# FIRST NATIONS FAMILY MODELS OF CARE IN EARLY CHILDHOOD TECHNICAL REPORT



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# **KEY FINDINGS**

## Social Determinants of Health and Children's Development and Well-being

- Household Income: Higher household incomes are associated with better developmental and communication milestones, particularly for children aged 4–5 years.
- **Parental Education**: Higher educational attainment of parents, especially mothers, significantly correlates with better developmental milestones and communication milestones for children aged 2–5 years.
- Nutrition: Regular nutritious diet is linked to better developmental and communication outcomes across all age groups.
- Sleep Schedule: Consistent sleep schedules correlate with better developmental outcomes for children aged 2–5 years.
- Family Separation: Experiences of family separation due to child welfare interventions show associations with lower communication milestones for older children (4–5 years).

## Home Environments and Children's Development and Well-being

- **Nurturing Home Environment:** The vast majority of parents/guardians reported that children were growing up in highly nurturing environments characterized by verbal praise and physical affection.
- **Quality of Learning in Home Environment**: Higher quality of learning within the home and engagement in a wide variety of learning activities are positively correlated with developmental and communication skills.
- **Breastfeeding:** Breastfeeding shows a positive correlation with communication abilities and comprehension but shows a complex relationship with developmental milestones.

- **Crowding Index:** Less crowded homes are associated with better developmental and communication outcomes, indicating the negative impact of overcrowded living conditions.
- **Participation in Cultural Activities:** The frequency of First Nations children's participation in cultural activities is positively associated with all the developmental and communication outcomes, emphasizing the important role of cultural experiences for First Nations children.

## Caregiving Environments and Children's Development and Well-being

- **Child care Quality:** Experiences with higher quality child care environments, especially those that include First Nations caregivers or cultural teachings, are significantly correlated with better developmental and communication outcomes.
- Child care Arrangements: Experiences with regular and formal child care settings are positively correlated with communication and developmental outcomes, which suggests these settings may provide a more supportive environment for First Nations children's development compared to more informal or sporadic care arrangements.
- **Exposure to First Nations Culture in Child care:** Regular exposure to First Nations Traditional Teachings within child care settings is positively correlated with many of the communication outcomes for First Nations children.

# **1. INTRODUCTION**

# **OVERVIEW**

This technical report offers a statistical insight into the impact of First Nations family models of care on the developmental milestones and well-being of children in their early years. Drawing from the 2021 FNIGC literature review *First Nations Family Models of Care in Early Childhood,* this report explores the social and environmental factors that influence the growth and well-being of young First Nations children. The findings are underpinned by data from the FNIGC's First Nations Regional Early Childhood, Education and Employment Survey (FNREEES, or REEES), enhancing our understanding of these effects.

This technical report focuses on three core research questions:

- 1. How do **social determinants of health** influence the development and wellbeing of First Nations children?
- 2. How do **home environments** influence the development and well-being of First Nations children?
- 3. How do **caregiving environments** influence the development and well-being of First Nations children?

# **Organization of Report**

This report is organized into five main sections, structured to address the three research questions outlined above:

- Section 1 provides an overview and outlines the analytical methods used,
- Sections 2, 3, and 4 examine each research question, assessing a set of independent variables against the dependent variables related to child development and well-being, and
- Section 5 concludes with the findings of the technical report.

# **Methods Summary**

The statistical analyses in this report are derived from data collected through the FNREEES between November 2013 and May 2015, focusing on information obtained from the primary caregivers and First Nations children via the Child Questionnaire. The

analysis includes data from 3,168 participants. For more detailed information on the survey methodology, including data collection, sampling techniques and data weighting, refer to the comprehensive national report titled *Now is the Time: Our Data, Our Stories, Our Future: The National Report of the First Nations Regional Early Childhood, Education and Employment Survey* (FNIGC, 2016). <u>https://fnigc.ca/wp-content/uploads/2021/01/FNIGC\_FNREEES-National-Report-2016-EN\_FINAL\_01312017.pdf</u>

# Dependent and Independent Variables

This report assesses the well-being and developmental progress of First Nations children from birth to 5 years, using six key indicators (dependent variables) outlined in <u>Table 1</u>. They include:

- developmental milestones for ages birth to 1 year,
- developmental milestones for ages 2 to 5 years,
- communication abilities from birth to 5 years,
- communication comprehension from birth to 5 years,
- communication milestones from ages 2 to 3 years, and
- communication milestones from ages 4 to 5 years.

These six dependent variables are indices constructed by the FNREEES child questionnaire, specifically designed to capture parents' or guardians' responses on their children's developmental and communication milestones at the time they completed the survey.

Developmental milestones refer to typical skills and abilities observed in children as they grow, encompassing areas such as play, learning, speech, behaviour and movement within specific age ranges (Centers for Disease Control and Prevention [CDC], 2023). These milestones track the progression from crawling and walking to self-dressing. To assist parents, paediatricians, and early childhood professionals in monitoring these developments, developmental surveillance milestone checklists are employed, highlighting expected achievements and potential warning signs (Zubler et al., 2022). In the FNREEES, questions were tailored to capture the developmental phases of children, focusing on three age categories: 1 year, 2–3 years, and 4–5 years.

The developmental milestone questions in the FNREEES were modelled after those in the Aboriginal Children's Survey conducted by Statistics Canada in 2006 (Statistics Canada, 2008). Within this technical report, two of the six dependent variables focused on evaluating developmental milestones related to physical and cognitive growth.

These include one index variable (dependent) for children from birth to 1 year and another for children aged 2–5 years.

The remaining four index variables (dependent) are centred around various aspects of communication, encompassing one index variable for communication abilities from birth to 5 years; one for understanding communication comprehension from birth to 5 years; one for specific communication milestones for children aged 2–3 years; and another communication milestones for children aged 4–5 years. <u>Table 1</u> provides detailed descriptions of each derived variable that contributes to the analysis of these six dependent variables.

Index Variable	Description	Milestones
Developmental milestones (DM) (birth to 1 year)	An index variable was created consisting of the sum of "yes" responses to questions about the child development milestones. The index ranges from 0 (no milestones accomplished) to 3 (all milestones accomplished)	<ul> <li>Child has:</li> <li>sat up by themselves</li> <li>started crawling</li> <li>started walking on their own</li> </ul>
Developmental milestones (DM) (2–5 years)	An index variable was created consisting of the sum of "yes" responses to questions about the child development milestones. The index ranges from 0 (no milestones accomplished) to 6 (all milestones accomplished)	<ul> <li>Child:</li> <li>knows their own age</li> <li>knows their own gender</li> <li>dresses without any help (except for tying shoes and buttoning the backs of outfits)</li> <li>is toilet trained</li> <li>sorts objects, clothes, food or any other items by groups</li> <li>finds things they need with or without being told to</li> </ul>
Communication abilities (CA) (birth to 5 years)	An index variable was created consisting of the sum of "ever" (i.e., not "never") responses to questions about the communication abilities milestones. The index ranges from 0 (no communication abilities reported) to 4 (all communication abilities reported)	<ul> <li>How often child:</li> <li>expressed needs using full sentences</li> <li>expressed needs with 2–3 words</li> <li>expressed needs with single word</li> <li>expressed needs using sounds other than crying</li> <li>(Answered on a 5-point scale: never, rarely, sometimes, most of the time, all of the time)</li> </ul>

## Table 1: Description of six measures used for dependent variables

Communication comprehension (CC) (birth to 5 years)	An index variable was created consisting of the sum of "ever" (i.e., not "never") responses to questions about the communication comprehension milestones. The index ranges from 0 (no communication comprehension reported) to 3 (all communication comprehension milestones reported)	<ul> <li>How often:</li> <li>child understands when spoken to</li> <li>parent understands what child is saying</li> <li>other people understand what child is saying</li> <li>(Answered on a 5-point scale: never, rarely, sometimes, most of the time, all of the time)</li> </ul>
Communication milestones (CM) (2–3 years)	An index variable was created consisting of the sum of "yes" responses to questions about the communication milestones. The index ranges from 0 (no milestones accomplished) to 5 (all milestones accomplished)	<ul> <li>Child can:</li> <li>tell story using their own words</li> <li>count to 10</li> <li>count three objects</li> <li>give three of something when asked</li> <li>name four colours</li> </ul>
Communication milestones (CM) (4–5 years)	An index variable was created consisting of the sum of "yes" responses to questions about the communication milestones. The index ranges from 0 (no milestones accomplished) to 10 (all milestones accomplished). Four-year-olds and five-year-olds were analyzed separately due to the additional items asked of them	<ul> <li>Child can:</li> <li>tell story using their own words</li> <li>count to 10</li> <li>count three objects</li> <li>give three of something when asked</li> <li>name four colours</li> <li>carry out instructions after hearing them once</li> <li>ask for things to be repeated or explained if does not understand what someone said</li> <li>follow conversation and stay on topic</li> <li>pass on simple messages to others</li> <li>clearly explain things they have seen or done</li> </ul>

In order to explore the main research questions, several independent variables were selected from the FNREEES dataset. The choice of variables for inclusion in the technical analysis was guided by insights from the literature review on *First Nations Family Models of Care in Early Childhood*. The selection aimed to shed light on the wholistic understanding of family well-being and the inherent strengths within First Nations families. The analysis incorporated a total of 37 independent variables, examining their relationship with the six dependent variables that measure developmental and

communication milestones in First Nations children (<u>Table 1</u>). These independent variables include:

- Fourteen (14) independent variables related to social determinants of health (research question #1), including household income, parent education and employment, food security and nutrition, Indian Residential School (IRS) experiences and knowledge of Traditional Languages.
- Thirteen (13) independent variables related to home environments (research question #2), including household composition and crowding, breastfeeding practices, level of prenatal support, children's experiences in the home in terms of a nurturing environment, opportunities for learning and access to cultural experiences.
- Ten (10) independent variables related to caregiving environments and supports (research question #3), including type of child care arrangements (local or nonlocal, formal or informal), degree of satisfaction with child care, whether child care was provided by individuals of First Nations background, participation in First Nations early childhood programs and opportunities for language and cultural learning through child care.

# **Statistical Analyses**

While controlling for the age and gender of children, each independent variable was entered into a linear regression model, separately, for each dependent variable. This resulted in six regression models for each independent variable (see Appendix A: Model Outputs). The purpose of constructing these models was not to evaluate the total predictive value of the model (consisting of age, gender and an independent variable), but rather to determine whether the independent variables are making any statistically significant (i.e.,  $p \le .05$ ) contributions, which explain variance in the dependent variable (independent of age and gender). Importantly, statistical tests conducted on model parameters to assess statistical significance (e.g., the Wald F test) do not discern which groups are significantly different from one another. Instead, they demonstrate that the independent variable helps to explain variation in the dependent variable (i.e., is different from the null hypothesis). The construction of the independent variables is shown in Appendix B: Independent Variable Construction. Regarding data quality, the use of "F" denotes data suppression due to low reliability when the cell count is five or fewer, or the coefficient of variation exceeds 33.3%. Conversely, an estimate marked with an "E" indicates a moderate to high coefficient of variation, ranging from 16.7% to 33.3%. Estimates tagged with "E" require cautious and considerate interpretation due to the increased uncertainty in the data's precision.

The sections that follow in this technical report provide a comprehensive analysis addressing the three research questions. For each question, the associations between the independent variables and the six index variables (dependent), which are consistently used across all research questions, are examined. To aid in the interpretation of the analyses, <u>Table 2</u> presents the average scores for developmental and communication milestones as reported by caregivers of First Nations children. This includes the means and 95% confidence intervals (95% CI) for each index variable within the dataset. The subsequent analyses aim to examine how different independent variables, specifically those related to social determinants of health, home environments and caregiving environments, contribute to understanding variability in these developmental and communication milestone scores.

Index Variable	Mean	95% Cl
	Milestone Score	
Developmental milestones (birth to 1 year) Index range 0–3 milestones	2.44	[2.35, 2.53]
Developmental milestones (2-5 years) Index range 0–6 milestones	5.15	[5.03, 5.26]
Communication abilities (birth to 5 years) Index range 0–4 milestones	3.70	[3.64, 3.75]
Communication comprehension (birth to 5 years) Index range 0–3 milestones	2.93	[2.92, 2.95]
Communication milestones (2–3 years) Index range 0–5 milestones	3.36	[3.10, 3.62]
Communication milestones (4–5 years) Index range 0-10 milestones	8.77	[8.54, 9.00]

## Table 2: Means and standard deviations for the six index variables

# 2. SOCIAL DETERMINANTS OF HEALTH AND CHILDREN'S DEVELOPMENT AND WELL-BEING

# **OVERVIEW**

This section explores the social determinants of health and their influence on the development and well-being of First Nations children aged birth to 5 years. The independent variables in this analysis include:

- household income,
- parent employment,
- parent education,
- sources of parental support,
- food security,
- nutrition,
- sleep,
- family Indian Residential School (IRS) attendance,
- relatives separated from family, and
- knowledge and proficiency in speaking/understanding a First Nations language.

<u>Table 3</u>, which draws on data outputs in <u>Appendix A</u>, provides an overview of "social determinants of health" independent variables that were explored in relation to the six developmental and communication milestone scores presented as dependent variables in <u>Table 2</u>.

# Table 3: Description and statistical significance of 'social determinant' independent variables

Variable Name	Description	Type of Variable (nominal, ordinal, continuous)	DM (birth to 1 yr)	DM (2–5 yrs)	CA (birth to 5 yrs)	CC (birth to 5 yrs)	CM (2–3 yrs)	CM (4–5 yrs)
Household Income	Household IncomeTotal household incomeOrdinal, four levelsIncome. Less than \$20,000\$20,000 to \$49,999\$50,000 or moreDon't know/refused		РРР	Ρ	-	-	-	PPP

Parent Employment	ParentEmployment statusNominal, two levelsEmploymentof parents, pooled from separate questions of male/female 		-	-	-	-	-	Ρ
Parent Education Education status of parents, pooled from separate questions of male/female guardian education status		<ul> <li>Ordinal, three levels</li> <li>&lt; High school education</li> <li>High school graduate</li> <li>Some post-secondary or higher</li> </ul>	-	PP	-	-	PP	PPP
<i>Female Guardian</i> <i>Education</i> <i>Education</i> <i>Education</i> <i>Education</i>		<ul> <li>Ordinal, three levels</li> <li>&lt; High school education</li> <li>High school completion</li> <li>Post-secondary</li> </ul>	РРР	РРР	-	-	РРР	РРР
Male Guardian Education Teducation status of male guardian		<ul> <li>Ordinal, three levels</li> <li>&lt; High school education</li> <li>High school completion</li> <li>Post-secondary</li> </ul>	-	Р	-	-	-	PP
Sources of How often Parental Support participants have people they can turn to for help when they need it		Ordinal, three levels <ul> <li>Always</li> <li>Sometimes</li> <li>Rarely/never</li> </ul>	-	-	-	-	-	РРР
Food Security Index	Index of food security, pooled from responses to six food security factors	<ul> <li>Ordinal, three levels</li> <li>Food secure</li> <li>Food insecure, moderate</li> <li>Food insecure, severe</li> </ul>	-	-	-	-	Р	-
Nutrition	How often child ate a balanced diet	<ul> <li>Ordinal, two levels</li> <li>Sometimes, rarely, or never</li> <li>Always/almost always</li> </ul>	-	РРР	-	-	Ρ	Ρ
Sleep Schedule       How often child has a consistent sleep schedule       Ordinal, two levels         • Some or none of time       • All or most of the		<ul> <li>Ordinal, two levels</li> <li>Some or none of the time</li> <li>All or most of the time</li> </ul>	-	РР	-	-	-	Р
Family Residential School Attendance	How many parents or grandparents attended Indian Residential Schools	<ul> <li>Ordinal, three levels</li> <li>No parent or grandparent attended</li> <li>At least one parent or grandparent attended</li> </ul>	Ρ	-	-	-	РР	-

		<ul> <li>Don't know/refused to answer</li> </ul>						
Family Separation Experiences	How many parents/guardians were separated from family by child welfare agencies, church, or government officials	<ul> <li>Ordinal, three levels</li> <li>No parent was separated from family</li> <li>At least one parent was separated from family</li> <li>Don't know/refused to answer</li> </ul>	-	-	-	-	-	PP
Knowledge of a First Nations Language	Does child have knowledge of a First Nations language	<ul> <li>Ordinal, two levels</li> <li>No knowledge of a First Nations language</li> <li>Any knowledge of a First Nations language</li> </ul>	-	-	-	-	-	-
Proficiency in Speaking/ Understanding First Nations Ianguage	Index of ability of child to speak and understand First Nations language, pooled from single questions on ability to speak and understand	<ul> <li>Ordinal, three levels</li> <li>Cannot speak or understand</li> <li>Basic or only a few words</li> <li>Very or relatively well</li> </ul>	PP	PP	-	Р	-	-

Note:  $P = p \le .05$ ;  $PP = p \le .01$ ;  $PPP = p \le .001$ 

## Household Income and Parent Employment

Data from the FNREEES indicate that parents/guardians of First Nations children aged birth to 5 years fall more frequently in the lower household income brackets. Specifically, 29.8% reported a household income under \$20,000; 28.0% between \$20,000 and \$49,999; 11.6% at \$50,000 or more; and 30.1% reported either don't know or refused to disclose their household income.

