



# Determinants of socioemotional and behavioral well-being among First Nations children living off-reserve in Canada: A cross-sectional study

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## Abstract

Few studies have focused on off-reserve Indigenous children and families. This nationally representative, cross-sectional study (data collected from 2006 to 2007) examined Indigenous- and non-Indigenous-specific determinants associated with positive socioemotional and behavioral well-being among First Nations children living off-reserve in Canada. The parents or other caregivers of 2990 two-to-five-year-old children ( $M = 3.65$ ; 50.6% male) reported on their children's socioemotional and behavioral well-being and a range of child, parent, and housing characteristics. Being taught an Indigenous culture, greater community cohesion, caregiver nurturance, good parental/other caregiver health, and fewer household members were associated with better socioemotional and behavioral well-being. These results highlight the importance of leveraging Indigenous-specific determinants and acknowledging non-Indigenous-specific factors, to promote the well-being of First Nations children living off-reserve.

Indigenous Peoples are the original inhabitants of traditional lands prior to the establishment of country borders. There are nearly 500 million Indigenous Peoples worldwide and in the face of enduring colonialism, they have displayed tremendous strength, resilience, and resistance (Dhir et al., 2020). Survivance, a term coined by Anishinaabe theorist Gerald Vizenor, highlights that not only have Indigenous Peoples survived concerted efforts to destroy their cultures, but continue

to revitalize their cultural practices, traditions, and languages (Vizenor, 1999). Indigenous children and youth are often at the forefront of efforts aimed at cultural restoration and language revitalization, as well as serving as agents of political, social, and environmental change. Their commitment to activism emanates largely from their Indigenous cultures and teachings. Since children are viewed as sacred individuals, great importance is placed on their development to ensure

**Abbreviations:** ACS, Aboriginal Children's Survey; IRS, Indian Residential School; SDQ, Strengths and Difficulties Questionnaire.

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they grow into healthy, contributing citizens of society (Greenwood, 2005).

Despite the profound resilience and strength of Indigenous children and youth, the majority of research on Indigenous children's health has focused on negative health outcomes, disparities, and deficits. For instance, in a systematic review of 47 studies on Indigenous children's and young adult's mental health, 87% of these studies included descriptions of negative health outcomes (Young et al., 2017). This focus is disadvantageous for several reasons. One, the focus on deficits stands in direct contrast to First Nations views of mental well-being in which mental health is conceptualized as strength-based and encompasses spiritual, emotional, physical, and community health (Vukic et al., 2011). Two, the focus on health disparities among marginalized groups without the appropriate (historical) context can lead to stereotyping and stigmatization. Stigma, in turn, can negatively impact Indigenous People's development of cultural identity (Priest et al., 2012) and their desire to seek healthcare (Findling et al., 2019), which further worsens health disparities. Three, identifying positive promotive factors of mental well-being can guide the appropriate allocation of resources aimed at improving the health of First Nations children. Ultimately, policymakers, researchers, and community members can then effectively leverage these factors to promote healthy child development in their communities.

In this study, we examined factors associated with positive socioemotional and behavioral well-being among First Nations children living off-reserve. First Nations are the largest Indigenous group in Canada, comprising of 60% of the Indigenous population (Government of Canada, 2017). There are more than one million First Nations individuals from 634 culturally diverse bands (Government of Canada, 2017). About 30% of First Nations individuals live on a reserve, tracts of land that are designated for use by First Nations according to treaty rights (Government of Canada, 2017), whereas the other 70% live off-reserve in rural or urban areas throughout Canada. Even though the majority of First Nations individuals live off-reserve, the off-reserve population is significantly underrepresented in the Indigenous child development and health literatures (Nelson & Wilson, 2017).

The study of children living off-reserve also provides a unique opportunity to understand a population that is immersed in the dominant Eurocentric culture while still trying to uphold their own traditional cultural values. In a large survey of off-reserve First Nations, Métis, and Inuit adults ( $\geq 18$  years old) living in 11 urban Canadian cities, 60% of the participants felt a strong connection with their traditional land and communities although 71% of them considered their current urban city "home" (Environics Institute, 2010). Feelings of belongingness and connection to traditional lands among adults can

influence children given that their socialization is impacted by their family, neighborhoods, and communities (Causadias & Cicchetti, 2018; Shonkoff et al., 2012). Among First Nations communities, where extended family members and community members often partake in childrearing, the impacts may be even greater (Halseth & Greenwood, 2019). Examining culturally relevant factors associated with positive well-being among Indigenous children may be particularly important to understanding how to strengthen community and cultural ties in an urban, off-reserve environment. Indeed, community connectedness is a key factor in taking pride in one's Indigenous identity, and research has shown that Indigenous Peoples living off-reserve who have a sense of cultural connectedness have better mental health (Environics Institute, 2010). Thus, the focus on an off-reserve population provides an important opportunity to study a large, growing population that has a strong desire to maintain cultural traditions and ties with their Indigeneity.

