



THREE YEAR FOLLOW-UP (Q6) DESCRIPTIVE REPORT

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Technical Summary

About this Cohort of Women and Children

The mothers and children in this follow-up study are a part of a cohort called the All Our Families study (formerly the All Our Babies study). These women and children have been participants in this study since the mothers were pregnant. Recruitment into the study began in 2008 and concluded in 2011. Since then, we have collected information twice during pregnancy and at 4 months, 1 year, 2 years, and 3 years postpartum. Data collection of the 5 year follow-up questionnaire recently concluded and is in the beginning stages of data editing, while the 8 year follow-up questionnaire was launched in Spring 2017.

This report presents findings from All Our Families mothers and children at 3 years of age and integrates information from earlier time points. The history of this cohort is described briefly below, more details can be found on allourfamiliesstudy.com.

Objectives

1. To describe the AOF cohort with respect to demographics, lifestyle, mental health, social support, and service utilization at 3 years post-delivery.
2. To describe the physical health, sleep habits, screen time, family activities, and child development outcomes of children in the cohort.
3. To describe the parenting experience, parent-child interaction, and child's relationship with father at 3 years post-delivery.
4. To examine bivariate associations between specific child outcomes and i) household income, and ii) preterm birth status.

Methods

This study at 3 years was developed to follow-up the initial All Our Babies cohort of women, for whom extensive information and consent for follow-up has already been gathered.

Women who participated in the prenatal questionnaires and indicated at the time of enrollment that they would be willing to participate in future research were eligible for this follow-up study. Of the 3,387 participants who completed at least one survey in the prenatal period, participants were eligible to complete the 3 year follow-up when their child was 35-36 months. Due to timing and resources related to the questionnaire development and implementation, 2909 participants were eligible to receive the 3 year questionnaire. The questionnaire was developed with input from health care providers, epidemiologists, child development experts, and community program experts.

Highlighted Results

The All Our Families participants represent the medically and socio-demographic low risk pregnant and parenting population in Calgary. At the 3 year mark, participants were, on average, 34 years old (SD=4.4), where a majority were married or living in common-law (95.0%), had a household income of \$80,000 or more (78.4%), and attended a post-secondary institution (92.8%). Most participants were White/Caucasian (82.2%), born in Canada (82.0%), and primarily spoke English at home (90.4%). A large majority of AOF children lived in two-parent family households (95.2%) at the time, where nearly two-thirds of mothers reported working for pay.

Among eligible participants for the 3 year study (N=2,909), women who completed the 3 year study were compared to women who did not complete the questionnaire. Data below was taken from the initial cohort study.

Compared to women who participated in the 3 year follow-up study, those who were part of the initial AOF study and **eligible** to participate in the 3 year follow-up but did not were more likely to have the following characteristics:

- Less than 25 years old when they entered the study during pregnancy
- Single, separated, or divorced
- Did not complete post-secondary education
- Low household income
- Born outside of Canada
- Non-white or Caucasian
- Not primarily English speaking household

Overall, a large proportion of mothers rated feeling good, very good, or excellent in regards to their emotional health and well-being (91.7%). Based on participant's self-report using standardized tools, 12.4% displayed symptoms of depression (CES-D), 17.5% displayed symptoms of stress (PSS), and 15.2% displayed symptoms of anxiety (SSAI). Sixteen percent of participants scored high levels of neuroticism or instability (EPQ-R). The Adverse Childhood Experiences (ACE) Survey was used to cover past experiences of physical, verbal, and sexual abuse, as well as witnessing violence in the home, experiencing parental separation or divorce, and living with a mentally ill or substance addicted adult/parent. Approximately 37.6% reported 0 ACEs, 23.5% reported only 1 ACE, 13.8% reported 2 ACEs and approximately one-quarter reported 3 or more ACEs (25.1%).

