



THE RESILIENCE  
OF FAMILIES AS  
THE COVID-19  
PANDEMIC  
SUBSIDES:  
FINANCIAL,  
MENTAL HEALTH &  
DEVELOPMENTAL  
OUTCOMES

EXECUTIVE  
SUMMARY

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## Executive Summary

### About this Cohort of Women & Children

The mothers and children in this COVID-19 Impact study are participants in the All Our Families (AOF) cohort study (formerly the All Our Babies study). These women and children were initially enrolled when the mothers were pregnant (<25 weeks gestation). Recruitment into the study began in 2008 and concluded in 2011. Since enrollment, AOF has collected information twice during pregnancy, 4 months postpartum, as well as 1 year, 2 years, 3 years, 5 years, and 8 years post-birth. Data collection for three maternal and youth COVID-19 Impact Surveys recently concluded, and the next developmental follow-up survey (12-14 years of age) is scheduled to be launched in Fall 2022.

**This report** presents findings from AOF mothers and children approximately 21 months into the pandemic and integrates information from earlier time points, including 3 months into the pandemic (early pandemic), approximately 1 year into the pandemic (mid pandemic), and from before the pandemic began (8 year post birth follow-up survey, pre pandemic). The history of this cohort is described briefly below, and more information can be found on [allourfamiliesstudy.com](http://allourfamiliesstudy.com).

A comparator summary can also be located in Appendix D, which shares observed variables and instruments used by AOF regarding mothers and children of the COVID-19 Pandemic Impact Surveys.

### History of the All Our Families Study

The AOF study began as the All Our Babies study in 2008. It is a prospective cohort study of approximately 3,200 women and their children in Calgary, Alberta. AOF was designed to examine maternal and infant outcomes during the perinatal period and to identify current barriers and facilitators to accessing health care services. Women who agreed to participate were asked to complete three surveys: the first during mid-pregnancy (<25 weeks gestation), the second during the third trimester (34-36 weeks gestation), and the third at 4 months postpartum. Participants were also asked to provide consent to the research team to access their obstetrical and birth records.<sup>1,2,3</sup> From June 2014 to October 2017, participants who agreed to additional research opportunities were asked to participate in a 5 year survey.

In January 2017, the 8 year follow-up<sup>4</sup> was launched to continue to engage with participants and their children from the study. The 8 year survey was sent to all active participants who were initially recruited into the study and agreed to additional research opportunities in the future. In total, 2,074 women participated in the 8 year follow-up study. Data collection ended in March 2020.

Since the 8 year follow-up, data collection for three youth and maternal COVID-19 Impact Surveys has occurred. Development of the next study follow-up survey began in August 2018 but was delayed due to the COVID-19 pandemic, and is now scheduled to launch in the Fall of 2022. AOF continues to collect information on maternal well-being and child development.

**Background of the COVID-19 Impact Surveys:** The AOF cohort represents the parenting population of an urban centre in Canada. Pre-pandemic, the majority of respondents reported a household income at or above the median Calgary income of \$80,000. Given this is a population-based cohort, families with structural and lifestyle vulnerabilities, including poverty, addiction and mental health concerns, participated in the surveys and are included in the findings.

The mothers who were invited to participate in the first COVID-19 Impact Survey were part of two longitudinal cohorts in Alberta called the AOF study and the APrON (Alberta Pregnancy Outcomes and Nutrition) study. APrON has recruited thousands of pregnant Albertan women to determine the impact of their nutrient intake and status on their own mental health, and their children's neurodevelopment and mental health<sup>5</sup>. 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.

In total, three surveys were administered to AOF participants during the pandemic (WHO declared COVID-19 a pandemic on March 11th 2020<sup>6</sup>). Please note that only AOF participants were included in the second and third COVID-19 Impact Surveys in this report. Time 1 occurred approximately 3 months into the pandemic (June 2020), time 2 occurred approximately 1 year into the pandemic (March 2021), and time 3 occurred approximately 21 months into the pandemic (December 2022). This report shares findings from 3 different pandemic time points and 1 pre pandemic time point, with respect to maternal mental health, lifestyle, and relationships as a way to recognize health research gaps and inform policy and practice (N = 1,280). A timeline (Appendix C, Figure 5) has been shared to help provide context to the social environment in Alberta during the COVID-19 pandemic, and additional information is available on the [allourfamiliesstudy.com](http://allourfamiliesstudy.com) website.