Total household income significantly influenced developmental milestones (DM) for children from both age groups, birth to 1 year (p < .001) and 2-5 years (p = .045) (see Appendix A). For children aged birth to 1 year, those from households earning more than \$50,000 annually had significantly higher DM scores (M = 2.73, 95% CI [2.59, 2.86]) compared to those from lower-income households (M = 2.26, 95% CI [2.05, 2.46]). While income impacted the developmental outcomes for children aged 2–5 years, the data did not reveal significant differences in mean scores between the income groups (see Table 4).

Household income was also a significant predictor of communication milestones (CM) for children aged 4–5 years (p <.001), however, not for those aged 2–3 years (see <u>Appendix A</u>). The mean scores for communication milestones of children aged 4–5

years increased with each income bracket (see <u>Table 4</u>). Conversely, household income was not a significant predictor of communication abilities (CA) or communication comprehension (CC).

	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
< \$20K	2.26	5.04	3.68	2.92	3.21	8.67		
	[2.05, 2.46]	[4.82, 5.27]	[3.61, 3.76]	[2.88, 2.96]	[2.80, 3.61]	[8.45, 8.89]		
\$20K-	2.58	5.22	3.68	2.94	3.45	8.90		
\$49K	[2.45, 2.71]	[5.04, 5.40]	[3.58, 3.79]	[2.91, 2.97]	[3.03, 3.88]	[8.65, 9.15]		
> \$50K	2.73	5.18	3.79	2.96	3.49	9.58		
	[2.59, 2.86]	[4.64, 5.71]	[3.70, 3.89]	[2.94, 2.99]	[2.42, 4.57]	[9.44, 9.73]		
Don't Know/ refused	2.44 [2.23, 2.64]	5.13 [4.94, 5.33]	3.67 [3.59, 3.76]	2.93 [2.90, 2.96]	3.26 [3.04, 3.48]	8.52 [7.91, 9.14]		

Mean values and 95% Cls for each household income level and dependent variable

Regarding parent employment, nearly two-thirds (62.4%) of households with children aged birth to 5 years had at least one parent/guardian employed either full or part time, while 37.6% had no working parent/guardian.

For children aged 4–5 years, parent employment significantly predicted CM (p = .011) (see <u>Appendix A</u>). Children in this age group with at least one employed parent/guardian scored higher on CM (M = 9.05, 95% CI [8.91, 9.18]) compared to those without an employed parent/guardian (M = 8.41, 95% CI [7.87, 8.95]) (see <u>Table 5</u>).

#### Table 5: Parent employment

	Mean values and 95% Cls for each parent employment status and dependent variable						
	Development al Milestones (birth to 1 yr)	Development al Milestones (2-5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2-3 yrs)	Communication Milestones (4-5 yrs)	
At least one	2.51	5.18	3.70	2.94	3.49	9.05	
parent/guardian	[2.39, 2.64]	[5.04, 5.33]	[3.64, 3.75]	[2.92, 2.96]	[3.18, 3.80]	[8.91, 9.19]	
employed full or							
part time							
No parent/guardian	2.31	5.03	3.68	2.92	3.14	8.41	
is employed	[2.16, 2.45]	[4.84, 5.21]	[3.61, 3.75]	[2.90, 2.95]	[2.66, 3.62]	[7.87, 8.95]	

# **Parent/Guardian Education**

FNREEES data show that nearly two-thirds of children had parents/guardians who either graduated from high school (29.4%) or attained some post-secondary education or higher (29.7%), while 40.9% did not complete high school.

The educational status of at least one parent/guardian was predictive of DM and CM for children older than 2 years. Specifically, DM for ages 2-5 (p = .002); CM for ages 2-3 (p = .002) and ages 4-5 (p < .001) (see <u>Appendix A</u>). Higher parental educational attainment correlated positively with certain dependent variables, particularly in children aged 4–5 years. For instance, parents/guardians with some post-secondary education or higher, correlated with higher CM scores in children aged 4-5 years (M = 9.42, 95% CI [9.29, 9.55]) compared to those with less than high school (M = 8.32, 95% CI [7.84, 8.80]), as detailed in Table 6. However, parental educational attainment was not a significant predictor of children's CA or CC scores.

#### Table 6: Parent education

Mean values and 95% Cls for each parent education status and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)
< High	2.43	5.02	3.70	2.93	2.93	8.32
School	[2.31, 2.55]	[4.83, 5.22]	[3.62, 3.77]	[2.90, 2.96]	[2.59, 3.28]	[7.84, 8.80]
High School	2.35	5.17	3.68	2.93	3.59	8.78
Graduate	[2.18, 2.53]	[5.05, 5.29]	[3.59, 3.77]	[2.90, 2.97]	[3.29, 3.89]	[8.53, 9.04]
Some Post- secondary or Higher	2.56 [2.44, 2.69]	5.31 [5.08, 5.54]	3.73 [3.65, 3.81]	2.95 [2.93, 2.97]	3.62 [3.12, 4.13]	9.42 [9.29, 9.55]

Female parents/guardians reported higher educational attainment than male counterparts. Specifically, 56.8% of male parents/guardians had less than high school, compared to 49.3% of female parent/guardians. Furthermore, 26.8% of female parents/guardians were high school graduates, slightly more than the 23.4% of males. Additionally, 23.9% of female parents/guardians had some post-secondary education or higher, exceeding the 19.8% of males who achieved similar level of education.

The education level of female parents/guardians was more predictive of both DM and CM than that of male parents/guardians. Specifically, female parent/guardian education significantly predicted DM and CM across all ages (DM 0-1, p < .001; DM 2-5, p = .001; CM 2–3, p < .001; CM 4–5, p < .001). Conversely, male parent/guardian

education was only predictive for older children (DM 2–5, p = .015 and CM 4–5 CM, p = .002), detailed in <u>Appendix A</u>.

Both female and male parent/guardian higher-education levels were generally related to improved DM and CM scores (see <u>Table 7</u> and <u>Table 8</u>). Overall, the data suggests that parent/guardian education is associated with DM and CM, particularly for children aged 2 years and older, and more specifically for female parents/guardians (see <u>Table 7</u>).

Table	7:	Female	parent/	'guardian	education
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	Mean values and 95% Cls for each female guardian education level and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication	
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones	
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)	
< High	2.39	4.94	3.70	2.92	2.85	8.36	
School	[2.27, 2.52]	[4.73, 5.15]	[3.63, 3.76]	[2.90, 2.95]	[2.54, 3.17]	[7.95, 8.78]	
High School	2.37	5.21	3.71	2.94	3.80	8.94	
Graduate	[2.17, 2.57]	[5.09, 5.33]	[3.63, 3.79]	[2.91, 2.97]	[3.46, 4.13]	[8.70, 9.19]	
Some Post- secondary or Higher	2.59 [2.46, 2.73]	5.45 [5.35, 5.55]	3.68 [3.59, 3.77]	2.95 [2.93, 2.97]	3.86 [3.65, 4.08]	9.41 [9.26, 9.56]	

#### Table 8: Male parent/guardian education

Mean values and 95% Cls for each male guardian education level and dependent variable Communication Communication Developmental Developmental Communication Communication Milestones Milestones Abilities Comprehension Milestones Milestones (birth to 5 yrs) (birth to 1 yr) (birth to 5 yrs) (4-5 yrs) (2–5 yrs) (2–3 yrs) < High 2.46 5.11 3.69 2.93 3.11 8.71 [4.94, 5.27] [2.90, 2.96] [2.34, 2.57] [3.61, 3.76] [2.83, 3.39] [8.26, 9.17] School 2.32 5.20 3.71 2.93 8.90 High School 3.66 [8.62, 9.19] [2.17, 2.48] [5.07, 5.33] [3.61, 3.80] [2.90, 2.97] [3.34, 3.99] Graduate 2.38 3.72 2.95 3.64 9.40 Some Post-5.18 [2.20, 2.56] [4.89, 5.47] [3.60, 3.84] [2.92, 2.97] [2.82, 4.46] [9.19, 9.60] secondary or Higher F Others F F F

Note: F denotes data suppressed due to high sampling variability.

# Sources of Parental Support

Almost half of the surveyed parents/guardians (46.2%) reported that they "always" have people they could turn to for support, while 37.4% indicated they "sometimes" have such support, and only 16.4% reported "rarely/never" having access to these sources of support.

The availability of support significantly predicted CM for children aged 4–5 years (p < .001), but did not influence the other dependent variables (see <u>Appendix A</u>). Specifically, children aged 4–5 years from households with more frequent parental support sources exhibited higher CM milestone scores (see <u>Table 9</u>).

	Mean values and 95% Cls for each sources of parental support and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication	
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones	
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)	
Always	2.39	5.24	3.67	2.93	3.43	9.23	
	[2.24, 2.53]	[5.12, 5.35]	[3.61, 3.73]	[2.90, 2.95]	[3.20, 3.67]	[9.08, 9.38]	
Sometimes	2.49	5.00	3.72	2.94	3.21	8.46	
	[2.29, 2.69]	[4.77, 5.24]	[3.65, 3.80]	[2.91, 2.96]	[2.71, 3.71]	[8.26, 8.65]	
Rarely/	2.49	5.21	3.68	2.95	3.63	8.24	
Never	[2.29, 2.69]	[5.03, 5.40]	[3.53, 3.82]	[2.92, 2.98]	[3.18, 4.08]	[7.32, 9.16]	

## Table 9: Sources of parental support

# Food Security and Nutrition

A Food Security Index was developed—a measure of food insecurity in the child's household—using FNREEES responses to six food security factors:

- 1) inability to afford more food;
- 2) inability to afford to eat balanced meals;
- 3) needing to cut meal sizes or skip meals due to insufficient money for food;
- 4) frequency of cutting meal sizes or skipping meals;
- 5) eating "at less" due to insufficient money for food; and,
- 6) experiencing hunger due to being unable to afford enough food.

This index categorized parents/guardians into three categories: food secure (52.5%), moderately food secure (37.5%), or severely food insecure (10.0%).

The Food Security Index significantly predicted CM for children aged 2–3 years (p = .032) but did not significantly affect other dependent variables such as DM, CA or CC (see <u>Appendix A</u>). The significance of this finding should be interpreted with caution due to a high coefficient of variation (above the threshold of 0.333). Notably, children aged 2–3 years from severely food insecure households had lower CM scores compared to those from more food secure households (see <u>Table 10</u>).

Mean values and 95% Cls for each Food Security Index and dependent variable								
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)		
Food	2.40	5.13	3.68	2.93	3.36	8.93		
Secure	[2.30, 2.51]	[4.97, 5.30]	[3.62, 3.74]	[2.91, 2.95]	[3.02, 3.71]	[8.78, 9.07]		
Food	2.49	5.11	3.66	2.92	3.58	8.94		
Insecure,	[2.34, 2.65]	[4.93, 5.29]	[3.58, 3.75]	[2.89, 2.95]	[3.18, 3.98]	[8.72, 9.16]		
Moderate								
Food	2.46	5.33	3.80	2.97	2.19 <sup>E</sup>	8.50		
Insecure,	[2.10, 2.81]	[5.12, 5.55]	[3.70, 3.89]	[2.96, 2.99]	[1.43, 2.95]	[8.07, 8.94]		
Severe								

#### Table 10: Food Security Index

nd 050/ Cle for each Food Socurity Index and dependent variable ,

Note: <sup>E</sup> High sampling variability, interpret with caution.

Parents/guardians were asked about the nutritional quality of their children's diet. Over half (54.6%) reported that their children "always" or "almost always" eat a nutritious diet, while 45.5% indicated that their children "sometimes," "rarely," or "never" eat a nutritious diet. Unlike the Food Security Index, the regularity of a balanced diet (i.e., nutrition) significantly influenced children's DM for ages 2-5 years (p < .001) and CM for ages 2–5 years (p = .034) and 4–5 years (p = .012), as detailed in <u>Appendix A</u>.

Specifically for children aged 2–5 years, those who "always" or "almost always" ate a nutritious diet had significantly higher DM scores (M = 5.32, 95% CI [5.23, 5.42]), compared to those who "sometimes," "rarely," or "never" ate a nutritious diet (M = 4.90, 95% CI [4.69, 5.11]). Similarly, children who "always" or "almost always" ate a nutritious diet had significantly higher CM scores (ages 2–3 years, M = 3.62, 95% CI [3.41, 3.84]; ages 4–5 years, M = 9.05, 95% CI [8.90, 9.21]), compared to those who ate a lower nutritional intake (ages 2-3 years, M = 3.01, 95% CI [2.56, 3.46]; ages 4-5 years, M = 8.49, 95% CI [8.06, 8.93]) (see <u>Table 11</u>).

#### Table 11: Nutrition

	Mean values and 95% Cls for each level of nutrition and dependent variable							
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)		
Sometimes,	2.42	4.90	3.71	2.95	3.01	8.49		
Rarely, or Never	[2.25, 2.59]	[4.69, 5.11]	[3.65, 3.78]	[2.93, 2.97]	[2.56, 3.46]	[8.06, 8.93]		
Always/Almost	2.48	5.32	3.67	2.92	3.62	9.05		
always	[2.37, 2.59]	[5.23, 5.42]	[3.61, 3.74]	[2.89, 2.94]	[3.41, 3.84]	[8.90, 9.21]		

# Sleep Schedule

Most parents/guardians (82.8%) reported that their children followed a consistent sleep schedule "all or most of the time," while only 17.2% indicated "some or none of the time."

