
Some of the time	221 (12.2)
Once in a while	35 (1.9)
Never	5 (0.3)
<b>Practiced or enforced any rules of limits on child's screen use during COVID-19 pandemic</b>	
No	330 (18.8)
Yes	1429 (81.2)
<b>Number of times devices (cell phones/smartphones, television, computer/laptops, and iPads or other tablets) interrupt a conversation or activity you are engaged in with your child</b>	
None	440 (25.0)
Once	386 (21.9)
2 to 3 times	646 (36.7)
4 to 5 times	182 (10.3)
6 to 10 times	65 (3.7)
11 to 20 times	35 (2.0)
More than 20 times	6 (0.3)

\* Not applicable responses excluded

**Table 8.** Impact of COVID-19 pandemic on relationships in the home for mothers responding to the COVID-19 Impact Survey between May 20<sup>th</sup> and July 15<sup>th</sup>, 2020 (N = 1,815).

	n (%)
<b>COVID-19 pandemic affected your relationship with your partner*</b>	
It has brought us closer together	442 (27.2)
Not much has changed	955 (58.7)
It has strained our relationship	229 (14.1)
<b>COVID-19 pandemic affected your relationship with your child</b>	
It has brought us closer together	823 (46.8)
Not much has changed	789 (44.9)
It has strained our relationship	145 (8.3)
<b>COVID-19 pandemic affected your partner's relationship with your child*</b>	
It has brought us closer together	585 (35.3)
Not much has changed	926 (56.0)
It has strained their relationship	144 (8.7)
<b>COVID-19 pandemic affected your child's relationship with their siblings*</b>	
It has brought us closer together	812 (51.9)
Not much has changed	556 (35.5)
It has strained their relationship	196 (12.5)
<b>COVID-19 pandemic affected your relationship with your circle of friends and family outside of your household</b>	
It has brought us closer together	172 (9.8)
Not much has changed	1216 (69.3)
It has strained our relationship	367 (20.9)
<b>Describe relationship with your partner*</b>	
A lot of tension	72 (4.4)
Some tension	703 (43.1)
No tension	856 (52.5)
<b>Experienced domestic violence or abuse (past 4 weeks)</b>	
No	1778 (98.9)
Yes	19 (1.1)
<b>If yes, increased since COVID-19</b>	
No	5 (26.3)
Yes	14 (73.7)
<b>Degrees of happiness in your relationship with your spouse/partner*</b>	
Extremely unhappy	28 (1.7)
Quite unhappy	80 (4.9)
A little unhappy	192 (11.7)
Happy	422 (25.7)
Very happy	433 (26.4)
Extremely happy	359 (21.9)
Perfectly happy	125 (7.6)

\*Not applicable (no partner or no siblings) responses have been excluded