### Socioemotional and behavioral well-being in early childhood

Early childhood is a critical period for the optimal development of socioemotional and behavioral well-being. Socioemotional and behavioral well-being encompasses the ability to express, understand, and regulate emotions, behaviors, and social interactions in line with sociocultural norms (Campbell et al., 2016). Prosocial behavior, an aspect of socioemotional and behavioral well-being, includes any behavior that is meant to benefit others (Eisenberg, 1986) and can include helping, sharing, and comforting behaviors (Dunfield, 2014). Developmental psychology models support the notion that early life experiences shape the trajectory of adult life. According to the ecobiodevelopmental framework, both proximal (e.g., parent mental health) and distal (e.g., community structure and supports) factors experienced in early childhood can shape behavioral well-being across the lifespan (Shonkoff et al., 2012). Accordingly, positive socioemotional and behavioral well-being is associated with academic achievement, school attendance, and fewer mental health challenges in adulthood (Carneiro et al., 2007). A wide range of individual, family, and societal factors influence the socioemotional and behavioral well-being of children. Risk factors for reduced well-being include maternal depression, inconsistent or harsh parenting, low parental education, single parenthood, and socioeconomic disadvantage (Eamon, 2001; Maggi et al., 2010; Sameroff, 2006). While such risk factors can negatively shape life trajectories and mental health, promotive factors can reduce or mitigate the adverse effects of these risk exposures (Sameroff, 2006). Promotive factors of positive socioemotional and behavioral well-being include nurturing parenting styles, positive peer

interactions, family cohesion, and access to social supports (Masten et al., 1999; Sameroff, 2006).

### Socioemotional and behavioral well-being in Indigenous (including First Nations) children

Much of our knowledge about healthy child well-being is based on studies with samples consisting mostly of white children and families from socially advantaged backgrounds. While Indigenous children and their families have demonstrated tremendous resilience and resistance in their reclamation of cultures, languages, and ways of knowing, the existing colonial, oppressive, and racist systems have enduring effects on Indigenous children's socioemotional and behavioral well-being (Fryberg et al., 2018). One of the most harmful of these systems was the creation of Indian Residential Schools (IRS) that were intended to assimilate Indigenous children into the dominant EuroChristian culture (Kirmayer et al., 2016). In these settings, children were forcibly separated from their parents, forbidden to speak their Indigenous languages, forced to participate in manual labor or domestic duties, and subjected to emotional, physical, and sexual abuse in some cases (Kirmayer et al., 2014, 2016). Today, the institution of IRS have been recognized as a cultural genocide by the Truth and Reconciliation Commission of Canada (Truth and Reconciliation Commission of Canada, 2015). After the staggered closure of IRS, there was a widespread effort in the 1960s and 1970s to remove Indigenous children from their homes and place them in the care of non-Indigenous families (known as the Sixties Scoop) (Kirmayer et al., 2016). Ultimately, these colonial policies broke apart traditional family units, often exposed children to abuse from authority figures in their most formative years, and stripped children of their opportunity to learn their culture, language, and traditional parenting practices (Kirmayer et al., 2003). These experiences have resulted in not only long-term effects, where survivors of residential or boarding schools have reported feelings of anger, hopelessness, sadness, and other disruptions in their emotion regulation and capacity (Brave Heart, 1999), but intergenerational effects as well. Studies have indicated that intergenerational trauma, where adult children (18 years and older) and grandchildren (aged 10–12 years old) of survivors of IRS, Sixties Scoop, and other relocation policies have shown poorer psychological well-being (Hackett et al., 2016; Walls & Whitbeck, 2012), more substance use (Walls & Whitbeck, 2012), a lack of warm parenting (Walls & Whitbeck, 2012), and suicidality (Hackett et al., 2016). While these findings are cross-sectional in nature, they do suggest that the impacts of intergenerational trauma can be felt across multiple generations. Mechanisms of intergenerational risk transmission include less optimal parenting styles (given disruptions in emotion regulation as previously described), negative coping

strategies, and disproportionate exposure to environmental stressors (Bombay et al., 2009). Intergenerational trauma also contributes to the overrepresentation of Indigenous children in the Canadian foster care system where Indigenous youth ( $\leq 14$  years old) comprise 53.8% of the population despite only making up 7.7% of youth in Canada (Government of Canada, 2022). The enduring effects of colonialism have resulted in housing and food insecurity, lack of clean water access, overrepresentation in the foster care and criminal system, disadvantaged socioeconomic status, and lack of access to healthcare.

Given the similar histories of colonialism and systems contributing to intergenerational trauma among the CANZUS nations (i.e., Canada, Australia, New Zealand, and the US), data from Indigenous communities in the other countries can inform our general understanding of Indigenous child development within the context of risk and resilience. For example, among 5–6-year-old Aboriginal and Torres Strait Islander children in Australia, O'Brien et al. (2020) found that they were almost three times more likely to have conduct problems, hyperactivity/inattention, emotional difficulties, and total difficulties on the Strengths and Difficulties Questionnaire (SDQ) than their non-Indigenous peers. In a study of American Indian Northern Plains toddlers (i.e., Indigenous Peoples in the USA), Sarche et al. (2009) found that a significant number scored above the 'Of Potential Concern' cut-off for externalizing (18.6%), internalizing (10.8%), and competence (22.1%) problems using the Infant-Toddler Social and Emotional Assessment. Finally, in a nationally representative survey of Māori children, researchers found that they had poorer parent-reported emotional, behavioral, and overall health compared to children in the general population (Ministry of Health, 2008).

These data have informed our general understanding of Indigenous child development and helped identify which mental health challenges may be more common in some Indigenous communities than others. However, a greater focus is needed on positive aspects of well-being and identifying factors that can positively influence health. Collection of such data would align with First Nations views of well-being, reduce stereotyping by highlighting strengths, and guide the development of interventions to promote and sustain positive well-being among First Nations preschool-aged children. For instance, cultural differences may affect prosocial behavior (Chen & French, 2008). Other data indicate that Indigenous-specific (including First Nations) parenting practices include teaching children about sharing roles in the community and helping others from a very young age (Byers et al., 2012). These parenting practices are in line with Indigenous worldviews of health where personal and community health are interconnected (Chandler, 2011). Yet, there are no data describing prosocial behavior in First Nations preschool-aged children, nor data on factors that may influence this behavior.