The consistency of the children's sleep schedule was significantly associated with DM of children aged 2–5 years (p = .002) and CM of children aged 4–5 years (p = .021) (see Appendix A). It did not significantly predict outcomes for younger children or impact other dependent variables (see Appendix A). Specifically, children who maintained a consistent sleep schedule "all or most of the time" had significantly higher DM scores (ages 2–5, M = 5.19, 95% CI [5.09, 5.31]) and CM scores (ages 4–5, M = 8.94, 95% CI [8.80, 9.08]) compared to those who did so "some or none of the time" (DM 2–5, M = 4.86, 95% CI [4.57, 5.15]; CM 4–5, M = 7.93, 95% CI [7.04, 8.83]) (see Table 12).

#### Table 12: Sleep schedule

	Mean values and 95% Cls for each level of sleep schedule and dependent variable							
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)		
Some or none of the time	2.31 [1.98, 2.64]	4.86 [4.57, 5.15]	3.69 [3.59, 3.80]	2.93 [2.88, 2.98]	3.25 [2.92, 3.57]	7.93 [7.04, 8.83]		
All or most of the time	2.48 [2.39, 2.57]	5.19 [5.06, 5.31]	3.70 [3.65, 3.75]	2.94 [2.92, 2.95]	3.35 [3.06, 3.64]	8.94 [8.80, 9.08]		

# Family Indian Residential School Experiences and Family Separation

Over half of surveyed parents/guardians (58.6%) reported that their child had at least one parent or grandparent who attended Indian Residential School, while 28.2% indicated that no parent or grandparent had attended. Additionally, 12.9% of parents/guardians either refused to answer or did not know.

The presence of a parent or grandparent who attended Indian Residential School significantly influenced CM for children aged 2–3 years (p = .004), though it did not affect CM for ages 4–5 years, nor did it impact CA or CC. Furthermore, Indian Residential School attendance was a predictor of DM for children aged birth to 1 year (p = .026), but not for those aged 2–5 years (see <u>Appendix A</u>).

Although family Indian Residential School experiences significantly influenced children's development and well-being, the directionality of the relationships was mixed. Children aged 2–3 years without a parent or grandparent who attended Indian Residential School achieved higher CM scores than those with such a family history (see <u>Table 13</u>). Conversely, children aged birth to 1 year with a parent or grandparent who attended Indian Residential School scored higher on DM than those without this family history (see <u>Table 13</u>). Furthermore, children of parents/guardians who either refused to answer or responded "do not know" registered the highest scores in both DM and CM. Given the mixed results and notable number of "do not know" responses, these findings should be interpreted with caution.

	Mean values and 95% Cls for each level of family Indian Residential School attendance and dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
No parent or	2.26	5.23	3.69	2.94	3.51	8.96		
grandparent attended	[2.07, 2.44]	[5.09, 5.37]	[3.61, 3.77]	[2.91, 2.96]	[3.29, 3.72]	[8.71, 9.20]		
At least one parent or grandparent attended	2.47	5.08	3.70	2.93	3.19	8.89		
	[2.31, 2.62]	[4.91, 5.25]	[3.64, 3.75]	[2.91, 2.95]	[2.83, 3.55]	[8.73, 9.05]		
Don't know/ refused	2.61	5.27	3.69	2.96	4.14	7.78		
	[2.43, 2.80]	[5.02, 5.51]	[3.55, 3.83]	[2.93, 2.99]	[3.74, 4.54]	[6.64, 8.93]		

#### Table 13: Family Indian Residential School attendance

Parents/guardians were surveyed on whether the child's parent(s) had been separated from their family by a child welfare agency, church or government official. According to the FNREEES data, 72.7% reported that no parent had been separated from their family, 6.7% indicated that at least one parent had been separated and 20.6% either refused to answer or responded "do not know."

The separation of any parent by a welfare agency, church or government official was significantly associated with CM for children aged 4–5 years (p = .002) (see <u>Appendix</u> <u>A</u>). Specifically, children in this age range whose parent(s) had not been separated from family scored higher on CM (M = 9.04, 95% CI [8.90, 9.16]) compared to those with at least one parent who was separated (M = 8.80, 95% CI [8.36, 9.24]) (see <u>Table 14</u>). More analysis may be needed for this variable to better understand this relationship as the CIs overlap. No relationship was found between parental separation and other dependent variable such as DM, CA or CC.

#### Table 14: Family separation experiences

	wear values and 95% cis for each rever of family separation experiences and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication	
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones	
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)	
No parent	2.42	5.12	3.69	2.93	3.25	9.04	
was separated	[2.31, 2.53]	[4.99, 5.25]	[3.63, 3.74]	[2.91, 2.95]	[2.96, 3.53]	[8.90, 9.16]	
from family							
At least one	2.42	5.40	3.64	2.93	3.59	8.80	
parent was	[1.93, 2.91]	[5.21, 5.59]	[3.42, 3.85]	[2.85, 3.02]	[3.28, 3.90]	[8.36, 9.24]	
separated							
from family							

Mean values and 95% Cls for each level of family separation experiences and dependent variable

## Knowledge of and Proficiency in First Nations Languages

Parents/guardians reported on their children's knowledge of and proficiency in First Nations languages. Three-quarters (75.2%) indicated that their children had "some knowledge" of a First Nations language, while one quarter (24.8%) reported "no knowledge." Additionally, 26.2% of parents/guardians indicated that their children spoke a First Nations language "very or relatively well," and 47.5% said their children had basic proficiency or could speak "a few words." However, the same percentage (26.2%) reported their children could neither speak nor understand a First Nations language.

While children's knowledge of a First Nations language was not a significant predictor of any of the studied dependent variables, interesting patterns emerged in DM and CC scores. Across all age groups, children who could not speak or understand a First Nations language had lower DM, CA, CC and CM scores than those with some language ability (see <u>Table 15</u>).

	Mean values and 95% CIs for each level of First Nations language knowledge and dependent variable						
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)	
No knowledge of a First Nations Ianguage	2.55 [2.40, 2.71]	5.07 [4.78, 5.36]	3.74 [3.67, 3.82]	2.94 [2.90, 2.98]	3.28 [2.56, 3.99]	8.76 [8.46, 9.06]	
Any knowledge of a First Nations language	2.71 [2.57, 2.84]	5.40 [5.27, 5.52]	3.85 [3.81, 3.90]	2.98 [2.96, 2.99]	3.76 [3.60, 3.93]	8.98 [8.67, 9.29]	

#### Table 15: First Nations language knowledge

Proficiency in speaking or understanding a First Nations language was associated with higher DM and CC scores for children. Specifically, DM for ages birth to 1 year (p = .002) and 2–5 years (p = .009), and CC for birth to 5 years (p = .016) (see <u>Appendix A</u>). However, the variable was not predictive for CA and CM.

First Nations children with a basic understanding or only a few words of a First Nations language achieved higher DM and CC scores than those who could not speak or understand (see <u>Table 16</u>). Additionally, children who had a basic understanding of a First Nations language and understood relatively well had higher CC scores than children who did not (see <u>Table 16</u>).

	language and dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
Cannot speak	2.51	5.07	3.73	2.93	3.28	8.82		
or understand	[2.36, 2.66]	[4.80, 5.35]	[3.66, 3.80]	[2.89, 2.97]	[2.57, 4.00]	[8.51, 9.13]		
Basic or only a	2.78	5.48	3.87	2.99	3.86	8.98		
few words	[2.68, 2.89]	[5.38, 5.58]	[3.82, 3.92]	[2.98, 3.00]	[3.64, 4.07]	[8.58, 9.38]		
Very or	2.72	5.25	3.84	2.96	3.59	8.95		
relatively well	[2.47, 2.97]	[5.00, 5.50]	[3.77, 3.92]	[2.93, 3.00]	[3.29, 3.89]	[8.74, 9.16]		

Mean values and 95% CIs for each level of proficiency in speaking/understanding First Nations

#### Table 16: Proficiency in speaking and understanding First Nations language

## Discussion

This chapter's exploration into the social determinants of health as they impact the development and well-being of First Nations children aged birth to 5 years underscores the profound influence of socio-economic factors, familial structures and cultural continuity. The evidence presented, drawn from the FNREEES dataset, highlights the interconnections between household income, parental employment and education, and the broader environmental and historical contexts affecting these children. For instance, higher household incomes correlate with more significant developmental and communication milestones, particularly in children aged 4–5 years. Similarly, significant relationships exist between children's DM and CM scores and variables such as parental employment and education, particularly education levels of female parents/guardians.

Moreover, the findings highlight critical insights into the protective factors that could bolster the resilience of First Nations families. For example, access to a nutritious diet and stable sleep schedules are significantly linked to better developmental and communication outcomes, pointing to areas where policy interventions and community support could yield substantial improvement in child health and well-being. The lasting impacts of historical injustices such as the Sixties Scoop and Indian Residential School attendance are profound in the associations found between family separation and lower communication milestones. These findings emphasize the need for approaches that are both aware of and responsive to the historical and ongoing trauma experienced by First Nations. They highlight the importance of addressing the social determinants of health to improve early leaning and development in First Nations children. By recognizing the historical context, this approach suggests that community and family support play crucial roles in enhancing the well-being of First Nations children and families.

# 3. HOME ENVIRONMENTS AND CHILDREN'S DEVELOPMENT AND WELL-BEING

# Overview

This section explores children's experiences in the home environment and how these experiences influence their development and well-being. The independent variables in this analysis include:

- living with a birth parent,
- marital status of household,
- crowding index,
- child breast-fed status,
- child bottle-fed status,
- support for mothers during pregnancy,
- first prenatal appointment,
- nurturing home environment,
- quality of learning in home environment,
- child home learning experiences,
- exposure to First Nations language,
- importance of Traditional Teachings and spirituality, and,
- participation in cultural activities.

<u>Table 17</u>, which draws on data outputs in <u>Appendix A</u>, provides an overview of the "home environment" independent variables that were explored in relation to the six

developmental and communication milestones scores presented as dependent variables in Table 2.

Variable Name	Description	Type of Variable (nominal, ordinal, continuous)	DM (birth to 1 yr)	DM (2–5 yrs)	CA (birth to 5 yrs)	CC (birth to 5 yrs)	CM (2–3 yrs)	CM (4–5 yrs)
<i>Child Living with Birth Parent</i>	Whether child lives with at least one birth parent	<ul> <li>Nominal, 2 levels</li> <li>Child does not live with a birth parent</li> <li>Child lives with at least one birth parent</li> </ul>	-	-	-	-	Ρ	-
Marital Status of Household	Marital status of the household	Nominal, 6 levels <ul> <li>Married</li> <li>Common-law</li> <li>Widowed</li> <li>Separated</li> <li>Divorced</li> <li>Single, never married</li> </ul>	ррр	-	-	-	РР	PP
Crowding Index	Number of family members per room in household	<ul> <li>Ordinal, 2 levels</li> <li>Not crowded (less than or equal to one person per room)</li> <li>Crowded (greater than one person per room)</li> </ul>	Р	-	-	Р	-	PP
Child Breast- fed Status	Whether child was breast-fed or not	Nominal, 2 levels <ul> <li>Not breast-fed</li> <li>Breast-fed</li> </ul>	-	Р	Р	РР	-	-
Child Bottle- fed Status	Whether child was bottle-fed (including water, formula, juice, etc.) in first six months	Nominal, 2 levels No Yes	Ρ	-	-	-	-	-
Sources of Prenatal Care	Whether mother had at least one source of support during pregnancy	<ul><li>Ordinal, 2 levels</li><li>At least one source of support</li></ul>	-	-	-	-	-	-

# Table 17: Description and statistical significance of 'home environment' independent variables

		<ul> <li>No sources of support</li> </ul>						
First Prenatal Appointment	Timeframe of mother's first prenatal appointment	Ordinal, 3 levels <ul> <li>13 weeks or earlier</li> <li>14 to 27 weeks</li> <li>28 weeks or later</li> </ul>	PPP	-	-	-	PPP	-
Nurturing Home Environment	Index of whether home environment provided verbal praise and/or physical affection to child	<ul> <li>Ordinal, 2 levels</li> <li>Generally not nurturing</li> <li>Generally nurturing</li> </ul>	РР	-	-	РРР	РР	РРР
<i>Quality of Learning in Home Environment</i>	Index of quality of learning in home for child, pooled from responses to nine home environment factors	Ordinal, 3 levels <ul> <li>None or some (0–5)</li> <li>Most (6–8)</li> <li>All (9)</li> </ul>	-	РРР	РР	þ	РРР	РРР
Child Home Learning Experiences	Index of the frequency in which children engage in seven different learning activities with caregivers	<ul> <li>Ordinal, 3 levels</li> <li>None or few activities done daily (0-2)</li> <li>Some activities done daily (3-5)</li> <li>All or most done daily (6-7)</li> </ul>	р	РРР	РРР	РР	РРР	РРР
Exposure to First Nations Language in Community	Frequency of exposure for child to First Nations language in community	<ul> <li>Ordinal, 2 levels</li> <li>Generally not exposed to First Nations language</li> <li>Generally exposed to First Nations language</li> </ul>	-	-	Ρ	-	-	-
Importance of Traditional Teachings	Degree of importance of Traditional Teachings for child	<ul> <li>Ordinal, 2 levels</li> <li>Somewhat important to not important</li> <li>Very important</li> </ul>	-	-	-	-	-	-
Importance of Traditional Spirituality	Degree of importance of traditional	<ul> <li>Ordinal, 3 levels</li> <li>Not important or a little important</li> <li>Somewhat important</li> </ul>	-	РР	-	-	Р	-

	spirituality for child	<ul> <li>Very important</li> </ul>						
Participation in Cultural Activities	Frequency of attendance or participation by child in cultural activities	<ul> <li>Ordinal, 2 levels</li> <li>Less than once per month to never</li> <li>At least once per month</li> </ul>	PPP	РРР	РРР	PPP	РРР	PPP

**Note:**  $P = p \le .05$ ;  $PP = p \le .01$ ;  $PPP = p \le .001$ 

# Household Composition

A majority of surveyed parents/guardians (80.3%) reported that their children live with at least one birth parent, while 19.7% indicated their children do not live with either birth parent. Residency with a birth parent was not predictive of childhood development or well-being, except for CM for children aged 2–3 years (p = .044) (see Appendix A). For these children, those not living with a birth parent had significantly higher CM scores (M = 3.71, 95% CI [3.36, 4.07]) compared to those with at least one birth parent (M = 3.26, 95% CI [2.97, 3.55]), as detailed in Table 18.

## Table 18: First Nations children living with birth parent

	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)
Child does not live with a birth parent	2.44 [2.13, 2.74]	5.26 [5.04, 5.48]	3.72 [3.62, 3.82]	2.92 [2.88, 2.97]	3.71 [3.36, 4.07]	8.67 [8.42, 8.92]
Child lives with at least one birth parent	2.44 [2.34, 2.53]	5.11 [4.99, 5.24]	3.69 [3.64. 3.74]	2.94 [2.92, 2.95]	3.26 [2.97, 3,55]	8.79 [8.50, 9.08]

Mean values and 95% Cls for each birth parent status and dependent variable

Regarding parent/guardian marital status, 37.0% were in "common-law" relationships, 35.9% were "single, never married," 20.8% were "married," and 4.6% were "separated." Very few parents/guardians were either "widowed" or "divorced."

Marital status of the child's household significantly predicted DM for children aged birth to 1 year (p < .001) and CM for ages 2–3 (p = .005) and ages 4–5 (p = .002).

However, marital status did not predict CA or CC for children aged birth to 5 years or DM for children aged 2–5 years (see Appendix A).