*Eight Year Follow-Up, Pre-Pandemic (2017 to 2020):*

*Data collected between January 2017 and March 2020 (N = 2,074)*

*Maternal COVID-19 Survey Time 1, Early Pandemic (approximately 3 months into the pandemic):*

*Data collected between May 20th and July 15th, 2020 (N = 1,815)*

*Maternal COVID-19 Survey Time 2, Mid Pandemic (approximately 1 year into the pandemic):*

*Data collected between March 4th and April 30th, 2021 (N = 1,361)*

*Maternal COVID-19 Survey Time 3, Late Pandemic (approximately 21 months into the pandemic):*

*Data collected between November 22nd and January 17th, 2022 (N = 1,280)*

## 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 approximately 21 months after the initial outbreak of the COVID-19 pandemic, including areas of finance, employment, mental health and well-being, relationships, living situations, and daily life.

## Methods

The first COVID-19 Impact Survey, hereby labelled early pandemic, 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 only data collected up until July 15, 2020 was included. 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 first COVID-19 Impact Survey. Given that the

APrON COVID-19 Impact Survey was still ongoing when the data for AOF's first COVID-19 descriptive report<sup>7</sup> was obtained, the response rate was calculated using only AOF data and determined to be 54%.

The second COVID-19 Impact Survey, hereby labelled mid pandemic, was sent to AOF participants on March 4th, 2021. AOF participants had until April 30th, 2021 to complete the survey through an online personalized link. Four weekly email reminders were sent to participants from the AOF study, and non-responders were contacted by telephone by research assistants. April 30th, 2021 was the last day for AOF participants to complete the survey as the then portal closed. Eligibility criteria included all AOF participants, regardless whether they completed the first COVID-19 Impact Survey. Of the eligible cohort sample, 1,361 mothers completed the second survey. The second survey was developed based on the first survey, other existing COVID-19 surveys, previously used validated scales, and key content areas. Given the urgency of the data collection, a small pilot study (n=12) was completed with in-house researchers prior to launching the survey. Current AOF participants were eligible for the second impact study if they (1) agreed to additional research, (2) were currently active in the study, and (3) had an email address on file. Some participants could complete the study twice on account of having two children. Thus, the eligible cohort sample was composed of 2,423 mothers. Of those, 1,365 consented to complete the survey, and of those whom consented, 1,361 provided useable survey responses for a response rate of 56%.

The third COVID-19 Impact Survey, hereby labelled late pandemic, was sent to AOF participants on November 22, 2021. AOF participants had until January 17, 2022 to complete the survey through an online personalized link. 7 weekly email reminders were sent to participants from the AOF study, and non-responders were contacted by telephone by research assistants. January 17, 2022 was the last day for AOF participants to complete the survey as the portal then closed. Eligibility criteria included all AOF participants, regardless of whether they completed the first or second COVID-19 Impact Surveys. Of the eligible cohort sample, 1,280 mothers completed the third survey. The survey was developed based on the first and second COVID-19 Impact Surveys, other existing COVID-19 surveys, previously used validated scales, and key content areas. Given the urgency of the data collection, a small pilot study (n=12) was completed with in-house researchers prior to launching the survey. Current AOF participants were eligible for this third impact study if they (1) agreed to additional research, (2) were currently active in the study, and (3) had an email address on file. Again, some participants could complete the study twice on account of having two children. Therefore, the eligible cohort sample was composed of 2,389 mothers. Of those, 1,283 consented to completing the survey, and of those whom consented, only 1,280 provided useable survey responses for a response rate of 54%.

All surveys were circulated to content experts, subspecialists, and clinical experts in infectious disease prior to distribution for review, and participants received a \$20 Chapters Indigo gift card as compensation for their time for each survey that they participated in.

### Ethics Approval

This original study was approved by the Child Health Research Office and the Conjoint Health Research Ethics Board of the Cumming School of Medicine, University of Calgary (Ethics ID 20821 and 22821). Participants provided consent at the time of recruitment to participate in the initial study and contact for additional future research. An additional ethics application was submitted and approved for the

COVID-19 pandemic research study (RED13-0868). Participants received an online consent form before accessing the survey, indicating an agreement to the research and having their data linked to previous data collection points. Once consent was received, the survey link directed participants to the start of the survey.