Studies that have been conducted in older First Nations children and youth have found that higher quality parent–child and peer relationships (Kaspar, 2013), higher academic performance (Mykota & Schwan, 2006), and strong self-esteem and optimism (Ames et al., 2015) were associated with better socioemotional and behavioral well-being. Additionally, studies that involve Indigenous preschool-aged children (but not First Nations) have reported links between a number of commonly reported factors (e.g., non-Indigenous-specific factors) including having a mother who received antenatal care within the first 20 weeks' gestation, having a mother with higher education, and having moved residences less than three times were associated with better child socioemotional and behavioral well-being (Williamson et al., 2016, 2019).

Although these common determinants contribute to Indigenous children's well-being, they represent only part of the developmental process. Cultural processes can influence development and so their examination can enrich the study of early developmental psychology (Blacklock et al., 2020; Chandler & Lalonde, 1998; Cross et al., 2018; Gibbons et al., 2018). In particular, Indigenous-specific determinants are factors relevant to the sociopolitical context of being Indigenous in Canada (Greenwood & de Leeuw, 2012). These factors include connection with land, understanding or speaking an Indigenous language, engaging in Indigenous cultural activities, having a relative who attended IRS, and the experience of systemic racism (Blacklock et al., 2020; Greenwood & de Leeuw, 2012). Identifying and understanding the influence of Indigenous-specific determinants is important because many First Nations individuals draw strength from their cultural knowledge and teachings (Kirmayer et al., 2003). Indeed, cultivating strong cultural restoration could have significant benefits for children, families, and communities, especially among First Nations communities for whom a greater engagement of cultural continuity (e.g., having titles over traditional lands, Indigenous self-governance, access to cultural facilities, and control over education, police or fire, and health care services) have been associated with lower rates of youth suicide (Chandler & Lalonde, 1998). Therefore, examining Indigenous-specific determinants of health can provide a more holistic understanding of the full experience of First Nations children, their developmental pathways, and set the stage for the development of more effective early interventions.

## The current study

The aim of the current study was to identify Indigenous and non-Indigenous-specific determinants of socioemotional and behavioral well-being among 2 to 5 year-old First Nations children living off-reserve in Canada. In keeping with the ecobiodevelopmental framework's, we examined individual-, parent- or caregiver-, and

community-level determinants of First Nations children's socioemotional and behavioral health. This framework is consistent with some Indigenous views of child development which acknowledge the impact that interactions between kin, community members, and nature can have on child behavior and long-term development (Cournoyer, 2012). Therefore, our specific research question was: Which individual-, parent- or caregiver-, and community-level determinants are associated with positive socioemotional and behavioral well-being among First Nations children living off-reserve in Canada? Our exploratory hypothesis was that Indigenous-specific determinants of well-being are associated with higher socioemotional and behavioral well-being (i.e., lower total difficulties scores and higher prosocial behavior scores). This work has the potential to advance the Indigenous child health literature in four critical ways: (a) utilizing representative, Canadian data for a population (First Nations children living off-reserve) that is grossly under-represented in the child health literature, (b) focusing on preschool-aged children given the importance of early intervention and prevention, (c) examining positive aspects of socioemotional and behavioral well-being, and (d) examining factors, including Indigenous-specific determinants, that are associated with socioemotional and behavioral well-being.

## METHODS

### Participants

The Aboriginal Children's Survey (ACS), a cross-sectional, nationally representative survey, assesses the development and well-being of Indigenous children (i.e., First Nations, Métis, and Inuit) under 6 years of age (by October 31, 2006) living off-reserve throughout Canada (Statistics Canada, 2008). The sociodemographic characteristics of the study sample are presented in Table 1. The ACS was conducted between October 2006 and March 2007. Children living on-reserve or in institutions were excluded. The ACS was created in collaboration with Indigenous stakeholders and contained a wide range of measures designed to understand Indigenous (including First Nations) experiences. To date, the ACS is the most recent nationally representative survey on First Nations preschool-aged children's health, development, and well-being. The description of socioemotional and behavioral well-being, along with its determinants, in this population can lay the foundation for researchers to compare trends in well-being over time. The sampling frame of the ACS included children under the age of 6 years that were identified as Indigenous (First Nations, Métis, or Inuit and/or had Indigenous ancestors and/or was a Status First Nations and/or had First Nations band membership) by parents or other caregivers on the 2006 Canadian Census (Statistics Canada, 2008). Of the 17,472 children identified, 14,170 had



**TABLE 1** Sociodemographic information on 2990 First Nations children and their parents or other caregivers in the Aboriginal Children's Survey.