Caution in interpreting these findings is advised due to low cell count across some categories and inconsistent patterns in the relationships between marital status and milestone scores. For example, children aged 2-3 years from "separated" households scored highest in CM (M = 4.55, 95% CI [4.06, 5.04]), while those aged 4–5 years from similar households ranked second lowest (M = 8.66, 95% CI [8.06, 9.26]) (see Table 19). Moreover, the FNREEES's use of Western concepts and terminology for marital status, such as "nuclear families," might not align with First Nations perspectives. Research highlighted in the First Nations Family Models of Care in Early Childhood literature review by Rountree & Smith (2016) suggests that Western terms and models around the nuclear family are often less applicable in Indigenous communities.

## Table 19: Marital status of household

	Mean values and 95% Cls for each marital status of household and dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
Married	2.41	5.13	3.71	2.93	3.15	9.06		
	[2.17, 2.64]	[4.79, 5.46]	[3.61, 3.81]	[2.90, 2.97]	[2.62, 3.70]	[8.83, 9.29]		
Common-	2.33	5.11	3.67	2.93	3.14	8.68		
law	[2.18, 2.48]	[4.91, 5.30]	[3.58, 3.77]	[2.90, 2.96]	[2.87, 3.41]	[8.17, 9.19]		
Widowed	F	5.14 [4.04, 6.24]	3.54 [3.00, 4.08]	2.97 [2.91, 3.03]	3.81 [2.92, 4.71]	7.09 [5.83, 8.35]		
Separated	2.91	5.30	3.91	2.97	4.55	8.66		
	[2.78, 3.03]	[5.05, 5.55]	[3.84, 3.98]	[2.94, 3.00]	[4.06, 5.04]	[8.06, 9.26]		
Divorced	F	5.40 [5.04, 5.75]	3.94 [3.87, 4.01]	2.97 [2.92, 3.02]	3.34 [2.77, 3.92]	9.11 [8.86, 9.35]		
Single, never married	2.53 [2.40, 2.66]	5.15 [4.98, 5.31]	3.67 [3.61, 3.74]	2.93 [2.90, 2.96]	3.43 [3.15, 3.71]	8.72 [8.50, 8.95]		

Note: F denotes data suppressed due to high sampling variability.

An index of household crowding was developed by comparing the number of family members to the number of rooms in a household. Households with one person or fewer were categorized as "not crowded," and those with more than one person per room were considered "crowded." According to the FNREEES data, 53.9% of surveyed households were not crowded, while 46.1% were crowded.

The data suggests that household crowding negatively influenced DM and CM scores in certain age groups, as well as CC scores. Specifically, crowding was a significant

predictor of DM for children aged birth to 1 year (p = .030) (see <u>Appendix A</u>), showing that children in not crowded homes had higher scores (M = 2.54, 95% CI [2.44, 2.64]) compared to those in crowded conditions (M = 2.31, 95% CI [2.11, 2.52]) (see <u>Table 20</u>). Additionally, for children aged 4–5 years, crowding was a predictor of CM scores (p = .005) (see <u>Appendix A</u>), showing that those living in not crowded households had significantly higher CM scores (M = 9.04, 95%CI [8.90, 9.19]) than children in crowded households (M = 8.44, 95% CI [8.02, 8.86]) (see <u>Table 20</u>). Among children aged birth to 5 years, crowding was a significant predictor of CC scores (p = .032), but not of CA (see <u>Appendix A</u>), with children who lived in not crowded households having higher CC scores (M = 2.94, 95% CI [2.93, 2.96]) than children who lived in crowded households (M = 2.92, 95% CI [2.90, 2.95]) (see <u>Table 20</u>).

## Table 20: Crowding index

			<u> </u>	· · · · · · · · · · · · · · · · · · ·		
	Developmental	Developmental	Communication	Communication	Communication	Communication
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)
Not	2.54	5.18	3.70	2.94	3.36	9.04
Crowded	[2.44, 2.64]	[5.02, 5.34]	[3.64, 3.75]	[2.93, 2.96]	[3.00, 3.72]	[8.90, 9.19]
Crowded	2.31	5.12	3.70	2.92	3.38	8.44
	[2.11, 2.52]	[4.96, 5.28]	[3.62, 3.78]	[2.90, 2.95]	[3.06, 3.71]	[8.02, 8.86]

#### Mean values and 95% Cls for each level of crowding index and dependent variable

# Breast-fed and Bottle-fed Status

A majority of parents/guardians (63.0%) reported that their children were breast-fed, while 37.0% indicated that their children were not breast-fed.

Breastfeeding significantly influenced DM achieved by children aged 2–5 years (p = .0337) (see <u>Appendix A</u>), where surprisingly breast-fed children scored lower (M = 5.08, 95% CI [4.91, 5.24]) than those who were no breast-fed (M = 5.23, 95% CI [5.08, 5.38]) (see <u>Table 21</u>). However, breastfeeding was positively corelated with better outcomes in CA (p = .014) and CC (p = .002) for children aged birth to 5 years (see <u>Appendix A</u>), with breast-fed children achieving significantly higher CA scores (M = 3.71, 95% CI [3.64, 3.77]) and CC scores (M = 2.95, 95% CI [2.93, 2.97]) compared to non-breast-fed children (CA, M = 3.66, 95% CI [3.58, 3.75]; CC, M = 2.91, 95% CI [2.88, 2.94]) (see <u>Table 21</u>).

Table 21: Child breast-fed status

	Mean values and 95% Cls for each child breast-fed status and dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
Not	2.32	5.23	3.66	2.91	3.41	8.63		
breast-	[2.17, 2.47]	[5.08, 5.38]	[3.58, 3.75]	[2.88, 2.94]	[2.97, 3.85]	[8.43, 8.83]		
fed								
Breast-	2.50	5.08	3.71	2.95	3.33	8.87		
fed	[2.37, 2.62]	[4.91, 5.24]	[3.64, 3.77]	[2.93, 2.97]	[3.05, 3.60]	[8.49, 9.25]		

Parents/guardians were surveyed about bottle-feeding during their children first six months. The majority, (80.0%), reported bottle-feeding, compared to 20% who did not bottle-feed their children. Bottle-feeding was found to be a significant predictor of DM for children aged birth to 1 year (p = .022), as shown in <u>Appendix A</u>. In this age group, children who were bottle-fed achieved higher DM scores (M = 2.50, 95% CI [2.41, 2.60]) than those who were not bottle-fed (M = 2.10, 95% CI [1.88, 2.32]) (see <u>Table 22</u>).

#### Table 22: Child bottle-fed status

Mean values and 95% CIs for child bottle-fed status and dependent variable

	Developmental	Developmental	Communication	Communication	Communication	Communication
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)
No	2.10	5.28	3.72	2.97	3.57	9.00
	[1.88, 2.32]	[5.12, 5.44]	[3.59, 3.85]	[2.95, 2.99]	[3.28, 3.86]	[8.72, 9.29]
Yes	2.50	5.11	3.70	2.93	3.26	8.72
	[2.41, 2.60]	[4.96, 5.26]	[3.65, 3.75]	[2.91, 2.95]	[2.96, 3.57]	[8.45, 9.00]

# **Prenatal Support Services**

To assess access to prenatal support services, parents/guardians who were mothers of First Nations children were asked if they received prenatal care or support from various services providers such as Traditional Knowledge Holders, Elders, family members, a doctor or family physician, or an obstetrician. All mothers surveyed reported at least one source of support, thus no model outputs were generated. They also reported that they primarily relied on doctors or family physicians for their prenatal care, opposed to community health nurses, family members, obstetricians, or midwives (see Table 23).

Sources of Prenatal Care	Estimate	95% Confide	nce Interval				
		Lower	Upper				
Doctor/family physician	72.3%	67.7%	76.4%				
Community health nurse	49.8%	45.7%	53.9%				
Family members	24.7%	20.1%	30.0%				
Obstetrician	21.6%	18.4%	25.2%				
Elder	7.2% <sup>E</sup>	5.1% <sup>E</sup>	10.3% <sup>E</sup>				
Midwife	4.3% <sup>E</sup>	2.4% <sup>E</sup>	7.6% <sup>E</sup>				
Traditional Knowledge Holder	4.1% <sup>E</sup>	2.8% <sup>E</sup>	5.9% <sup>E</sup>				
Other	F	F	F				
Do not Know	F	F	F				
Refused	2.0% <sup>E</sup>	1.2% <sup>E</sup>	3.4% <sup>E</sup>				
Note: <sup>E</sup> High sampling variability, interpret with caution. F denotes data suppressed due to high sampling variability.							

## Table 23: Sources of prenatal care most used during pregnancy

Prenatal support was assessed based on the timing of the mother's first prenatal appointment. The majority of mothers (87.7%) reported that their initial appointment occurred at 13 weeks of pregnancy or earlier.

This timing was a significant predictor of DM for children aged birth to 1 year (p < .001) and CM for children aged 2–3 years (p < .001) as detailed in <u>Appendix A</u>. However, it did not significantly predict DM outcomes for children aged 2–5 years or CM for children aged 4–5 years, or for CA and CC. These findings should be interpreted with caution due to the suppressed data in some categories or high coefficients of variation.

The timing of prenatal care shows varying impacts on different developmental and communication outcomes, with some measures improving even with later prenatal care (see <u>Table 24</u>). These findings could suggest that any prenatal care, regardless of timing, contributes positively to certain child developmental outcomes. More stable data and further investigation into the high variability observed in some measures are necessary for a more definitive understanding.

#### Table 24: First prenatal appointment

	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
13 weeks	2.42	5.14	3.65	2.92	3.30	8.78		
or earlier	[2.30, 2.54]	[5.02, 5.25]	[3.59, 3.71]	[2.90, 2.94]	[3.08, 3.53]	[8.63, 8.93]		
14 to 27	2.45	5.19	3.75	2.94	4.11	8.74		
weeks	[2.15, 2.74]	[4.99, 5.40]	[3.64, 3.86]	[2.90, 2.98]	[3.50, 4.71]	[8.38, 9.11]		
28 weeks or later	F	5.78 [5.42, 6.14]	3.97 [3.90, 4.04]	3.00 [3.00, 3.00]	F	8.66 [7.59, 9.74]		

Mean values and 95% CIs for first prenatal appointment and dependent variable

Note: F denotes data suppressed due to high sampling variability.

## Nurturing Home Environment

The assessment of whether households provided a nurturing environment for children was based on the level of verbal praise and physical affection reported by parents/guardians. The vast majority of parents/guardians (over 95%) reported their home environment as nurturing.

This nurturing environment was found to be a significant predictor of children's scores for DM 0–1, p = .009; CM 2–3, p = .009; CM 4–5, p = .001; CC, p = .001. as detailed in Appendix A. First Nations children aged 4–5 years who lived in nurturing households achieved higher CM scores (M = 8.79, 95% CI [8.55, 9.02]) than those who did not (M = 6.59, 95% CI [5.29, 7.88]) (Table 25). Data should be interpreted with caution due to the low number of households classified as "generally not nurturing" (Table 25). The mixed directions of associations for different dependent variables also suggest that the results should be approached cautiously.

#### Table 25: Nurturing home environment

	Mean Values and 95% Cis for level of nurturing nome environment and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication	
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones	
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)	
Generally	F	5.56	3.73	3.00	F	6.59	
not		[5.10, 6.02]	[3.43, 4.03]	[3.00, 3.00]		[5.29, 7.88]	
nurturing							
Generally	2.46	5.15	3.70	2.94	3.34	8.79	
nurturing	[2.37, 2.55]	[5.03, 5.26]	[3.65, 3.75]	[2.92, 2.95]	[3.09, 3.59]	[8.55, 9.02]	

Note: F denotes data suppressed due to high sampling variability.
## **Quality of Learning Within the Home**

The quality of home learning environments was assessed using an index that measured the presence of nine conditions: 1) child friendly conversation; 2) play space indoors; 3) play space outdoors; 4) constant adult supervision; 5) safe environment; 6) age-appropriate learning materials (i.e., toys); 7) age-appropriate learning materials (i.e., books); 8) healthy nutrition; and 9) encouragement of healthy behaviours. Households were classified based on the availability of these resources into three categories: "none or some" (0–5 conditions), "most" (6–8 conditions), and "all" (9 conditions). Overall, half of parents/guardians (50.2%) reported having "all" or "most" (28.1%) of these conditions for quality home learning environments, while 21.7% reported having "none or some."

This index, measuring the quality of home learning environments, was a significant predictor for nearly all assessed developmental and communications outcomes, with the exception of DM for children aged birth to 1 year. Increases in the presence of available conditions significantly correlated with higher scores across several dependent variables (DM 2–5, p < .001; CM 2–3, p = .001; CM 4–5, p = .001; CA, p = .008; CC, p = .013) as detailed in Appendix A. Generally, higher scores on these variables were associated with higher scores on the Quality of Learning in the Home Environment index (see Table 26).

#### Table 26: Quality of learning in home environment

	variable					
	Developmental	Developmental	Communication	Communication	Communication	Communication
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)
None or	2.32	4.98	3.64	2.89	2.70	8.27
some (0–5)	[2.12, 2.51]	[4.71, 5.25]	[3.51, 3.77]	[2.84, 2.95]	[2.18, 3.22]	[8.01, 8.52]
Most (6–8)	2.43	5.02	3.60	2.92	3.03	8.72
	[2.27, 2.60]	[4.84, 5.20]	[3.51, 3.70]	[2.89, 2.96]	[2.72, 3.34]	[8.49, 8.95]
All (9)	2.53	5.28	3.77	2.96	3.67	9.04
	[2.41, 2.64]	[5.13, 5.43]	[3.73, 3.82]	[2.95, 2.97]	[3.30, 4.04]	[8.66, 9.41]

Mean values and 95% CIs for each level of quality of learning in home environment and dependent variable

## **Child Home Learning Experiences**

An index was developed to measure the variety of learning experiences of First Nations children within their home environment. This index was based on responses from parents/guardians to seven survey questions about their, or another family member's,

engagement frequency in various educational activities with their children. These activities included 1) singing songs and rhyming; 2) naming letters and numbers; 3) counting; 4) providing opportunities for children to engage in solo activities; 5) problem solving; 6) hands-on learning; and 7) sports and hobbies. Parent/guardian responses to individual questions were aggregated into a seven-point scale and categorized into three levels: "none or few activities done daily" (0-2 activities), "some activities done daily" (3–5 activities), and "all or most done daily" (6–7 activities).

This index, measuring child home learning experiences, was a significant predictor of children's achievements for all assessed developmental and communication outcomes (DM 0–1, p = .036; DM 2–5, p < .001; CM 2–3, p < .001; CM 4–5, p < .001; CA, p < .001; CC, p = .009) as detailed in <u>Appendix A</u>. Higher scores across all dependent variables were consistently associated with more frequent learning activities (see Table <u>27</u>).

#### Table 27: Child home learning experiences

	Mean values and 95% CIs for each level of Child Home Learning Experiences								
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)			
None or	2.27	4.58	3.24	2.81	2.73	7.99			
few	[2.15, 2.39]	[4.31, 4.86]	[3.09, 3.39]	[2.75, 2.87]	[2.08, 3.39]	[7.59, 8.38]			
activities									
(0–2)									
Some	2.71	5.04	3.76	2.97	3.06	8.46			
activities	[2.56, 2.86]	[4.85, 5.23]	[3.69, 3.83]	[2.95, 2.99]	[2.74, 3.39]	[8.02, 8.90]			
done									
daily (3–									
5)									
All or	F	5.56	3.97	2.99	3.97	9.34			
most		[5.50, 5.63]	[3.96, 3.99]	[2.99, 3.00]	[3.72, 4.23]	[9.22, 9.47]			
done									
daily (9)									

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Note: F denotes data suppressed due to high sampling variability.