When their children were 3, 13.1% of participants reported it was difficult most or all of the time to fulfill family, work, and other responsibilities. This included volunteer work, household duties, and other children in the home. Majority of the mothers reporting feeling confident in their parenting skills (91.6%). However, if mothers scored high in symptoms of depression or anxiety, their confidence in parenting skills were lower and they were more likely to have lower levels of positive parenting interactions, lower levels of consistent parenting behaviours, higher levels of ineffective or hostile parenting behaviours, and higher levels of irrational parenting behaviours. These mothers were more likely to find it difficult to balance family, work, and other responsibilities.

A large majority of participants reported, in general, their physical health was good, very good, or excellent (94.1%) and exercised at least once a week for 15-30 minutes a day, regardless of the number of intervals (88%). On an average weeknight, 16.2% of participants reported getting more than 7 hours of uninterrupted sleep, whereas 32.1% of participants reported getting between 4-5 hours and 36.9% of participants reported getting between 6-7 hours or uninterrupted sleep. Only 40.7% of mothers reported feeling they were getting enough sleep.

At the 3 year follow-up, approximately 52% of children in the sample were males and the mean age was 36.4 months old. Children ranged in age from 32 months to 55 months old, where 85% fell in between the ages of 35 to 37 months. On average, this group of children weight 14.7 kg and were 96.0 cm tall. Overall, almost all children were rated as having good to excellent health (99.3%). Nearly one-third

(30.8%) of children were recommended by a health care worker or a doctor to see another specialist or health care professional. Of those who reported seeing another health care professional, the top three recommended specialists were speech-language therapists (27.%), dieticians (18.7%), and developmental pediatricians (14.0%). Approximately three-quarters (71.3%) of participants reported their child had not been diagnosed with a medical or developmental condition by the age of 3. Of those who did report a diagnosis, the top diagnoses were eczema (44.7%), allergies (25.0%), and asthma (14.5%).

Nearly all children in our study were exposed to some level of screen time (99.5%) by the age of 3. On weekdays, approximately 88% of children had 1 hour or more screen time per day and on weekends, nearly 93% had 1 hour or more screen time per day. In total, over the course of a full week, only 1.6% of children at the age of 3 were following the Canadian Paediatric Society and Canadian Behaviour Guidelines recommendations of less than 1 hour a day of screen time. Over half (52.1%) of mothers reported their 3 year old was engaging in at least 3 hours of physical activity a day.

Approximately 20% of mothers reported spending half an hour or more sharing books with their children and 18.6% reported their child spending half an hour or more looking at books on their own. In a typical day, nearly 95% of mothers read to their child at least once a day

According to mothers in our study, the best place chatting or conversing occurs with their child was during meal time (28.1%) or at bedtime (23.6%). Half of participants spent more than one hour talking or chatting with their child (51.6%).

Based on maternal report on the Ages and Stages Questionnaire (ASQ-3), 5.2% of children had a communication delay, 12.7% had a gross motor delay, 15.3% had a fine motor delay, 11.2% had a problem solving delay, and 5.6% had a personal-social delay at three years of age. In comparison to two years of age, the prevalence for fine motor delay increased while all other domains decreased in frequency.

The Rothbart Child Behaviour Questionnaire (Very Short Form) consists of 36 items and was used in this study to assess child temperament. Approximately 17% of children at age 3 scored high levels of extraversion/surgency (e.g., activity, impulsivity, positive emotion, and engagement) and negative affectivity (e.g., anger, contempt, disgust), the same proportion of children scored low levels of effortful control (e.g., attentional regulation, inhibitory control, executive attention).

In our sample, 16.8% of children had high levels of hyperactivity/inattention behaviour, 9.6% of children had high levels of emotional/anxiety behaviour, 13.0% of children had high levels of physically aggressive behaviour, and 18.9% had high levels of separation anxiety behaviour as measured by the NLSCY Child Behaviour Checklist (Modified-Preschool Version, CBCL).