Sociodemographic characteristics	Participants ( <i>N</i> = 2990)
Child characteristics	
Child age in years ( <i>M</i> (SD))	3.65 (1.16)
Sex (%)	
Male	50.6%
Female	49.4%
Can speak at least one Indigenous language (%)	
Yes	31.5%
No	68.4%
Is taught about Indigenous culture (%)	
Yes	50.9%
No	48.3%
Parent or other caregiver characteristics	
Self-reported health status (%)	
Very good or excellent health	65.8%
Good, fair, or poor health	33.2%
Education level (%)	
College education and above	45.6%
High school education and below	53.6%
Parent or Other caregiver (or spouse) taken away from home by child welfare agencies, church, or government officials (%)	
No parent or other caregiver (or spouse) taken away	45.3%
1 Parent or other caregiver (or spouse) taken away	9.2%
Both parents or other caregivers taken away	1.1%
Household and community characteristics	
Number of individuals living in the household ( <i>n</i> , (SD))	4.39 (1.55)
Household income (%)	
Above low-income threshold	55.0%
Below low-income threshold	41.5%
Community cohesion scale (0–6) ( <i>M</i> (SD))	2.73 (2.11)
Parent or other caregiver nurturing characteristics	
Child is shown approval (%)	
At least once a day	89.5%
Once a week or less	9.3%
Child watches the parent or other caregiver or other people doing things (%)	
At least once a day	95.2%
Once a week or less	3.7%
Child is given 'time out' or sent to their room (%)	
At least once a day	23.0%
Once a week or less	75.6%
Socioemotional and behavioral well-being	
Total difficulties score ( <i>M</i> (SD))	9.11 (5.55)
Prosocial score ( <i>M</i> (SD))	8.58 (1.66)

Abbreviations: *M*, mean; SD, standard deviation.

the survey (81.1% response rate) completed by their parent or other caregiver (Statistics Canada, 2008). Of these 14,170 children, about 90% (*n* = 12,845) reported their Indigenous identity (First Nations, Métis, or Inuit). Of these 12,845 Indigenous children, 3465 were First Nations children that were aged 2- to 5-years old. The SDQ (used to measure the study outcome) was only administered to parents or other caregivers of children aged 2 years and older. The parent or other caregiver of the child aged 2 to 5 years old completed the 2–4 year-old version of the SDQ (<https://www.sdqinfo.org/>). Telephone interviews were conducted unless participants lived in the Northwest Territories (except Yellowknife), Labrador, or Inuit communities, where in-person interviews were conducted. In accordance with the suggestions of many Indigenous researchers and the United Nations (United Nations, 2019), we did not aggregate all Indigenous children who participated in the ACS into a single homogenous group since doing so neglects the rich diversity among Indigenous groups and prevents the identification of community-specific data (Chandler, 2011). Rather, we only include First Nations children as they are the most populous Indigenous group in Canada (Government of Canada, 2017), but remain underrepresented in the Indigenous health literature (Nelson & Wilson, 2017). Out of the 3465 First Nations children eligible to complete the SDQ, 86.3% (*n* = 2990) had complete outcome data. Therefore, the final sample size consisted of 2990 First Nations 2- to 5-year-old children.

## Determinants of socioemotional and behavioral well-being

The majority of determinants (Indigenous-specific and non-Indigenous-specific) examined in this study were dichotomized to ensure that there were a sufficient number of respondents for each response (since Statistics Canada will not release data for cell counts <10) while still providing meaningful data.

### Indigenous-specific determinants

Indigenous-specific factors that could influence First Nations well-being were selected for analysis. Specifically, speaking an Indigenous language (Hallett et al., 2007; Kirmayer et al., 2014), being taught an Indigenous culture (Andersson & Ledogar, 2008), and strong community cohesion (Salmon et al., 2019; Young et al., 2017). We also included whether the parent or other caregiver was ever removed from their family by child welfare agencies, church, or government officials, as a measure of intergenerational trauma (Bombay et al., 2014; Walls & Whitbeck, 2012).

The child speaking an Indigenous language was assessed by asking the parent or other caregiver: "What language does the child speak or understand even if he/she only knows a few words?". Responses were categorized into 'Any Indigenous Language' (Algonquin,

Atikamekw, Blackfoot, Carrier, Cree, Dakota/Sioux, Dene, Haida, Innu/Montagnais, Inuktitut/Inuvialuktun, Micmac/Mi'kmaq, Michif, Ojibway, Oji-Cree, or another Indigenous language) (coded as 1) versus 'None' (i.e., English or French) (coded as 0).

The teaching of Indigenous culture was measured by asking the parent or other caregiver: "Does anyone help the child to understand First Nations, Métis, or Inuit culture and history?". Responses were categorized as 'Yes' (coded as 1) and 'No' (coded as 0).

Community cohesion was measured on a 5-point Likert scale (Poor to Excellent) by asking the parent or other caregiver to rate six aspects of their community. These six aspects asked parents how they felt about their community (1) as a place with good schools, nursery schools, and early childhood education programs, (2) as a place with adequate facilities for children for example community centers, rinks, gyms, and parks, (3) as a safe community, (4) as a place with health facilities, (5) as a place with actively involved members of the community, and (6) as a place with First Nations, Métis, and Inuit cultural activities. The responses for each aspect were grouped into two categories: 'Excellent or Very good' (1 point) and 'Good or Fair or Poor' (0 points). We created a community cohesion scale by summing scores across the six items (range 0–6). Internal consistency was satisfactory ( $\alpha = .80$ ).

Family separation experienced by the parent or other caregiver (or their spouse) was measured by asking the parent or other caregiver: "Were you or your spouse ever removed from their family by child welfare agencies, church, or government officials?". Responses were categorized as 'Yes' (coded as 1) and 'No' (coded as 0).

### *Non-Indigenous-specific determinants*

In addition to Indigenous-specific determinants, we also sought to identify well-established factors linked to socioemotional and behavioral well-being among both children in the general population and Indigenous children. Based on the literature, we identified parent or other caregiver self-reported health (Maggi et al., 2010; Sameroff, 2006), household size (Sameroff, 2006), and parent or other caregiver nurturing behavior (Eamon, 2001; Sameroff, 2006; Williams & Berthelsen, 2017) to be associated with socioemotional and behavioral well-being among children. These variables were also included in our analysis.