#### Language, Traditional Teachings, Culture, and Spirituality

The FNREEES data revealed that most parents/guardians surveyed (62.8%) reported that that their children generally lacked exposure to First Nations languages within their community, while 37.2% indicated that their children did have such exposure.

Interestingly, children's exposure to First Nations languages (e.g., listening to or engaging in conversations) was not found to be a significant predictor for most developmental and communications outcomes. However, it notably influenced CA for children aged birth to 5 years (p = .010) (Appendix A). Children who were exposed to First Nations languages had significantly higher CA scores (M = 3.73, 95% CI [3.64, 3.82]) than those were not exposed (M = 3.68, 95% CI [3.63, 3.74]) (see Table 28).

#### Table 28: Exposure to First Nations language in community

	wear values and 25% eis for each level of or exposure to first rations language in community and							
	dependent varia	ble						
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)		
Generally	2.48	5.13	3.68	2.93	3.36	8.86		
not	[2.36, 2.60]	[4.97, 5.28]	[3.63, 3.74]	[2.91, 2.95]	[3.01, 3.70]	[8.69, 9.04]		
exposed to								
First								
Nations								
language								
Generally	2.45	5.14	3.73	2.95	3.25	8.55		
exposed to	[2.29, 2.60]	[4.96, 5.33]	[3.64, 3.82]	[2.92, 2.97]	[3.02, 3.49]	[8.04, 9.06]		
First								
Nations								
language								

Maan values and 05% (Is for each level of of exposure to First Nations language in community and

Over half of parents/guardians (57.6%) reported the significance of their children learning about the Traditional Teaching of their culture (e.g., beliefs, values, medicines, practices, ceremonies, stories, songs, and activities), marking it as "very important." Additionally, 25.8% indicated the learning as "somewhat important," 9.6% as "a little important," while a small proportion 7.0%<sup>E</sup> considered it "not important," with the <sup>E</sup> denoting high sampling variability and interpret with caution. The importance of children learning Traditional Teachings was not a significant predictor for any dependent variables (see <u>Appendix A</u> and <u>Table 29</u>).

#### **Table 29: Importance of Traditional Teachings**

Mean values and 95% Cls each level of importance of Traditional Teachings and dependent variable									
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)			
Somewhat important to not important	2.47 [2.31, 2.63]	5.00 [4.80, 5.21]	3.72 [3.66, 3.78]	2.94 [2.92, 2.96]	3.10 [2.71, 3.48]	8.58 [8.38, 8.78]			

Very important	2.45	5.25	3.69	2.93	3.60	8.91
	[2.33, 2.57]	[5.11, 5.39]	[3.62, 3.75]	[2.91, 2.96]	[3.32, 3.88]	[8.54, 9.28]

Nearly half of parents/guardians (49.8%) reported that their children's learning about traditional spirituality was "very important," with 30.1% indicating it was "somewhat important," while 11.5% reported that it was "a little important" and 8.6% as "not important." The importance that parents/guardians placed on children learning about traditional spirituality statistically predicted DM for children aged 2–5 years (p = 0.008) and CM for children aged 2–3 years (p = 0.022), as shown in <u>Appendix A</u>.

Children from households that prioritized learning about traditional spirituality as "very important" demonstrated higher scores in both DM and CM compared to those from households considering it a as "a little important" to "not important." However, while mean scores for DM (ages 2–5 years) and CM (ages 2–3 years) were higher from households that identified learning traditional spirituality as "a little important" or "not important" than those who said "somewhat important," there was overlap in their respective confidence intervals (see Table 30). CA and CC scores showed comparable levels between households prioritizing traditional spirituality as "very important" and those considering it "a little important" or "not important" (see Table 30).

	Mean values and 95% Cls for each level of importance of traditional spirituality and dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
A little or not	2.33	5.02	3.68	2.93	3.18	8.57		
important	[2.06, 2.59]	[4.86, 5.19]	[3.59, 3.77]	[2.90, 2.96]	[2.92, 3.44]	[8.27, 8.86]		
Somewhat	2.56	4.95	3.77	2.97	2.95	8.90		
important	[2.39, 2.73]	[4.70, 5.21]	[3.71, 3.83]	[2.95, 2.98]	[2.46, 3.44]	[8.70, 9.09]		
Very important	2.47	5.31	3.67	2.92	3.71	8.94		
	[2.34, 2.60]	[5.19, 5.42]	[3.60, 3.74]	[2.89, 2.95]	[3.38, 4.03]	[8.75, 9.14]		

#### Table 30: Importance of traditional spirituality

Nearly one-third (30.7%) of parents/guardians reported their children participating in or attending cultural activities (e.g., drumming, singing, storytelling, powwows, traditional dancing, hunting, gathering, beading, ceremonies) at least once per month, while 69.3% indicated less frequent participation.

The frequency of First Nations children's participation or attendance in cultural activities significantly predicted all developmental and communication dependent variables (DM 0–1, p < .001; DM 2–5, p < .001); CM 2–3, p < .001; CM 4–5, p < .001; CA, p < .001; p. 40

CC, p < .001), as shown in <u>Appendix A</u>. First Nations children who attended a cultural event at least once per month had significantly higher CA (M = 3.90, 95% CI [3.86, 3.94]) and CC (M = 2.99, 95% CI [2.99, 3.00]) scores compared to the CA (M = 3.59, 95% CI [3.51, 3.66]) and CC (M = 2.91, 95% CI [2.88, 2.93]) of those who did not, as shown in <u>Table 31</u>. The same pattern held for DM and CM scores across the different age groups (see <u>Table 31</u>).

#### Table 31: Participation in cultural activities

	Mean values and 95% Cls for level of participation in cultural activities and dependent variable						
	Developmental MilestonesDevelopmental MilestonesCommunication AbilitiesCommunication ComprehensionCommunication MilestonesCommunication MilestonesCommunication Milestones(birth to 1 yr)(2–5 yrs)(birth to 5 yrs)(birth to 5 yrs)(birth to 5 yrs)(2–3 yrs)(4–5 yrs)						
Less than once per month to never	2.41 [2.31, 2.51]	4.97 [4.82, 5.12]	3.59 [3.51, 3.66]	2.91 [2.88, 2.93]	3.07 [2.75, 3.39]	8.50 [8.17, 8.82]	
At least once per month	2.67 [2.52, 2.82]	5.47 [5.37, 5.58]	3.90 [3.86, 3.94]	2.99 [2.99, 3.00]	4.02 [3.81, 4.23]	9.18 [9.01, 9.36]	

## Discussion

Children's educational journeys typically begin at home within the familial setting, where the significance of the home environment is underscored in shaping the development and well-being of First Nations children. Within First Nations families, the pivotal role of extended families and communities in nurturing and enriching children's learning and overall development is highlighted (Eni & Rowe, 2011). The data presented accentuate the relevance of First Nations' perspectives on familial structures. Notably, while certain conventional variables used in Western family surveys on family composition, such as child living arrangements and parental marital status, exhibit significance, they do not necessarily reflect the realities in First Nations communities. Similar observations have been noted in research involving other Indigenous communities, particularly in large-scale surveys, where conventional family composition variables may not fully capture Indigenous conceptions of family structures (Anderson et al, 2006; Trevethan, 2019).

Regarding breastfeeding outcomes, it is important to contextualize the mixed direction of the results within the broader landscape of research portraying breastfeeding as protective for many aspects of children's health and development (Grummer-Strawn & Rollins, 2015). Despite extensive research linking breastfeeding to positive early childhood development outcomes, not all studies report significant associations between breastfeeding and specific developmental milestones (Michels et al., 2017). Further inquiry into cultural perspectives on breastfeeding and the facilitation of prevention and early intervention support through breastfeeding promotion in First Nations communities could offer valuable insights into interpretating this study's findings.

Indigenous scholars and researchers have recognized the substantial networks of support that love, nurture and care for children within many First Nations communities. The findings of this technical study revealed elevated levels of nurturing within First Nations families, alongside quality home learning environments and children's participation in diverse learning experiences, underscoring the multifaceted ways in which First Nations families and communities cultivate supportive environments for their children. Moreover, the data suggest that access to available supports and resources is pivotal for First Nations parents/guardians in facilitating their children's development.

Language and culture emerge as foundational to children's individual, social and cultural identities, with an emphasis on the importance of traditional spirituality learning correlating with children's attainment of developmental and communication milestones.

Additionally, increased participation in cultural activities corresponds with higher developmental and communication milestone scores, highlighting the important role of language and culture in children's wholistic development within the unique contexts of First Nations cultures and traditions. These findings reinforce the cumulative knowledge and wisdom that is cultivated and shared by First Nations scholars, researchers, leaders and Knowledge Holders about the importance of collaborative efforts to ensure that First Nations children can thrive within nurturing home environments enriched by their distinct First Nations cultural heritage and traditions.

# 4. CAREGIVING ENVIRONMENTS AND CHILDREN'S DEVELOPMENT AND WELL-BEING

## **Overview**

This section explores First Nations children's experiences in caregiving environments outside home environments (e.g., child care programs) and how these experiences

influence children's development and well-being. The independent variables examined in this section include:

- occurrence of regular child care;
- formality of child care arrangement;
- license status of main child care arrangement;
- location of child care arrangement;
- quality of child care arrangement;
- First Nations caregivers at child care;
- child interaction with First Nations care giver;
- attendance of First Nations early childhood program; and,
- First Nations language exposure and Traditional Teachings at child care.

<u>Table 32</u>, which draws on data outputs in <u>Appendix A</u>, provides an overview of the "caregiving environments" independent variables that were explored in relation to the six developmental and communication milestone scores presented as dependent variables in <u>Table 2</u>.

# Table 32: Description and statistical significance of caregiving environmentindependent variables

Variable Name	Description	Type of Variable (nominal, ordinal, continuous)	DM (birth to 1 yr)	DM (2–5 yrs)	CA (birth to 5 yrs)	CC (birth to 5 yrs)	CM (2–3 yrs)	CM (4–5 yrs)
Occurrence of Regular Child care	Whether child is receiving any regular child care	Nominal, 2 levels <ul> <li>Yes</li> <li>No</li> </ul>	РРР	P	-	РРР	РРР	-
Formality of Child care Arrangement	Whether child care is informal or formal	Nominal, 2 levels <ul> <li>Yes</li> <li>No</li> </ul>	РРР	-	-	PP	-	РРР
License Status of Child care	Whether main child care arrangement is a licensed operation	Nominal, 2 Levels <ul> <li>Yes</li> <li>No</li> </ul>	-	РР	-	-	РРР	-
<i>Location of Child care</i>	Whether main type of child care was in a First Nations community/on- reserve	Nominal, 2 levels <ul> <li>Yes</li> <li>No</li> </ul>	-	-	-	-	-	Р

Quality of Child care First Nations	Index of child care quality, pooled from 13 child care environment factors Whether there are	Ordinal, 3 Levels <ul> <li>Some features</li> <li>Most features</li> <li>All features</li> </ul> Nominal, 2 Levels	-	-	- P	P -	-	PPP -
Caregivers at any First Nations Child care caregivers at main child care arrangement		<ul><li>Yes</li><li>No</li></ul>						
Child Interaction with First Nations Caregiver	Whether child interacts with a First Nations caregiver	Nominal, 2 Levels <ul> <li>Yes</li> <li>No</li> </ul>	Ρ	-	РР	-	-	PP
First Nations Language Exposure at Child care	Frequency of child's exposure to First Nations language at main child care arrangement	<ul> <li>Ordinal, 4 levels</li> <li>None of the time</li> <li>Some of the time</li> <li>Most or all of the time</li> <li>Don't know/refused</li> </ul>	ΡΡΡ	-	-	-	ΡΡΡ	-
Traditional First Nations Teachings at Child care	Frequency of child's exposure to First Nations teachings at main child care arrangement	<ul> <li>Ordinal, 3 levels</li> <li>Never or less than once per month</li> <li>Once per month or more</li> <li>Don't know/refused</li> </ul>	-	Р	PPP	РРР	Р	-
Attendance at First Nations Early Childhood Program	Whether child attended Head Start or another First Nations early childhood program	Nominal, 2 Levels <ul> <li>Yes</li> <li>No</li> </ul>	Ρ	Ρ	-	Р	РРР	-

Note:  $P = p \le .05$ ;  $PP = p \le .01$ ;  $PPP = p \le .001$ 

#### Child care Arrangements

Four independent variables related to child care arrangements were analyzed including: 1) whether children received regular child care; 2) whether child care was provided through a formal program; 3) whether child care was provided through a licensed program; and 4) whether child care took place on-reserve or within a First Nations community. All variables were binary.

Overall, 28.5% of parents/guardians reported that their children received regular child care, while 71.5% did not. Additional questions regarding the characteristics of the child care environment were exclusively directed to parents/guardians whose children received regular child care. Of the four independent variables examined, the presence or absence of regular child care had the most significant impact in this analysis.

Regular child care arrangements were a significant predictor of DM for children aged birth to 1 year (p < .001) and 2–5 years (p = .018), as well as of CC (p < .001) and CM for children aged 2–3 years (p < .001), as shown in <u>Appendix A</u>.

Children of both ages (birth to 1 year and 2–5 years) who attended regular child care had significantly higher DM scores (M = 2.83, 95% CI [2.73, 2.93] and M = 5.26, 95% CI [5.08, 5.43]), compared to those who did not (M = 2.33, 95% CI [2.21, 2.44] and M = 5.09, 95% CI [4.95, 5.24]) respectively (see Table 33). This trend extended to CM scores for children aged 2–3 years and CC scores for children aged birth to 5 years, respectively (see Table 33). However, regular child care arrangements did not predict CA for children aged birth to 5 years or CM scores for children aged 4–5 years (see Table 33).

	Mean values and 95% Cls for each level of regular child care and dependent variable									
	Developmental	Communication	Communication							
	Milestones	Milestones	Milestones							
	(birth to 1 yr)	(2–3 yrs)	(4–5 yrs)							
No	2.33	5.09	3.67	2.92	3.10	8.85				
	[2.21, 2.44]	[4.95, 5.24]	[3.60, 3.73]	[2.89, 2.94]	[2.78, 3.42]	[8.69, 9.01]				
Yes	2.83	5.26	3.78	2.97	3.92	8.62				
	[2.73, 2.93]	[5.08, 5.43]	[3.72, 3.84]	[2.96, 2.99]	[3.71, 4.13]	[8.04, 9.20]				

#### Table 33: Occurrence of regular child care

More than half of parents/guardians whose children were in child care (52.9%) reported that the primary child care arrangements were formal (e.g., in a daycare centre), while 47.1% indicated informal child care arrangements (e.g., care in a relative's home).

The formality of child care significantly predicted DM for children aged birth to 1 year (p = < .001) (see <u>Appendix A</u>). However, caution is advised due to the small size of the formal group. Whether child care arrangements were formal or informal also emerged as a significant predictor of CC for children aged birth to 5 years (p = .002) and CM for children aged 4–5 years (p < .001) (<u>Appendix A</u>). In both cases, children with formal child care arrangements had higher CC scores (0-5, M = 3.00, 95% CI [3.00, 3.00])

and CM scores (4–5, M = 9.54, 95% CI [9.32, 9.77]) compared to those who had informal child care (0–5, M = 2.96, 95% CI [2.94, 2.98]) and (0–5, M = 3.00, 95% CI [3.00, 3.00]) respectively (see Table 34). Notably, for CC, the difference in mean scores between formal and informal child care groups was minimal and the standard error of the mean was zero for children in formal child care arrangements (see Table 34).