### Components of the Third Maternal COVID-19 Impact Survey

The survey took 20-30 minutes to complete and was designed to understand the continuing impact of the COVID-19 pandemic on families. Each section of the survey was categorized into the following topics:

Section	Topic
<b>Late Pandemic Survey Demographics</b>	<ul style="list-style-type: none"> <li>• Maternal age</li> <li>• Child's age</li> <li>• Family income (pre pandemic)</li> <li>• Marital status (pre pandemic)</li> <li>• Ethnicity</li> </ul>
<b>COVID-19 Impact on Physical Health, Access to Health Care &amp; COVID-19 Vaccine Intentions</b>	<ul style="list-style-type: none"> <li>• COVID-19 infection rates (maternal and youth)</li> <li>• COVID-19 impact on health care (maternal and youth)</li> <li>• Vaccination status and intentions (youth)</li> </ul>
<b>Maternal Health &amp; Well-Being</b>	<ul style="list-style-type: none"> <li>• Anxiety</li> <li>• Depression</li> <li>• Resiliency</li> <li>• Stress</li> </ul>
<b>Impact of COVID-19 on Work &amp; Financial Life</b>	<ul style="list-style-type: none"> <li>• Financial impact of COVID-19 pandemic</li> <li>• Types of financial and other supports provided and received during COVID-19</li> <li>• Food security</li> </ul>
<b>AOF Child's School Status &amp; Screen Time During COVID-19</b>	<ul style="list-style-type: none"> <li>• Child's school status</li> <li>• Child's screen time</li> <li>• Maternal awareness of child's activities on media devices</li> <li>• Rules or limits on child's screen use</li> </ul>
<b>BASC-3: Child Measures for Hyperactivity, Anxiety, Depression, and Attention (Combined Sex Scores)</b>	<ul style="list-style-type: none"> <li>• Hyperactivity</li> <li>• Anxiety</li> <li>• Depression</li> <li>• Attention Problems</li> </ul>
<b>Impact of COVID-19 Pandemic on Lifestyle, Relationships Inside the Home &amp; Living Situations</b>	<ul style="list-style-type: none"> <li>• Experiences regarding ability to fulfill family, work, and other responsibilities</li> <li>• Relationship happiness</li> <li>• Partners' current mental health status</li> <li>• Relationship tension</li> <li>• Activities during the pandemic</li> <li>• Substance use</li> <li>• Changes and satisfaction regarding living situation</li> <li>• Pet acquirement</li> </ul>

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|  | <ul style="list-style-type: none"> <li>• Preliminary overview (qualitative) regarding mothers and their family’s ability to manage during COVID-19 and unexpected positive experiences within families during COVID-19</li> </ul> |
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## Highlighted Results

### Key Findings During Late Pandemic

- Individually maternal and child COVID-19 infection rates were <10%.
- A high proportion of mothers reported elevated anxiety (26%), depression (33%) and stress (19%) during the late pandemic, which are approximately double pre-pandemic rates, and similar to rates reported early in the pandemic.
- 75% of mothers during the late stages of the pandemic scored as either medium or high resilient copers.
- The majority of mothers (68%) reported that they are either “living very comfortably” or “living comfortably,” and 49% of mothers reported that the value of their overall finances stayed the same during the COVID-19 pandemic.
- 33% of mothers reported receiving financial support from their provincial or federal government during the COVID-19 pandemic.
- 5% of mothers reported food insecurity during the late stages of the pandemic.
- Majority of children (69%) exceeded screen time guidelines.
- Most children (66%-76%) received average scores for all BASC-3 constructs (hyperactivity, anxiety, depression, and attention problems); however, 12%-19% of children were in the at-risk or clinically significant category for at least one construct.
- Most mothers (78%) reported high degrees of happiness (ranging from happy to perfectly happy) in their relationship with their partners. While 22% of mothers rated their relationship as lower than happy (ranging from a little unhappy to extremely unhappy).
- Few mothers (5%) reported having *a lot* of tension in their relationship with their partner, while 48% and 47% of mothers reported either *some* or *no* tension, respectively.
- Just under one quarter of mothers (24%) reported using or consuming cannabis or cannabis products for either medical or non-medical purposes, with “to relax,” “to help with sleep,” and “enjoyment” being the main reasons for usage.
- Most mothers (86%) reported no change in their living situation since the pandemic's beginning, and 84% reported being satisfied with the amount of space in their current living situation.
- Many families reported that the pandemic has brought on unexpected positive experiences, such as new routines, traditions, or activities that have resulted in increased family closeness (please see Table 21).
- Some families had negative experiences regarding several aspects of daily life such as school, work, finances, accessing health care, general mental health and well-being, and relationships during the COVID-19 pandemic.