At 3 years, mothers reported the amount of time fathers spent with their children. On work days, a large majority of fathers spent at least one hour per day playing with their children (64.2%) and sharing the responsibility of caring for the child (77.8%). Over one-third (32.1%) of fathers spent at least one hour per day being entirely responsible for caring for the child on work days. On days off, a large proportion of fathers spent at least one hour per day playing with their children (95.9%), sharing the responsibility of caring for the child (95.5%), and being entirely responsible for caring for the child (74.2%).

Participants who were part of the three year follow-up sample were described to generally have lower social risk. Compared to women who did not continue to participant at 3 years, women who did were more likely to be 25 years or older at delivery, married or common-law, completed post-secondary education, have a household income of \$80,000 or more, born in Canada, white/Caucasian, and primarily speak English at home. Our results are likely most generalizable to medically low risk and socio-demographic low risk women and their children.

Conclusions

At 3 years, participants were asked to update previous data collected including demographic characteristics. On average, mothers at this time were nearly 35 years old. Most of these women were married or living with a common-law partner, had a post-secondary education, and lived in a household earning \$80,000 or more a year. The majority reported being born in Canada and primarily spoke English at home. Of the 65.2% of women who reported working (either part-time or full-time), approximately 31.0% worked 20 hours per week or less.

Compared to children in families with total household incomes of at least \$80,000, children in families with total household incomes below \$80,000:

- were less likely to play pretend games at 2 and 3 years of age with an adult,
- were less likely to play with educational toys at 2 and 3 years of age with an adult,
- were more likely to have congenital abnormalities or birth defects.
- were more likely to have delayed communication development on the ASQ-3,
- were more likely to have delayed gross motor development on the ASQ-3,
- were more likely to have delayed fine motor development on the ASQ-3,
- were more likely to have delayed problem-solving development on the ASQ-3,
- were more likely to have delayed personal-social development on the ASQ-3,
- were more likely to be delayed in at least 2 domains of child development on the ASQ-3.
- were more likely to have higher levels of negative affectivity on the Rothbart VSF CBQ,
- were more likely to have higher levels of hyperactivity/inattention on the Rothbart VSF CBQ,
- were more likely to have higher levels of separation anxiety on the NLSCY CBCL,
- were more likely to have higher levels of internalizing behaviour on the NLSCY CBCL,
- were more likely to have higher levels of externalizing behaviour on the NLSCY CBCL.

Compared to children who were born term (37 weeks gestation or more), children who were born preterm (<37 weeks gestation):

- were more likely to have fair or poor health,
- were more likely to be diagnosed with developmental delays,
- were more likely to be diagnosed with asthma.
- were more likely to have delayed communication development on the ASQ-3,
- were more likely to have delayed gross motor development on the ASQ-3,
- were more likely to have delayed fine motor development on the ASQ-3,
- were more likely to have delayed problem-solving development on the ASQ-3,
- were more likely to have delayed personal-social development on the ASQ-3,

- were more likely to be delayed in at least 2 domains of child development on the ASQ-3.

Compared to mothers who were not depressed, mothers with higher symptoms of depression on the CES-D when their child was 3 years old:

- were more likely to report it is difficult most or all of the time to fulfill family, work or other responsibilities
- were more likely to be less confident in their parenting skills,
- were more likely to score lower levels of positive parenting interaction,
- were more likely to score lower levels of consistent parenting interactions,
- were more likely to score higher levels of ineffective or hostile parenting behaviours, and
- were more likely to score higher levels of irrational parenting behaviours.

Compared to mothers who were not anxious, mothers who displayed higher symptoms of anxiety on the SSAI when their child was 3 years old:

- were more likely to report it is difficult most or all of the time to fulfill family, work or other responsibilities
- were more likely to be less confident in their parenting skills,
- were more likely to score lower levels of positive parenting interaction,
- were more likely to score lower levels of consistent parenting interactions,
- were more likely to score higher levels of ineffective or hostile parenting behaviours, and
- were more likely to score higher levels of irrational parenting behaviours.

Strategies targeted at supporting families with preterm children and providing parents resources in the community may positively influence child development at age three. In addition, creating supports aimed at new parents' mental health may encourage effective parenting behaviours.