#### Table 34: Formality of child care arrangement

	Mean values and 95% Cls for each level of formality of child care arrangement and dependent variable							
Developmental MilestonesDevelopmental MilestonesCommunication AbilitiesCommunication ComprehensionCommunication MilestonesCom(birth to 1 yr)(2–5 yrs)(birth to 5 yrs)(birth to 5 yrs)(birth to 5 yrs)(2–3 yrs)(4–1)								
Informal	2.98 [2.98, 2.98]	5.49 [5.29, 5.70]	3.76 [3.69, 3.82]	2.96 [2.94, 2.98]	4.00 [2.95, 5.04]	8.21 [7.82, 8.60]		
Formal	F	5.44 [5.25, 5.62]	3.82 [3.74, 3.89]	3.00 [3.00, 3.00]	3.89 [3.64, 4.15]	9.54 [9.32, 9.77]		

Note: F denotes data suppressed due to high sampling variability.

Among parents/guardians who reported that their children were in child care, 69.6% indicated their children's primary child care arrangements were licensed establishments, while 30.4% were alternate child care arrangements.

The licensing status of child care arrangements was a significant predictor of DM for children aged 2–5 years (p = .004) and CM for children aged 2–3 years (p < .001), as shown in Appendix A. Children's participation in licensed child care arrangements was associated with higher scores for DM for children aged 2-5 years (M = 5.38, 95% CI [5.27, 5.48]) and CM for children aged 2–3 years (M = 4.04, 95% CI [3.86, 4.21]) compared to DM (M = 5.16, 95% CI [4.82, 5.50]) and CM (M = 3.43, 95% CI [3.18, 3.69]) in unlicensed arrangements, respectively (see Table 35).

#### Table 35: License Status of Child care

	Mean values and 95% Cls for each level of license status of child care and dependent variable									
	Developmental	Developmental	Communication	Communication	Communication	Communication				
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones				
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)				
No	2.70	5.16	3.72	2.98	3.43	8.99				
	[2.48, 2.93]	[4.82, 5.50]	[3.57, 3.87]	[2.97, 2.99]	[3.18, 3.69]	[8.73, 9.24]				
Yes	2.85	5.38	3.80	2.97	4.04	9.17				
	[2.75, 2.95]	[5.27, 5.48]	[3.75, 3.85]	[2.96, 2.99]	[3.86, 4.21]	[8.95, 9.39]				

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The analysis also delved into the influence of child care location. A vast majority of parents/guardians with children in child care (90.7%) indicated that their children's primary child care arrangements were on-reserve or in a First Nations community, while only 9.3% reported arrangements that were not associated with a First Nations community.

Whether main child care arrangements were on-reserve or in a First Nations community was a significant predictor of CM for children aged 4–5 years (p = .013) (see <u>Appendix</u> <u>A</u>). However, location was not a predictor of any other dependent variable. Children aged 4-5 years who attended child care on-reserve or in a First Nations community had significantly higher CM scores (M = 8.68, 95% CI [8.13, 9.23]) than those who attended child care elsewhere (M = 8.04, 95% CI [7.52, 8.56]) (see Table 36).

#### Table 36: Location of child care

	Mean values and 95% Cls for each location of child care and dependent variable								
	Developmental Developmental Communication Communication Communication								
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones			
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)			
No	2.95	5.34	3.60	2.96	4.05	8.04			
_	[2.93, 2.96]	[4.97, 5.70]	[3.35, 3.86]	[2.88, 3.03]	[3.85, 4.25]	[7.52, 8.56]			
Yes	2.80	5.25	3.80	2.98	3.91	8.68			
	[2.71, 2.90]	[5.08, 5.43]	[3.74, 3.86]	[2.97, 2.99]	[3.74, 4.07]	[8.13, 9.23]			

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## **Quality of Child care**

An index was developed to measure the quality of child care, describing various aspects such as resources, physical space, and learning opportunities provided in their children's child care settings to measure the variety of learning experiences of First Nations children within child care environments.

The quality of child care was assessed using an index that measured the presence of 13 conditions: 1) child friendly conversation; 2) provider has specialized training in early childhood education; 3) cleanliness of the physical setting; 4) sufficient indoor play area; 5) sufficient outdoor play area; 6) age-appropriate program materials and equipment; 7) age-appropriate planned activities; 8) constant adult supervision; 9) ability to reach a parent/caregiver in an emergency; 10) follows sanitary procedures (i.e., hand washing); 11) healthy nutrition; 12) provision for sick children; and 13) presence of natural light (i.e., windows). Parent/guardian responses to individual questions were aggregated into a three-point scale, where child care was categorized as having "all features," "most features," or "some features." Notably, 40.1% of child care arrangements had "all features," while 29.9% had "most features," and 30.0% had

"some features." In terms of satisfaction, 41.3% of parents/guardians were satisfied with their children's primary child care arrangement, with an additional 56.5% indicating they were very satisfied.

While child care quality was not a significant predictor of DM, it was of CM for children aged 4–5 years (p < 0.005) and of CC for children aged birth to 5 years (p = 0.04) (see <u>Appendix A</u>).

Children aged 4–5 years who attended child care with "most features" of quality had significantly highest CM scores (M = 9.41, 95% CI [9.17, 9.65]) than those in child care with "some features" of quality (M = 8.58, 95% CI [8.27, 8.89]) (see <u>Table 37</u>). These findings should be approached with caution due to reliance on parents'/guardians' reports for the "quality of child care" variable, rather than child care direct assessments from child care providers. As such, the extent to which parents/guardians are knowledgeable about the specific features associated with quality child care arrangements is uncertain.

#### Table 37: Quality of child care

	Mean values and 95% CIs for each level of quality of child care and dependent variable								
	Developmental	Developmental	ental Communication Communication Communication						
	Milestones	Milestones	Abilities Comprehension Milestones Milestones						
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs) (birth to 5 yrs) (2–3 yrs) (4–5 yrs)						
Some	2.82	5.22	3.79	2.99	4.05	8.58			
features	[2.62, 3.02]	[4.87, 5.56]	[3.66, 3.91]	[2.98, 2.99]	[3.81, 4.30]	[8.27, 8.89]			
Most	2.84	5.30	3.76	2.97	3.89	9.41			
features	[2.75, 2.93]	[5.13, 5.48]	[3.67, 3.86]	[2.95, 2.99]	[3.67, 4.10]	[9.17, 9.65]			
All	2.79	5.30	3.76	2.96	3.88	8.86			
features	[2.63, 2.95]	[5.14, 5.47]	[3.68, 3.84]	[2.94, 2.99]	[3.57, 4.19]	[8.54, 9.19]			

#### First Nations-Specific Child care

A vast majority of parents/guardians of children attending child care (91.0%) indicated the presence of First Nations caregivers in their children's primary child care setting, while only 9.0% reported none.

Based on responses from parents/guardians, five independent variables were analyzed to determine whether the child care settings were culturally based, sensitive, and relevant. They include: 1) whether there were any First Nations caregivers at their main child care provider; 2) whether their children interacted with a First Nations caregiver; 3) whether their children attended any First Nations early childhood programs (i.e.,

Head Start); 4) the frequency of their children's exposure to First Nations languages; and 5) First Nations teachings in their child care.

Although the presence of First Nations caregivers within children's primary child care arrangement did not predict most developmental and communication milestones, it was associated with CA for children aged birth to 5 years (p = .024) (see <u>Appendix A</u>). Children with a First Nations caregiver in their primary child care arrangement had significantly higher CA scores (M = 3.81, 95% CI [3.76, 3.86]) than those who did not (M = 3.49, 95% CI [3.15, 3.82]) (see <u>Table 38</u>).

	Mean values and 95% Cls for presence of First Nations caregivers at child care and each dependent variable							
	Developmental	Developmental	Communication	Communication	Communication	Communication		
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones		
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)		
No	2.78	5.36	3.49	2.94	3.96	8.55		
	[2.76, 2.81]	[5.09, 5.62]	[3.15, 3.82]	[2.86, 3.03]	[3.64, 4.29]	[7.92, 9.19]		
Yes	2.81	5.32	3.81	2.98	3.90	8.63		
	[2.71, 2.91]	[5.21, 5.43]	[3.76, 3.86]	[2.97, 2.99]	[3.73, 4.06]	[8.03, 9.24]		

#### Table 38: First Nations caregivers at child care

Almost all parents/guardians of children attending child care (97.0%) reported that their children had interactions with a First Nations caregiver, while only 3.0% indicated no such interactions. Child interaction with a First Nations caregiver in their child care was a significant predictor of CM scores for children aged 4–5 years (p = .006) (see <u>Appendix A</u>). Children aged 4–5 years who interacted with a First Nations caregiver at child care had significantly higher CM scores (M = 8.69, 95% CI [8.06, 9.33]) than those who did not (M = 6.72, 95% CI [5.70, 7.73]) (see <u>Table 39</u>).

Interactions with a First Nations caregiver at child care was also predictive of children's CA (p = .007), however, it was observed that children who had these interactions surprisingly scored lower in CA compared to those who did not have such interactions (see <u>Appendix A</u> and <u>Table 39</u>). Caution is advised when interpreting these findings due to the relatively low number of households where children did not interact with First Nations caregivers.

	Mean values and 95% CIs for each level of Child Interaction with First Nations Caregiver and dependent variable						
	Developmental	Developmental	Communication	Communication	Communication	Communication	
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones	
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)	
No	F	5.68	3.99	3.00	4.16	6.72	
		[5.40, 5.95]	[3.97, 4.01]	[3.00, 3.00]	[3.55, 4.78]	[5.70, 7.73]	
Yes	2.80	5.35	3.81	2.98	3.94	8.69	
	[2.69, 2.91]	[5.24, 5.45]	[3.75, 3.86]	[2.97, 2.99]	[3.78, 4.10]	[8.06, 9.33]	

#### Table 39: Child interaction with First Nations caregiver

Note: F denotes data suppressed due to high sampling variability.

The study evaluated the frequency of children's exposure to First Nations languages at child care. Among parents/guardians of children attending child care, 49.5% indicated that their children were exposed to First Nations languages "some of the time," while 21.6% reported exposure "most or all of the time." Conversely, 16.7% of parents/guardians reported that their children were not exposed to First Nations languages at child care, while 12.3% answered "don't know/refused" (see Table 40).

Notably, the frequency of exposure to First Nations languages at child care was significantly correlated with DM for children aged birth to 1 year (p < .001) and CM for children aged 2–3 years (p < .001), but for no other dependent variables (see <u>Appendix</u> <u>A</u>). In both cases, the confidence intervals of the mean scores indicated that significance was likely not due to language exposure. Rather, parents/guardians who responded "don't know/refused" tended to report relatively high developmental scores compared to other groups (see <u>Table 40</u>).

#### Table 40: First Nations language exposure at child care

Mean values and 95% Cls for each level of First Nations language exposure at child care and dependent variable

	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)
None of	2.81	5.28	3.64	2.94	3.65	9.03
the time	[2.74, 2.87]	[5.00, 5.56]	[3.48, 3.80]	[2.88, 2.99]	[3.26, 4.03]	[8.71, 9.35]
Some of	2.83	5.33	3.80	2.98	3.93	8.80
the time	[2.67, 2.98]	[5.21, 5.46]	[3.72, 3.88]	[2.96, 2.99]	[3.72, 4.15]	[8.57, 9.02]
Most or	2.80	5.15	3.80	2.98	3.82	9.02
all of the	[2.72, 2.87]	[4.71, 5.59]	[3.65, 3.94]	[2.97, 3.00]	[3.57, 4.07]	[8.74, 9.31]
time						
Don't	2.97	5.14	3.87	2.99	4.53	6.64 <sup>E</sup>
know/	[2.96, 2.97]	[4.66, 5.62]	[3.75, 3.98]	[2.99, 3.00]	[4.28, 4.78]	[3.63, 9.65]
reiusea						

**Note:** <sup>E</sup> High sampling variability, interpret with caution.

In assessing the frequency of children's exposure to Traditional Teachings at child care facilities, the data showed that the majority of parents/guardians of children attending child care (58.6%) reported their children being exposed "once per month or more," while 23.7% indicated "never or less than once per month." In addition, 17.7% of parents/guardians responded "don't know/refused" about their children's exposure to Traditional Teachings at child care.

The frequency of children's exposure to traditional First Nations teachings was a significant predictor of all dependent variables (DM 2–5, p = .013; CM 2–3, p = .029; CA, p = .001; CC, p = .001), except for DM for children aged birth to 1 year and CM for children aged 4–5 years (see <u>Appendix A</u>). Specifically, children who were exposed to First Nations teachings "once per month or more" achieved higher scores for DM (2– 5, M = 5.39 [5.15, 5.63]); CM (2–3, M = 4.13, 95% CI [3.99, 4.27]); CA (0–5, M = 3.92, 95% CI [3.90, 3.95]; and CC (0–5, M = 3.00, 95% CI [2.99, 3.00]) than children who had less exposure (see <u>Table 41</u>).

	Mean values and 95% Cls for each level of First Nations teachings at child care and dependent variable								
	Developmental Milestones (birth to 1 yr)	Developmental Milestones (2–5 yrs)	Communication Abilities (birth to 5 yrs)	Communication Comprehension (birth to 5 yrs)	Communication Milestones (2–3 yrs)	Communication Milestones (4–5 yrs)			
Never or	2.84	4.93	3.49	2.95	3.48	8.65			
less than	[2.70, 2.97]	[4.72, 5.15]	[3.31, 3.67]	[2.91, 2.98]	[3.10, 3.85]	[8.25, 9.06]			
once per									
month									
Once per	2.84	5.39	3.92	3.00	4.13	8.57			
month or	[2.78, 2.90]	[5.15, 5.63]	[3.90, 3.95]	[2.99, 3.00]	[3.99, 4.27]	[7.85, 9.30]			
more									
Don't	2.80	5.17	3.70	2.94	3.68	8.87			
know/	[2.62, 2.98]	[4.87, 5.47]	[3.57, 3.84]	[2.90, 2.98]	[3.22, 4.13]	[8.30, 9.43]			
refused									

#### Table 41: Traditional First Nations teachings at child care

Finally, parents/guardians were surveyed on their children's participation in early childhood programs tailored specifically for First Nations children, such as Head Start or similar initiatives. Among the responses, 40.6% of parents/guardians indicated their children's participation in early childhood programming with a "yes," while 59.4% responded "no."

Parent/guardian reports regarding their children's attendance at First Nations–specific child care was a statistically significant predictor of DM across all ages (0-1, p = .017;

2–5, p = .034), as well as CM (2–3, p < .001), and CC (0–5, p = .036) (see <u>Appendix A</u>). However, attendance at First Nations early childhood programs did not predict either CM for children aged 4–5 years or CA aged birth to 5 years. Notably, in statistically significant instances, children who attended in First Nations–specific early childhood programs exhibited higher scores on the dependent variables for DM 0–1 (M = 2.66, 95% CI [2.53, 2.78]); DM 2–5 (M = 5.49, 95% CI [5.41, 5.57]); CM 2–3 (M = 3.99, 95% CI [3.78,4.21]); and CC 0–5 (M = 2.99, 95% CI [2.98, 2.99]) compared to DM 0– 1 (M = 2.39, 95% CI [2.29, 2.49]); DM 2–5 (M = 4.84, 95% CI [4.65, 5.03]); CM 2–3 (M = 2.99, 95% CI [2.64, 3.35]); and CC 0–5 (M = 2.90, 95% CI [2.87, 2.93]) for those who did not attend, as detailed in <u>Table 42</u>.