## Specific Findings During the Late Pandemic by Topic Area

### Late Pandemic Survey Demographics

- Mean maternal age was 42.9 years (range from 31 to 55 years). Additionally, the mean age of AOF children was 11.1 years (range from 10 to 13 years).
- Regarding pre pandemic family income, the majority of mothers (86%) reported that their annual family income was \$80,000 or greater, and 14% reported a family income of less than \$80,000 (asked in the early pandemic survey).
- Based on previously collected longitudinal data, most mothers reported that they were married or common law (94%) and belonged to the Caucasian (79%) category regarding ethnicity.

### COVID-19 Impact on Physical Health, Access to Health Care & COVID-19 Vaccine Intentions

- Approximately 21 months into the pandemic, individually maternal and child COVID-19 infection rates remained under 10%.
- Over 80% of families did not have personal experience with COVID-19, either through personal infection, infection of a child, or anyone else within their household.
- Most mothers reported that there was **never** a time that they felt that *they* (73%) or *their child* (90%) needed access to health care but did not seek it due to COVID-19. However, 6%-8% of mothers who reported seeking health care either for *themselves* or *their child* were **turned away**. Reasons for being turned away included having COVID-19 like symptoms (e.g., runny nose, cough) and not being able to tolerate wearing a mask.
- During late stages of the pandemic, 50% of AOF children had received at least one dose of a COVID-19 vaccine and most mothers (61%) reported that they plan to vaccinate their child. Additionally, 21% of mothers were undecided regarding vaccination, and 18% reported that they did not intend to vaccinate their AOF child.

### Maternal Health & Well-Being

- A high proportion of mothers reported elevated anxiety (26%), depression (33%) and stress (19%) during late stages of the pandemic, which are approximately double pre-pandemic rates, which was also evidenced early in the pandemic. However, 75% of mothers during the late stages of the pandemic scored as either medium or high resilient copers, which demonstrates that the majority of mothers believed they had the skills and ability to deal with the challenging pandemic situation, including feeling in control and an ability to grow positively from challenge, which was also evidenced early in the pandemic.

### Impact of COVID-19 on Work & Financial Life

- The majority of mothers (68%) reported that they are either “living very comfortably” or “living comfortably,” while 32% of mothers reported their current household financials as “getting by” to “very difficult” during the late stages of the pandemic.
- 49% of mothers reported that the value of their overall finances stayed the same, 31% reported a decrease, and 20% reported an increase.
- 15% of mothers during the late stages of the pandemic reported that they had to increase their work hours due to COVID-19, 10% had their hours decreased, 9% were temporarily laid off, and 6% experienced job loss due to the pandemic. Additionally, 10% of mothers had chosen to either reduce their work hours or leave their jobs to better manage competing demands and priorities during the pandemic.

- Nearly one-quarter (24%) of mothers reported that their partner had their work hours reduced, were temporarily laid off, or experienced job loss due to the COVID-19 pandemic.
- Just over half (55%) of mothers did **not** provide financial or other types of support (e.g., childcare, care for an adult, or other domestic labour tasks) to family (within or outside of their immediate household) or friends through out the pandemic.
- Most mothers reported **not** receiving any form of support from family within the same household (71%), family from outside their household (65%), friends (67%), community/volunteer organizations (91%), professionals (70%), employers (82%), or their provincial/federal government (65%) throughout the COVID-19 pandemic. However, when mothers did report receiving support, it was mainly in the form of **other types of support** (please see Table 10).
- Over the course of the pandemic, 33% of mothers reported receiving financial support from their provincial or federal government during the late pandemic.
- 5% of mothers reported food insecurity during the late pandemic. In comparison, 5% and 8% of mothers reported the same experience early and mid pandemic, respectively. Additionally, 1% of mothers reported that someone in their household received food from a food bank during the late stages of the pandemic, which is a decrease from pre pandemic rates (2%), early pandemic (2%), and mid pandemic (3%).