Parent or other caregiver self-reported health was measured on a 5-point Likert scale. The responses were categorized as 'Excellent or Very good' (coded as 1) versus 'Good or Fair or Poor' (coded as 0).

Household size was measured by asking the parent or other caregiver about the number of individuals (adults and children) who live in the household. Responses were measured on a continuous scale.

Parenting or other caregiver nurturing behavior was measured using three items from a 13-item-nurturing

scale in the ACS. The three items selected were consistent with other parenting behavior scales from national surveys (e.g., National Longitudinal Survey of Children and Youth) and resulted in the greatest decrease of Cronbach's alpha if removed from the 13-item scale. Parents or other caregivers answered three items to measure nurturing behavior which included: "How often do you give him/her the opportunity to watch you or other people do things?", "How often is he/she shown approval using gestures or body language?", and "How often is he/she given a 'time out' or sent to his/her room?". Responses for the first two items were categorized as 'At least once a day' (coded as 1) versus 'Once a week or less' (coded as 0). These codes were reversed for the last item. Given that research suggests that Indigenous parenting approaches different from Western approaches (i.e., less physical punishment, increased child autonomy and exploration, and increased parental sensitivity) we elected to study these three variables separately rather than combining them in a single scale (Brant, 1990; Letourneau et al., 2005; Muir & Bohr, 2019; Neckoway et al., 2007). Indeed, combining these variables in a single scale could mask any differences in parental nurturance that would not be seen otherwise.

## Controls

A priori, child age, child sex, and household income were selected as controls given their associations with our predictor variables and links to socioemotional and behavioral well-being in the general population. Child age was measured in years by asking the parent or other caregiver the age of their child at the time of the survey and was examined as a continuous variable. Child sex (*male*=0, *female*=1) was measured by asking the parent or other caregiver the sex of their child. Household income was assessed by asking the parent or other caregiver whether their household income was above the low-income threshold (no quantitative data available). A household was considered low-income if their household income (after tax) was less than the median adjusted household income across Canada. Responses were categorized as 'Above low-income' (coded as 1) or 'Below low-income' (coded as 0). While we defined low income as a dichotomous outcome, for context, the average low-income cut-off in 2006 for a household of four persons living in an urban area (population >15,000) was \$28,483 (Statistics Canada, 2008).

## Outcomes

### *Socioemotional and behavioral well-being*

Parents or other caregivers of children aged 2 to 5 years completed the SDQ (Goodman, 1997). The

SDQ was used to measure socioemotional and behavioral issues in children over the past 6 months and consists of five subscales which are each scored from 0 to 10: emotional difficulties, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. Higher scores are indicative of greater problems, with the exception of the prosocial scale for which higher scores are indicative of more positive prosocial behavior. In this study, we summed the scores of “Emotional Difficulties”, “Conduct Problems”, “Hyperactivity/Inattention”, and “Peer Relationship Problems” to create a “Total Difficulties” variable. The prosocial behavior variable was created by using the total of the prosocial behavior scale. The SDQ was selected for use in the ACS after consultations with Indigenous and non-Indigenous stakeholders who wanted to use an accessible screening tool to examine well-being among Indigenous children (Oliver et al., 2009). In this study, we used the version of the SDQ for 2–4-year-old children, which has demonstrated satisfactory reliability ( $\alpha \geq .70$ ) (Nunnally & Bernstein, 1994; Taber, 2018) across all subscales (i.e., emotional difficulties, conduct problems, hyperactivity/inattention, and prosocial behavior) except the peer relationship problems scale which approaches the satisfactory cut-off ( $\alpha = .63$ ) (Croft et al., 2015). Among our study sample of First Nations children, internal reliability was satisfactory for total difficulties ( $\alpha = .79$ ) and approached the satisfactory cut-off for the prosocial ( $\alpha = .67$ ) subscale. The SDQ, including all subscales and the Total Difficulties scale, has also been successfully used, validated, and found to have satisfactory internal consistency within other Indigenous children and youth from around the world (Williamson et al., 2014). Since valid clinical cut-points have not been established for First Nations children living in Canada, continuous scores were used in this study.

## Statistical analyses

Characteristics of the study sample were described using proportions and percentages for categorical data, and mean ( $M$ ) and standard deviations ( $SD$ ) for continuous variables. A correlation matrix using point-biserial correlations was conducted to describe correlations between continuous and dichotomous study variables. Two separate multiple linear regression models were conducted. One model examined associations between determinants and total difficulties, and the other examined associations between determinants and prosocial behavior. Each regression model included all of the variables (including controls) entered simultaneously. Given the nature of our research question, these analyses were exploratory. Participants with missing data on determinants or SDQ scores were not included in the analyses. Little's Test was conducted to determine if the data were

missing completely at random. Standardized weights were applied to the number of participants to represent the size of the First Nations population, as well as to adjust for non-response where no data was collected for the child either due to inability of the survey interviewer to contact the child or refusal to participate in the survey (Statistics Canada, 2008). All of the data were vetted by a Statistics Canada personnel and cell counts  $<10$  were not released. Statistical significance is set at  $p < .05$  (two-tailed). All statistical analyses were conducted in SPSS (Version 26).