#### Table 42: Attendance at First Nations early childhood program

Mean values and 95% Cls for each status of attendance of First Nations early childhood program and dependent variable

	Developmental	Developmental	Communication	Communication	Communication	Communication
	Milestones	Milestones	Abilities	Comprehension	Milestones	Milestones
	(birth to 1 yr)	(2–5 yrs)	(birth to 5 yrs)	(birth to 5 yrs)	(2–3 yrs)	(4–5 yrs)
No	2.39	4.84	3.56	2.90	2.99	8.53
	[2.29, 2.49]	[4.65, 5.03]	[3.47, 3.65]	[2.87, 2.93]	[2.64, 3.35]	[8.05, 9.01]
Yes	2.66	5.49	3.90	2.99	3.99	8.92
	[2.53, 2.78]	[5.41, 5.57]	[3.87, 3.93]	[2.98, 2.99]	[3.78, 4.21]	[8.78, 9.07]

#### Discussion

Early childhood development and learning are significantly influenced by caregiving environments. The findings presented in this section emphasize the importance of these caregiving environments in shaping the development and well-being of First Nations children. Specifically, parent/guardian reports regarding their children's participation in regular child care, formal programming and licensed care providers were all significantly associated with the dependent variables, including developmental and communication milestones, communication abilities, and communication comprehension. These results underscore the need for high-quality child care programs and supports for young children in First Nations communities.

Previous research has linked First Nations–specific child care to positive outcomes in the development and well-being of First Nations children (Jamieson, 2014; Ball et al., 2013). For instance, Aboriginal Head Start programs prioritize early childhood learning through culturally appropriate activities that nurture children's spiritual, emotional, intellectual and physical growth and development. Key components of these programs

include Elder involvement, exposure to First Nations languages, cultural- and landbased activities, and the involvement of parents/guardians and extended family members as co-teachers in children's learning and development (Aboriginal Head Start Association of British Columbia, 2023).

The findings of this research affirm the importance of supporting First Nations communities in implementing initiatives that integrate First Nations cultures and approaches into their child care and early childhood development programs. For example, two variables related to the integration of First Nations cultures in child care were each linked to four out of the six dependent variables (development and communication achievements) examined in these analyses. Specifically, attendance at First Nations–specific child care and exposure to First Nations teachings in child care at least once a month were positively associated with higher scores in developmental and communication milestones, as well as communication abilities and comprehension. These findings suggest that First Nations–specific child care programs play a crucial role not only in providing a culturally safe and relevant environment for First Nations children to develop, learn and thrive, but also in supporting the well-being of children and family alike.

## 5. CONCLUSION

This report explores the social and environmental factors that influence the development and well-being of First Nations children, from birth to 5 years of age. It does so by measuring the relationships between various independent and dependent variables related to children's developmental and communication milestones. The report examines three categories of independent variables: social determinants of health, home environments and caregiving environments.

First, an analysis of relationships between social determinants of health and developmental and communication milestones reveal that Western-colonial social determinants of health significantly impact the health and well-being of First Nations children. Significant influences on children's development include the income, employment and education of parents/guardians. The data show that First Nations children with primary caregivers of higher income levels achieve more developmental milestones across all age groups and more communication milestones between the ages of 4–5 years. These findings serve as reminders of the continuing impacts of colonization and intergenerational trauma on the health and well-being of First Nations

children. It is well known that First Nations people and communities in Canada are structurally disadvantaged compared with non-Indigenous populations. Recognizing the social determinants of First Nations children's health is crucial, as is the ongoing effort to create effective systems that allow First Nations children to thrive from their early years onward.

Secondly, variable analyses of the relationships between children's home environments and their well-being reveal that Western measures of home surroundings are considered less significant by parents/guardians, especially compared to the influence of First Nations languages and cultures on the well-being of First Nations children. For example, Western indicators such as marital status have an inconsistent relationship with children's well-being. In contrast, indicators that focused on First Nations-specific factors have more significant influences on children's well-being. Parents/guardians who consider it to be very important for their children to learn about traditional spirituality also report that their children meet more developmental milestones at 2-5 years and more communication milestones at ages 2–3 years. Furthermore, children who participate more frequently in cultural activities demonstrate higher developmental and communication milestones scores across all age groups. These observations underscore the importance of cultural and spiritual connections as key components of healthy home environments for First Nations children. Additionally, the data describe how many First Nations parents/guardians are creating nurturing and stimulating home environments to support the mental, emotional and spiritual well-being of their children. Many parents/guardians frequently provide their children with praise and affection and engage in a wide variety of learning activities with their children. The evidence also shows that when parents/guardians engaged in diverse types of learning activities, and when children's home learning environments are higher quality, parents/guardians report that their children achieve more developmental and communication milestones.

Thirdly, the study of the relationship between caregiving environments and children's well-being found that access to high-quality child care and First Nations–specific child care significantly impacts the well-being of First Nations children. Regular child care attendance, child care with formal programming and child care from a licensed provider are all significantly related to children's well-being. Moreover, the analysis of children's attendance in First Nations–specific child care and exposure to First Nations teachings in child care confirms that the quality of early childhood care settings and the integration of First Nations cultures and traditions into child care experiences are crucial to the well-being of First Nations children. Despite these positive associations, only a

minority of parents/guardians reported that their children were attending child care at the time of the FNREEES. This highlights the need for more accessible and culturally relevant child care and early learning programs and opportunities within First Nations communities so that First Nations children and families can access to the learning experiences and support that these programs provide.

Overall, this study provides strong statistical evidence that First Nations children benefit from many well-known predictors of positive early childhood outcomes. The data also emphasize the importance of First Nations–specific experiences such as exposure to languages and cultures in the development of First Nations children. It is insufficient to simply apply Western standards to the growth and development of First Nations children; rather, First Nations children have specific needs that must be met to support their journey through early childhood and beyond, as part of strong and resilient First Nations communities.

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## APPENDIX A: MODEL WALD F STATISTIC AND P-VALUE FOR EACH MODEL AND PREDICTOR

Wald F and P-Value for	Each Model a	and Predicto	r						
Variable	Dev Milestones	Dev Milestones	Comm Abilities	Comm Comp	Comm Milestones	Comm Milestones			
	(Ages 0-	(Ages 2-	(Ages 0-	(Ages 0-	(Ages 2-3)	(Ages 4-5)			
	1)	5)	5)	5)					
Social Determinants	Social Determinants								
Household Income	7.15	2.75	1.55	0.88	1.14	16.21			
	p <	p =	p =	p =	p = .336	p < .001			
	.001	.045	.204	.451					
Parental Employment	2.09	2.58	0.07	0.73	3.57	6.66			
	p =	p =	p =	p =	p = .061	p = .011			
	.152	.111	.787	.393					
Parental Education	3.00	6.76	0.11	1.16	6.41	17.21			
	p =	p =	p =	p =	p = .002	p < .001			
	.056	.002	.892	.316					
Female Guardian	15.75	6.15	1.62	1.28	10.15	33.15			
Education	p <	p =	p =	p =	p < .001	p < .001			
	.001	.001	.188	.282					
Male Guardian	0.14	3.62	0.77	0.65	2.23	6.80			
Education	p =	p =	p =	p =	p = .088	p = .002			
	.872	.015	.512	.583					
Parental Sources of	0.05	2.49	0.62	0.26	0.99	21.62			
Support	p =	p =	p =	p =	p = .373	p < .001			
	.951	.086	.538	.768					
Food Security Index	1.06	0.12	0.98	2.17	3.55	1.77			
	p =	p =	p =	p =	p = .032	p = .174			
	.350	.883	.377	.118					

Nutrition	0.87	23.74	3.10	0.68	4.59	6.52
	p =	p <	p =	p =	p = .034	p = .012
	.353	.001	.081	.411		
Sleep Schedule	0.19	9.49	0.14	0.07	0.70	5.44
	p =	p =	p =	p =	p = .404	p = .021
	.663	.002	.710	.792		
Family Indian	3.83	0.27	1.81	1.65	5.86	2.33
<b>Residential School</b>	p =	p =	p =	p =	p = .004	p = .101
Attendance	.026	.765	.168	.196		
Family Separation	0.07	2.50	0.52	2.17	2.46	6.52
Experiences	p = .929	p = .086	p =	p =	p = .089	p = .002
			.598	.118		
Knowledge of FN	1.94	0.57	0.76	1.60	0.59	0.56
Language	p =	p =	p =	p =	p = .445	p = .458
	.170	.453	.386	.208		
Proficiency in	7.04	4.92	1.14	4.23	2.17	0.27
Speaking/	p =	p =	p =	p =	p = .120	p = .767
Understanding FN	.002	.009	.324	.016		
Language						
Home Environments						
Child Living with Birth	0.55	0.18	0.02	0.36	4.12	0.41
Parent	p =	p =	p =	p =	p = .044	p = .522
	.461	.675	.904	.552		
Marital Status of	23.94	2.11	1.79	0.41	3.55	4.17
Household	p <	p =	p =	p =	p = .005	p = .002
	.001	.067	.118	.844		
Crowding Index	4.90	1.58	1.96	4.67	0.13	8.10
	p =	p =	p =	p =	p = .722	p = .005
	.030	.211	.164	.032		
Child Breast-fed	2.95	0.93	6.16	10.05	0.01	1.78
Status	p =	p =	p =	p =	p = .912	p = .184
	.089	.0337	.014	.002	4.50	1.07
Child Bottle-fed	5.46	2.14	2.82	3.24	1.58	1.87
Status	p =	p =	p =	p =	p = .211	p = .174
	.022	.146	.095	.074		
Sources of Prenatal	-	-	-	-	-	-
Support	0.00	254	275	0.69	20.04	0.17
Appointment	0.02	2.30	2.75	0.08	28.94	0.10
Appointment	μ < 001	μ = 081	p =	p =	p < .001	p = .000
Nurturing Home	.001	.001	.008	.509	7.00	10.07
INUTURING NOME	7.11 n-	1.Uð	0.23 n -	10.01	7.00	12.27
chvironment	h =	200	μ = 619	p =	p = .009	p = .001
	.009	.500	.010	.001		

Quality of Learning in	2.88	9.50	4.98	4.48	7.06	8.00
Home Environment	p =	p <	p =	p =	p = .001	p = .001
	.062	.001	.008	.013		
Child Home Learning	4.53	43.40	11.43	4.82	14.44	26.57
Experiences	p = .036	p < .001	p <	p =	p < .001	p < .001
			.001	.009		
Exposure to First	0.40	0.34	6.73	2.22	0.80	1.32
Nations Language in	p =	p =	p =	p =	p = .373	p = .253
Community	.529	.561	.010	.139		
Importance of	0.23	3.47	0.20	0.88	3.42	2.69
Traditional Teachings	p =	p =	p =	p =	p = .067	p = .103
	0.630	.065	.653	.349		
Importance of	1.27	4.99	1.82	2.59	3.96	2.77
Traditional	p =	p =	p =	p =	p = .022	p = .067
Spirituality	.288	.008	.166	.078		
Participation in	15.19	20.41	28.51	27.38	30.33	14.85
Cultural Activities	p <	p <	p <	p <	p < .001	p < .001
	.001	.001	.001	.001		
Caregiving Environme	nts					
Occurrence of Regular	33.52	5.75	2.46	13.03	18.24	0.32
Child care	p <	p =	p =	p <	p < .001	p = .574
	.001	.018	.119	.001		
Formality of Child care	2980.86	1.18	0.03	10.46	0.01	25.16
Arrangement	p <	p =	p =	p =	p = .913	p < .001
	.001	.285	.864	.002		
License Status of Child	0.09	8.59	2.01	0.49	22.81	0.82
care	p =	p =	p =	p =	p < .001	p = .369
	.764	.004	.159	.485		
Location of Child care	3.05	0.70	1.78	0.12	2.04	6.39
	p =	p =	p =	p =	p = .157	p = .013
	.090	.403	.184	./35	0.07	11 (2
Quality of Child care	0.15	2.21	1.07	3.23	0.07	11.62
	μ = 861	p =	μ= 240	μ =	p = .930	p < .001
First Nations	.001	.114	. 340	.045	1.04	0.47
Carogivers at Child	0.22	0.15	5.20 n -	0.30	1.94	0.47
caregivers at Child	p = 643	μ = 723	μ= 024	p = 530	p = .109	p = .497
Child Interaction with	7 11	2 4 8	7.66	3 /0	0.83	<u>8</u> 1 <i>1</i>
EN Caregiver	7.11 n –	2.40 n –	7.00 n –	р. <del>-</del>	$n = \frac{365}{5}$	n = 0.06
The Calegiver	Ρ- 013	Ρ- 118	ρ – 007	Ρ- 064	р – .505	р – .000
First Nations	10 37	1 38	0.90	1 54	7 87	1 36
	n <	n =	n =	n =	n < 0.01	n = 260
Child care	.001	.254	۳ – 446	.209	P <.001	p = .200
	.001	.231		.207		

Traditional First	0.72	4.51	7.61	7.51	3.72	0.08
Nations Teachings at	p =	p =	p =	p =	p = .029	p = .921
Child care	.493	.013	.001	.001		
Attendance at First	5.93	4.58	1.11	4.47	23.63	2.32
Nations Childhood	p =	p =	p =	p =	p < .001	p = .130
Program	.017	.034	.293	.036		

# APPENDIX B: INDEPENDENT VARIABLE CONSTRUCTION

# **SOCIAL DETERMINANTS**

## **Household Income**

#### Construction

- Total parent income. Income responses were divided into 14 categories:
  - 1, Less than \$5,000; 2, \$5,000-\$9,999; 3, \$10,000-14,999; 4, \$15,000-\$19,999; 5, \$20,000-\$29,999; 6, \$30,000-\$39,999; 7, \$40,000-\$49,999; 8, \$50,000-\$59,999; 9, \$60,000-\$69,999; 10, \$70,000-\$79,999; 11, \$80,000 and over; 12, Don't Know; 13, Refused; 14, Not applicable.
- For independent variable construction, incomes were grouped as an ordinal variable with four levels: "Less than \$20,000"; "\$20,000 to \$49,999"; "\$50,000 or more"; "Don't know/refused".

## Parent Employment

- Employment status of parents/guardians, inclusive of either full- or part-time work. Separate questions
- For independent variable construction, separate questions regarding mother/female guardian and father/male guardian employment were pooled as

a nominal variable with two levels: "At least one parent employed"; "No parent employed".

## **Parent Education**

## Construction

- Education status of parents/guardians in household. Separate questions regarding mother/female guardian and father/male guardian education were pooled. Education responses were divided into 18 categories:
  - 1, No formal education; 2, Some elementary school; 3, Elementary school; 4, Some high school; 5, High school diploma or high school equivalency certificate; 6, Registered Apprenticeship certificate (including Certificate of Qualification Journeyperson's designation); 7, Some postsecondary education; 8, Diploma/certificate from trade or vocation; 9, Diploma/certificate from community college, CEGEP, University; 10, Bachelor's Degree; 11, Master's Degree; 12, Earned Doctorate (PhD); 13, Professional Degree (e.g., medical degree, law degree); 14, Others; 15, Not applicable; 16, don't know; 17, Refused; 18, Not applicable.
- For independent variable construction, responses for the parent/guardian in the household with the highest level of education were grouped as an ordinal variable with three levels: "Less than high school"; "High school"; "Postsecondary or higher".