#### Impact of COVID-19 on Child’s School Status & Screen Time

- Majority of AOF children (93%) had returned to attend school in-person during the late pandemic, which was a 9% increase from one year into the pandemic.
- During late pandemic almost one-third of children (31%) meet the Canadian 24-Hour Movement screen time guidelines<sup>8</sup> of “no more than 2 hours per day of recreational screen time.”
- 79% of mothers reported that they enforced rules or limits on their child’s screen use, which is a decrease in comparison to pre pandemic rates (90%), three months into the pandemic (81%), and one year into the pandemic (82%).

#### Child Measures for Hyperactivity, Anxiety, Depression, and Attention

- Most children (66%-76%) received average scores for all BASC-3 constructs (hyperactivity, anxiety, depression, and attention problems). However, 15% of children were in the at-risk or clinically significant category for hyperactivity, 12% for anxiety, 14% for depression, and 19% for attention problems.
- During late pandemic, there was a decrease in all at-risk or clinically significant constructs, except for hyperactivity, when compared to rates from one year into the pandemic; the largest change regarding at-risk or clinically significant constructs was depression with a 5% decrease from 19% to 14%.

#### Impact of COVID-19 on Lifestyle, Relationships Inside the Home, and Living Situations

- During the late stages of the pandemic, majority of mothers (68%) reported that they *sometimes* found it difficult to fulfill their family, work, or other responsibilities, such as volunteer work, household duties, and childcare; in comparison this is a decrease from pre pandemic rates (74%) and an increase from mid pandemic rates (65%).

- 78% of mothers rated the degree of happiness in their relationships from “happy” to “perfectly happy,” which is a slight increase (2%) from the information shared by mothers one year into the pandemic and a slight decrease (4%) regarding mothers from 3 months into the pandemic.
- Partner mental health as reported by mothers was mainly defined as “very good” (34%) or “good” (32%). One year into the pandemic (mid pandemic survey), mothers (28%) reported that their partner’s mental health had worsened since the pandemic began.
- Almost all mothers (48% and 47%) reported either *some* or *no* tension in their relationship with their partner, respectively. In comparison to results from the early and mid pandemic surveys tension levels appear to be relatively stable as relationships were described as having *some* tension 43% (early pandemic) and 45% (mid pandemic) or as having *no* tension 53% (early pandemic) and 49% (mid pandemic).
- Just over half of mothers (58%) reported *some* alcohol consumption within the last month, of which 39% reported having had 4 or more drinks on one occasion (defined as binge drinking) at least once within the last month.
- Most mothers (76%) reported never using or consuming cannabis or cannabis products for either medical or non-medical purposes within the last year. However, of the mothers who did report cannabis or cannabis product usage, the most common response regarding usage frequency was “a few times, but less than once per month” (13%) with “to relax,” “to help with sleep,” and “enjoyment” being the top three reasons for usage.
- Most mothers (86%) reported **no change** in their living situation since the pandemic's beginning, with a detached house being the most common housing type (85%) and 84% of mothers reported being *very satisfied* or *satisfied* with the amount of space in their current home.
- 31% of mothers reported that they had gotten a new pet during the pandemic.

## Conclusion

Almost 2 years into the pandemic (December 2022), many constructs investigated by AOF’s COVID-19 Impact study have remained stable, and many families have reported that the pandemic has brought on unexpected positive experiences. However, some families have continued to experience unprecedented levels of stress, anxiety, and depression which can influence the ability to cope with activities of daily living including self-care, parenting, and domestic duties. During the early pandemic, 58% of families reported that they had experienced some job adjustment as either mother and partner or just one had lost their job or income source. However, at the end of the pandemic, 35% of mothers and 24% of partners had reported changes in access to financial resources such as: work hours reduced, temporarily laid off, experienced job loss, or chose to reduce their work hours or leave their jobs to better manage competing demands and priorities. Changes in access to financial resources, which was experienced by 35% of the sample in late pandemic, can contribute to mental health concerns, including relationship stress. Importantly, prior to the pandemic, the majority of these families would have been well-positioned to meet their financial obligations, including those associated with supporting their children to succeed in school and thrive in daily life. Addressing the long-term influence of cumulative stresses on families and children should be considered during the COVID-19 pandemic recovery. As two-thirds of families who participated in this COVID-19 Impact study appeared to be coping well and, at times, even thriving throughout the pandemic, we suggest that resources be directed to those who need them and call for the continued empowerment of those who are coping.

**For further information, please contact the AOF Study at [allourfamilies@ucalgary.ca](mailto:allourfamilies@ucalgary.ca)**