## RESULTS

A correlation matrix of all study variables is displayed in Table 2. The strongest correlation was between the SDQ total difficulties score and SDQ prosocial behavior scores (inverse correlation), followed by correlations between speaking an Indigenous language and being taught an Indigenous culture. When compared against all 2- to 5-year-old First Nations children in the ACS ( $n = 3465$ ), the study sample ( $n = 2990$ ) was older, more likely to live in a household above the low-income threshold, live in a more well-connected community, and more likely to watch the parent or other caregiver or people do things at least once a day. The parent or other caregiver of the study sample was also more likely to report excellent or very good health, complete at least a college degree, and experience family separation during their own childhood compared to all parents or other caregivers of 2 to 5-year-old First Nations children in the ACS (see Supporting Information). Missing data for child sociodemographic characteristics included child sex (0.03%), speaking an Indigenous language (0.1%), and being taught about an Indigenous culture (0.8%). Missing data for parent/other caregiver sociodemographic characteristics included self-reported health status (1.0%), education level (0.8%), and removal from home by child welfare agencies, church, or government officials (44.4%). Missing data for household/community characteristics included household income (3.5%). Missing data for parent or other caregiver nurturing characteristics included the child being shown approval (1.2%), child watching parent/other caregiver or other people doing things (1.1%), and the child being given a time out or sent to their room (1.4%). Regarding the pattern of missingness, the data were not missing completely at random (Little's Test  $p < .001$ ). Therefore, missing data were either missing at random or missing not at random.

The present study sample consisted of 2990 two to five year-old First Nations children ( $M = 3.65$  years,  $SD = 1.16$ ) of which 50.6% were male (see Table 1). About one-third of participants could speak or understand at least one Indigenous language and just over half (50.9%) were taught their Indigenous culture. In terms of their parents

TABLE 2 Correlation matrix of independent and dependent variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Speaking an Indigenous language	-												
2. Taught an Indigenous culture	.37**	-											
3. Community cohesion	-.03	.05*	-										
4. Parent or other caregiver removed from home	.08**	.04	-.11**	-									
5. Parent or other caregiver health	-.05**	-.03	.19**	-.13**	-								
6. Household size	.05**	.06**	-.01	.10**	-.02	-							
7. Child watches parents or other adults	-.09**	-.01	.05*	-.08**	.02	.01	-						
8. Child shown approval	-.01	.04*	.05**	-.02	.05**	-.01	.10**	-					
9. Child given time out	.03*	.05**	.08**	-.07**	.03	-.04*	-.01	-.04*	-				
10. Child age	.09**	.15**	.03	-.03	-.03	.02	-.05**	-.06**	.15**	-			
11. Child is female	.03	.03	.01	.04	-.03	-.09	-.01	-.04*	.08**	0.01	-		
12. Household income	-.12**	-.06**	.14**	-.14**	.17**	0.02	.04*	0.03	.06**	-.04*	-.01	-	
13. Prosocial scale	0.03	.12**	.15**	-.04	.07**	-.08**	.04*	.06**	.11**	.18**	.08**	-.05*	-
14. Total difficulties scale	0.02	-.04*	-.11**	.14**	-.17**	.07**	-.03	-.04*	-.23**	-.11**	-.07**	.14**	-.41**

Note: Correlation coefficients are Pearson correlation.

\* $p < .05$  (two-tailed); \*\* $p < .01$  (two-tailed).



or other caregivers, two-thirds reported very good or excellent health (65.7%) and 45.6% had at least a college education. Finally, 55% of households were above the low-income threshold.

### Determinants of SDQ Total Difficulties scores

The full model significantly predicted total difficulties scores,  $F(13, 2990) = 27.44$ ,  $p < .001$ , and explained 12.2% of the variance (adjusted  $R^2$  value). Three Indigenous-specific determinants were associated with fewer total difficulties after adjusting for all other variables: Being taught an Indigenous culture, living in a community with high levels of perceived community cohesion, and the parent or other caregiver (or their spouse) not experiencing family separation (Table 3). Non-Indigenous-specific factors associated with fewer total difficulties after adjusting for all other variables included: Very good or excellent parental or other caregiver health, being shown approval at least once a day, watching the parent or other caregiver at

least once a day, being given a time out once a week or less, fewer household members, living in a household above the low-income threshold, older child age, and being female (Table 3).

### Determinants of SDQ prosocial behavior scores

The full model significantly predicted prosocial behavior scores,  $F(13, 2990) = 19.99$ ,  $p < .001$ , and explained 9.1% of the variance (adjusted  $R^2$  value). Two Indigenous-specific determinants were significantly associated with greater prosocial behavior after adjusting for all other variables: Being taught an Indigenous culture and living in a community with high levels of perceived community cohesion (Table 4). Non-Indigenous-specific determinants of greater prosocial behavior that were statistically significant after adjusting for all other variables were: Very good or excellent parental or other caregiver health, being shown approval at least once a day, being given a time out once a week or less, fewer household members, older child age, and being female (Table 4).

**TABLE 3** Standard deviation changes in total difficulties among 2 to 5 year-old First Nations children.

Indigenous- and non-Indigenous-specific determinants	Total difficulties (lower scores indicate better socioemotional and behavioral well-being)	
	$\beta$ (95% CI)	$p$ -Value
Child understands Indigenous language	.03 (−.01 to .07)	.137
Someone teaches child Indigenous culture	−.04 (−.08 to −.01)	.028
High levels of community cohesion	−.04 (−.08 to −.01)	.027
1 Parent/other caregiver experienced family separation	.05 (.01–.09)	.006
Both parents/other caregivers experienced family separation	.05 (.01–.08)	.013
Very good or excellent parent/other caregiver health	−.14 (−.18 to −.11)	<.001
Household size (continuous variable)	.06 (.02–.10)	.001
Child shown approval at least once a day	−.04 (−.08 to −.01)	.027
Child watches parent/other caregiver do things at least once a day	−.04 (−.08 to −.01)	.037
Child given time out once a week or less	−.20 (−.24 to −.16)	<.001
Child age (continuous variable)	−.09 (−.13 to −.06)	<.001
Child is female	−.05 (−.09 to −.02)	.005
Household above low-income	−.09 (−.13 to −.05)	<.001

Abbreviations: CI, confidence interval;  $\beta$ , standardized beta.