## Female Guardian Education

- Education status of female parent/guardian in household. Education responses were divided into 18 categories:
  - 1, No formal education; 2, Some elementary school; 3, Elementary school;
     4, Some high school; 5, High school diploma or high school equivalency certificate; 6, Registered Apprenticeship certificate (including Certificate of Qualification Journeyperson's designation); 7, Some postsecondary education; 8, Diploma/certificate from trade or vocation; 9, Diploma/certificate from community college, CEGEP, University; 10,

Bachelor's Degree; 11, Master's Degree; 12, Earned Doctorate (PhD); 13, Professional Degree (e.g., medical degree, law degree); 14, Others; 15, Not applicable; 16, don't know; 17, Refused; 18, Not applicable.

• For independent variable construction, levels of education for female parent/guardian were grouped as an ordinal variable with three levels: "Less than high school"; "High school"; "Post-secondary or higher".

## Male Guardian Education

## Construction

- Education status of male parent/guardian in household. Education responses were divided into 18 categories:
  - 1, No formal education; 2, Some elementary school; 3, Elementary school; 4, Some high school; 5, High school diploma or high school equivalency certificate; 6, Registered Apprenticeship certificate (including Certificate of Qualification Journeyperson's designation); 7, Some postsecondary education; 8, Diploma/certificate from trade or vocation; 9, Diploma/certificate from community college, CEGEP, University; 10, Bachelor's Degree; 11, Master's Degree; 12, Earned Doctorate (PhD); 13, Professional Degree (e.g., medical degree, law degree); 14, Others; 15, Not applicable; 16, don't know; 17, Refused; 18, Not applicable
- For independent variable construction, levels of education for male parent/guardian were grouped as an ordinal variable with three levels: "Less than high school"; "High school"; "Postsecondary or higher".

## **Sources of Parental Support**

- How often respondents had people they could turn to for support. Responses were divided into 7 categories:
  - 1, Always; 2, Sometimes; 3, Rarely; 4, Never; 5, Don't Know; 6, Refused;
    7, Not Applicable.

• For independent variable construction, responses were grouped as an ordinal variable with three levels: "Always"; "Sometimes"; "Rarely/never".

## Food Security Index

## Construction

- A food-security index created using responses to 6 food security factors (Cannot afford more food; Cannot afford to eat balanced meals; Cut meal size or skipped meals – not enough money for food; Frequency of cut meal size or skipped meals; Eating less – not enough money for food; Hungry – could not afford enough food).
- For independent variable construction, responses were grouped as an ordinal variable will three levels: "Food secure"; "Food insecure, moderate"; "Food insecure, severe".

## Nutrition

## Construction

- How often child eats a balanced diet. Responses were divided into 7 categories:
  - 1, Always/Almost always; 2, Sometimes; 3, Rarely; 4, Never; 5, Don't Know; 6, Refused; 7, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with two levels: "Sometimes, rarely, or never"; "Always/almost always".

## **Sleep Schedule**

- How often child has a consistent sleep schedule. Responses were divided into 7 categories:
  - 1, All of the time; 2, Most of the time; 3, Some of the time; 4, None of the time; 5, Don't Know; 6, Refused; 7, Not Applicable.

• For independent variable construction, responses were grouped as an ordinal variable with two levels: "Some or none of the time"; "All or most of the time".

## Family Indian Residential School Attendance

## Construction

- The number of relatives of respondent's child that attended Indian Residential School. Individual questions on attendance were asked for the following categories of relative (mother/female guardian, father/male guardian, at least one grandparent) and pooled. Responses to individual questions were divided into 5 categories:
  - o 1, No; 2, Yes; 3, Don't know; 4, Refused; 5, Not Applicable.
- For independent variable construction, pooled responses were grouped as an ordinal variable with three levels: "No parent or grandparent attended"; "At least one parent or grandparent attended"; "Don't know/refused to answer".

## **Family Separation Experiences**

- The number of relatives of respondent's child that were separated from family by child welfare agencies, church, or government officials. Individual questions on separation(s) were asked for mothers/female guardians and fathers/male guardians and pooled. Responses to individual questions were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't know; 4, Refused; 5, Not Applicable.
- For independent variable construction, pooled responses were grouped as an ordinal variable with three levels: "No parent was separated from family"; "At least one parent was separated from family"; "Don't know/refused to answer".

## Knowledge of a First Nations Language

## Construction

- Whether respondent's child possess knowledge of a First Nations language. Responses were divided into 6 categories:
  - 1, No; 2, Yes; 3, Not applicable (too young); 4, Don't know; 5, Refused; 6, Not applicable.
- For independent variable construction, responses were grouped as an ordinal variable with two levels: "No knowledge of a First Nations language"; "Any knowledge of a First Nations language".

# Proficiency in Speaking/Understanding First Nations language

## Construction

- The proficiency of respondent's child in a First Nations language. Responses were divided into 8 categories:
  - 1, Very well (Fluent); 2, Relatively well (Intermediate); 3, With effort (Basic); 4, Only a few words; 5, Cannot speak; 6, Don't know; 7, Refused; 8, Not applicable.
- For independent variable construction, responses were grouped as an ordinal variable with 3 levels: "Cannot speak or understand"; "Basic or only a few words"; "Very or relatively well".

# HOME ENVIRONMENTS

## **Child Living with Birth Parent**

## Construction

- The number of biological parents respondent's child lives with. Individual questions on households with biological parents or other relatives (brother/sister, adoptive mother, adoptive father, aunt/uncle/cousin, grandparent/great-grandparent, stepmother, stepfather, male foster parent, female foster parent, male godparent, female godparent, other) were asked and pooled. Responses to individual questions were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't know; 4, Refused; 5, Not applicable.
- For independent variable construction, responses were grouped as a nominal variable with 2 levels: "Child does not live with a birth parent"; "Child lives with at least one birth parent".

## Marital Status of Household

## Construction

- Marital status of the household. Responses were divided into 9 categories:
  - 1, Married; 2, Common-law; 3, Widowed; 4, Separated; 5, Divorced; 6, Single, never married; 7, Don't Know; 8, Refused; 9, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with 6 levels: "Married"; "Common-law"; "Widowed"; "Divorced"; "Single, never married".

## Crowding Index

## Construction

 Index of number of family members in household to number of rooms in household. Responses were compiled from questions on the number of rooms in the household and the number of child and adult family members in the household. • For independent variable construction, responses were grouped as an ordinal variable with two levels: "Not crowded (less than or equal to one person per room)"; "Crowded (greater than one person per room)"

## **Child Breast-fed Status**

## Construction

- Duration that child was breast-fed for. Responses were divided into 14 categories:
  - 1, Not breast-fed; 2, Less than 1 month; 3, 1 month; 4, 2 months; 5, 3 months; 6, 4 months; 7, 5 months; 8, 6 months; 9, 7 months to less than one year; 10, 1 year to 2 years; 11, More than 2 years; 12, Don't Know; 13, Refused; 14, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "Not breast-fed"; "Breast-fed".

## **Child Bottle-fed Status**

## Construction

- Whether child was bottle-fed in the first 6 months. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "Not bottle-fed in first six months"; "bottle-fed in first six months".

## **Sources of Prenatal Support**

## Construction

• The individual(s) mothers went to for most of their prenatal care. Individual questions on prenatal care providers (Traditional knowledge holder, Elder, Family members, Doctor/Family Physician, Obstetrician, Midwife, Community Health

Nurse, Other) were asked and pooled. Responses to individual questions were divided into 5 categories:

- o 0, No; 1, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with 2 levels: "At least one source of support"; "No sources of support".

## **First Prenatal Appointment**

## Construction

- Timeframe of first prenatal appointment for mothers. Responses were divided into 47 categories:
  - 1, 1 week; 2, 2 weeks; 3, 3 weeks; 4, 4 weeks; 5, 5 weeks; 6, 6 weeks; 7, 7 weeks; 8, 8 weeks; 9, 9 weeks; 10, 10 weeks; 11, 11 weeks; 12, 12 weeks; 13, 13 weeks; 14, 14 weeks; 15, 15 weeks; 16, 16 weeks; 17, 17 weeks; 18, 18 weeks; 19, 19 weeks; 20, 20 weeks; 21, 21 weeks; 22, 22 weeks; 23, 23 weeks; 24, 24 weeks; 25, 25 weeks; 26, 26 weeks; 27, 27 weeks; 28, 28 weeks; 29, 29 weeks; 30, 30 weeks; 31, 31 weeks; 32, 32 weeks; 33, 33 weeks; 34, 34 weeks; 35, 35 weeks; 36, 36 weeks; 37, 37 weeks; 38, 38 weeks; 39, 39 weeks; 40, 40 weeks; 41, 41 weeks; 42, 42 weeks; 43, 43 weeks; 44, 44 weeks; 45, Don't Know; 46, Refused; 47, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with 3 levels: "13 weeks or earlier"; "14 to 27 weeks"; "28 weeks or later". Nurturing Home Environment (NUR\_2CAT)

- The degree of nurturing environment for children provided in the household. Individual questions on the frequency of physical and verbal affection were pooled. Responses were divided into 8 categories:
  - 1, Never; 2, Rarely; 3, A few times a month; 4, Once a week; 5, A few times a week; 6, Daily; 7, Don't Know; 8, Refused; 9, Not Applicable.

• For independent variable construction, responses were grouped as an ordinal variable with two levels: "Generally not nurturing"; "Nurturing".

## **Quality of Learning in Home Environment**

## Construction

- The quality of the learning environment for the child at home. Individual questions on home learning environment (Plenty of child friendly conversation, Play space indoors, Play space outdoors, Constant adult supervision, Safe environment, Age-appropriate learning materials such as toys, Age-appropriate learning materials such as books, Healthy nutrition, Encourage healthy behaviours) were pooled. Responses were divided into 5 categories:
  - o 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with three levels: "None or some (0-5)"; "Most (6-8)"; "All (9)".

## **Child Home Learning Experiences**

- Frequency of parent-to-child learning (How often do you/other family member(s) and child sing songs and rhyme together?; How often is child shown how to name printed letters and/or numbers?; How often is child encouraged to count with you or other family members (e.g., counting the cookies on a plate)?; How often do you or another adult encourage child to try to do things on their own?; How often do you or another adult help child to learn to think and solve problems?; How often do you teach child things through hands-on learning (e.g., household chores, baking, cleaning, fixing thing; How often do you play with child?) The response options were the following:
  - 1, More than once a day; 2, Once a day; 3, More than once a week; 4, Less than once a week; 5, Never; 88, Don't know; 99, Refused; 7777, Not applicable
- For independent variable construction, responses were categorized into "At least once a day" and "less than once a day", and the number of activities done at

least once a day was counted. Responses were put into three categories: 0-2 activities done daily; 3-5 activities done daily; 6-7 activities done daily.

## **Exposure to First Nations Language in Community**

#### Construction

- Frequency of child's exposure to First Nations language within their community. Responses were divided into 7 categories.
  - 1, None of the time; 2, Some of the time; 3, Most of the time; 4, All of the time; 5, Don't Know; 6, Refused; 7, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with two levels: "Generally not exposed to First Nations language"; "Generally exposed to First Nations language".

## **Importance of Traditional Teachings**

#### Construction

- The degree of importance for children to learn traditional teachings (e.g., beliefs, values, medicines, practices, ceremonies, stories, songs, and activities). Responses were divided into 7 categories.
  - 1, Very important; 2, Somewhat important; 3, A little important; 4, Not important; 5, Don't Know; 6, Refused; 7, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with two levels: "Somewhat important to not important"; "Important".

## Importance of Traditional Spiritually

## Construction

• Degree of importance where a child learns about traditional spirituality. Responses were divided into 8 categories.

1, Not important; 2, A Little important; 3, Somewhat important; 4, Very important; 5, Not Applicable; 6, Don't Know; 7 Refused; 8, Not Applicable.

For independent variable construction, responses were grouped as an ordinal variable with two levels: "Not important or a little important"; "Somewhat important"; "Very important".

## **Participation in Cultural Activities**

## Construction

- Frequency a child participates in or attends cultural activities (e.g., drumming, singing, storytelling, powwow, traditional dancing, hunting and gathering, beading, ceremonies, etc.). Responses were divided into 8 categories:
  - 1, 4 or more times per week; 2, 1-3 times per week; 3, 1-3 times per month; 4, Less than once a month; 5, Never; 6, Don't Know; 7, Refused; 8, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with two levels: "Less than once per month to never"; "At least once per month".

## **CAREGIVING ENVIRONMENTS**

## **Occurrence of Regular Child care**

- Whether child is receiving any regular child care. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".

## Formality of Child care Arrangement

## Construction

- Child's primary child care arrangement. Responses were divided into 9 categories:
  - 1, Care in own home (relative); 2, Care in own home (non-relative); 3, Care in someone else's home (relative); 4, Care in someone else's home (non-relative); 5, Daycare centre; 6, Before and/or after school program; 7, Other (open-ended); 8, Don't Know; 9, Refused; 10, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "Informal"; "Formal".

## License Status of Child care

## Construction

- Whether child's primary child care arrangement is a licensed establishment. Responses were divided into 5 categories:
  - o 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".

## Location of Child care

#### Construction

- Whether child's primary child care arrangement is in a First Nations community or is on-reserve. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.

For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".
# **Quality of Child care**

#### Construction

- The quality of child's primary child care arrangement. Individual questions on child care quality (Plenty of child friendly conversation, Provider has specialized training in early childhood education, Neat, clean and orderly physical setting, Sufficient indoor play area, Sufficient outdoor play area, Materials and equipment available that are developmentally appropriate for children of all age levels, Planned activities that are developmentally appropriate for children of all age levels, Constant adult supervision, Is able to reach parent or caregiver in an emergency, Follows sanitary procedures such as hand washing, Healthy nutrition, Provision for sick children, Natural light [i.e., windows]) were pooled. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".

### First Nations Caregivers at Child care

#### Construction

- Whether there are any First Nations caregivers at child's primary child care arrangement. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.
- For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".

### **Child Interaction with First Nations Caregiver**

#### Construction

- Whether child interacts with a First Nations caregiver. Responses were divided into 5 categories:
  - o 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.

• For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".

## First Nations Language Exposure at Child care

### Construction

- Frequency of child's exposure to First Nations Language at child care. Responses were divided into 7 categories:
  - 1, None of the time; 2, Some of the time; 3, Most of the time; 4, All of the time; 5, Don't Know; 6, Refused; 7, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with four levels: "None of the time"; "Some of the time"; "Most or all of the time"; "Don't know/refused".

# Traditional First Nations Teachings at Child care

### Construction

- Frequency of child learning traditional teachings at child care. Responses were divided into categories:
  - 1, Never; 2, Less than once a month; 3, Once a month; 4, Weekly; 5, Almost daily/daily; 6, Don't Know; 7, Refused; 8, Not Applicable.
- For independent variable construction, responses were grouped as an ordinal variable with four levels: "Never or less than once per month"; "Once per month or more"; "Don't know/refused".

## Attendance at First Nations Early Childhood Program

### Construction

- Whether child has attended an early childhood program specifically designed for First Nations children, either Head Start or another program. Responses were divided into 5 categories:
  - 1, No; 2, Yes; 3, Don't Know; 4, Refused; 5, Not Applicable.

• For independent variable construction, responses were grouped as a nominal variable with two levels: "No"; "Yes".