**TABLE 4** Standard deviation changes in prosocial behavior among 2 to 5 year-old First Nations children.

Indigenous- and non-Indigenous-specific determinants	Prosocial behavior (higher scores indicate greater prosocial behavior)	
	$\beta$ (95% CI)	$p$ -Value
Child understands Indigenous language	−.01 (−.05 to .04)	.823
Someone teaches child Indigenous culture	.10 (.06 to .14)	<.001
High levels of community cohesion	.12 (.08 to .16)	<.001
1 Parent/other caregiver experienced family separation	.02 (−.02 to .06)	.333
Both parents/other caregivers experienced family separation	−.03 (−.07 to .01)	.110
Very good or excellent parent/other caregiver health	.05 (.02 to .09)	.006
Household size (continuous variable)	−.09 (−.13 to −.05)	<.001
Child shown approval at least once a day	.05 (.01 to .08)	.016
Child watches parent/other caregiver do things at least once a day	.03 (−.01 to .07)	.121
Child given time out once a week or less	.08 (.04 to .12)	<.001
Child age (continuous variable)	.16 (.13 to .20)	<.001
Child is female	.07 (.03 to .11)	<.001
Household above low-income	.02 (−.02 to .06)	.381

Abbreviations: CI, confidence interval;  $\beta$ , standardized beta.

## DISCUSSION

Using a nationally representative sample, we identified Indigenous-specific and non-Indigenous-specific determinants associated with the socioemotional and behavioral well-being of 2 to 5 year-old First Nations children living off-reserve in Canada. These findings are consistent with the ecobiodevelopmental framework which suggests that different domains (e.g., individual, parent, community) all intersect and influence well-being. Specifically, the determinants that were associated with fewer total difficulties on the SDQ included being taught an Indigenous culture, living in a community rated to have high cohesion, having a parent or other caregiver who did not experience family separation, better parent or other caregiver health, parental or other caregiver nurturance, smaller household size, higher household income, older child age, and being female. We also found that being taught an Indigenous culture, living in a community rated to have high cohesion, better parent or other caregiver health, being shown approval at least once a day, being given a time out once a week or less, smaller household size, older child age, and being female were all associated with greater prosocial behavior.

Consistent with the evidence of culture being integral to well-being among Indigenous youth (Blacklock et al., 2020; Chandler & Lalonde, 1998; Cross et al., 2018; Gibbons et al., 2018), we identified a number of Indigenous-specific determinants of well-being that are unique to First Nations children. While these are initial findings of promotive factors among preschool-aged First Nations children, the positive influence of these Indigenous-specific determinants has been reported with regard to older children's well-being. For example, in a study with 9 to 16-year-old Indigenous youth living on-reservation in the USA, Yoder et al. (2006) found that greater involvement in traditional cultural activities, a stronger cultural identity, and spirituality were all associated with lower levels of suicidal ideation. Similarly, in a study of 11 to 19-year-old First Nations youth living in their own community, Flanagan et al. (2011) found that a stronger First Nations identity was associated with lower levels of physical and relational aggression.

There could be a few reasons why being taught an Indigenous culture was associated with fewer parent or other caregiver reports of total difficulties in First Nations preschool-aged children. One, the cultural teachings and knowledge may have directly contributed to the children's well-being. For example, many First Nations cultures espouse the importance of connectedness with family, community, and land (Halseth & Greenwood, 2019). Cultivating a strong sense of belonging in early life could promote a sense of identity which can contribute to well-being in First Nations children. A sense of belonging may be especially important in the Indigenous context in which colonial assimilation efforts attempted to eradicate Indigenous cultural and

personal identities (Burack & Schmidt, 2014). Indeed, 82% of off-reserve Indigenous Peoples totally or somewhat agree that initiatives must be taken to protect their Indigenous cultures from external influences (Enviroics Institute, 2010). Two, children who are taught an Indigenous culture may also have access to resources (e.g., nurturing adults) who transmit cultural information, which could in turn positively impact their socioemotional and behavioral well-being.

We also found that children whose parents or other caregivers rated their communities as having high community cohesion were reported to have fewer total difficulties. Families that live in communities with greater cohesion could have greater access to kin which could positively influence children's development and well-being since they have multiple caregivers to look after them in case of a less nurturing primary caregiver (Muir & Bohr, 2019). Although our study participants lived off-reserve—and therefore were potentially distant from kin—the majority of off-reserve First Nations individuals consider their urban city 'home', and maintain a close connection with other First Nations individuals in their urban city (Enviroics Institute, 2010). Moreover, Indigenous Peoples living off-reserve may have a more encompassing definition of who belongs to their community (i.e., family, friends, other Indigenous Peoples in the city, co-workers, Indigenous friendship or healing centers, or Indigenous Peoples from their band) in comparison to those living on-reserve (Enviroics Institute, 2010). Accordingly, living in communities where members are well-connected may have positive impacts on their socioemotional and behavioral well-being.

The finding that the absence of parent or other caregiver family separation (due to removal from home by child welfare agencies, church, or government officials) was also associated with fewer total difficulties is not surprising. This finding is consistent with evidence that offspring with parents and/or grandparents who attended IRS have poorer psychological well-being (Hackett et al., 2016), a history of childhood abuse (Elias et al., 2012), and higher suicidal ideation (Elias et al., 2012; Hackett et al., 2016). Additionally, since children were not exposed to positive role modeling in IRS and formed dysfunctional relationships with adults during formative years, survivors of IRS struggled with parenting in their adult life (Burack & Schmidt, 2014). Indeed, offspring of survivors of residential schools noted that they had negative relationships with maternal figures that, in turn, negatively impacted their well-being (Roy & Thurston, 2015) and their own ability to parent (Ussher et al., 2016).

We also identified a number of non-Indigenous-specific determinants of well-being in First Nations children including better parental or other caregiver health, parental or other caregiver nurturance, smaller household size, higher household income, older child age, and being female. These findings are consistent

with other studies conducted among Indigenous children. For example, among 5-year-old Aboriginal children in Australia, being female, having private health insurance, and high maternal education (proxies for household income) were all associated with better social and emotional development (Williamson et al., 2019). Other researchers have found that positive parent–child relationships (Kaspar, 2013; Silburn et al., 2007) and better parental health (Silburn et al., 2007; Whitbeck et al., 2006) are associated with less psychopathology among Indigenous children and youth. Fewer data are available on the association between household size and Indigenous children's mental health. However, among 2 to 5-year-old Inuit children, Kohen et al. (2015) found that parent-reports of crowded housing were associated with greater offspring emotional and conduct problems (Kohen et al., 2015). Other studies in non-Indigenous children have also demonstrated an association among higher household size and children or youth mental health issues (Ozer et al., 2008; Patil et al., 2013; Reynolds-Salmon et al., 2024). In comparison, other studies among high-income samples have shown that higher household size may be protective against the development of offspring psychopathology (Bayer et al., 2008; Grinde & Tambs, 2016). Differences may be because First Nations and other ethnic minority children are more likely to live in crowded housing (Government of Canada, 2017) which can limit individual parent–child support, lack quiet and comfortable spaces, and increase the spread of communicable diseases (Reynolds-Salmon et al., 2024). This evidence highlights that First Nations and non-First Nations children may share some similar determinants of positive socioemotional and behavioral well-being.

High levels of prosocial behavior were associated with being taught an Indigenous culture and living in a community with high cohesion. Data on the prosocial behavior on Indigenous children in Canada and around the world are very scarce. One study of 119 Aboriginal youth aged 12–17 years old living in Australia found that physical activity and having a family member that the youth could talk to were associated with greater levels of prosocial behavior (Young et al., 2019). Being taught an Indigenous culture could be associated with greater prosocial behavior as the child may have access to caring, trusting adults. Indeed, positive relationships with caring adults have been shown to be a potent predictor of resilience among Indigenous youth (Andersson & Ledogar, 2008). Similarly, living in a community rated to have high community cohesion may allow children more opportunities to share, interact with peers, and engage in prosocial relationships.

Speaking an Indigenous language was not associated with fewer total difficulties nor with prosocial behavior in the children. This finding was somewhat unexpected since speaking an Indigenous language can represent cultural revitalization and is foundational to positive

well-being among many First Nations cultures. Indeed, in a review of 130 studies, Whalen et al. (2022) found that the majority of studies (62.1%) reported positive health outcomes with Indigenous language use (Whalen et al., 2022). Specific examples include associations between knowledge of an Indigenous language and more positive mental health (Hodge & Nandy, 2011), lower rates of past-month drug use (Greenfield et al., 2018), and lower rates of suicide (Hallett et al., 2007). However, these were studies of adult participants, who may be more likely to benefit from learning an Indigenous language to build and maintain relationships, increase social capital, and pass on traditional knowledge, as compared to preschool children who may be too young to properly grasp the language or reap the benefits of it. Indeed, in a study of 6- to 14-year-old Indigenous children living off-reserve in Canada, Kaspar (2013) found that speaking an Indigenous language at home or school was not protective against the development of psychological or nervous difficulties. Another reason for our null finding could be that our measure of speaking an Indigenous language did not accurately distinguish among levels of language learning, knowledge, and application. Since better language proficiency is associated with lower prevalence and severity of mental health problems (Montemitro et al., 2021), aggregating children of varying levels into a single group may mask any potential associations between knowledge of an Indigenous language and well-being.

While we identified a number of variables associated with socioemotional and behavioral well-being, our observed effect sizes were small ( $\beta = \pm .01-.20$ ). Furthermore, our adjusted model only explained 12% and 9% of the variance in total difficulties and prosocial behavior, respectively, among First Nations children. Our effect sizes are comparable to other studies of Indigenous children and youth that have examined associations between socioemotional and behavioral well-being and enculturation ( $\beta = -.20$ ) (Yoder et al., 2006), nurturing parenting styles ( $\beta = -.35$ ) (Kaspar, 2013), and household income ( $\beta = -.02$ ) (Mykota & Schween, 2006).

The strengths of this study include the use of nationally representative data from the largest dataset available in Canada on First Nations children living off-reserve. Additionally, we focused on positive aspects of well-being, an approach that is rarer in the Indigenous health literature. We also acknowledged both Indigenous- and Western-based ways of knowing by identifying Indigenous-specific determinants in addition to non-Indigenous-specific factors associated with socioemotional and behavioral well-being to provide a more complete description of First Nations preschool-aged children's well-being. Moreover, by providing disaggregated data for First Nations children living off-reserve, we support the development of targeted, context-specific solutions and interventions. Finally, by focusing on young children and examining factors promoting their

well-being, we align with and honor First Nations worldviews that prioritize the health and security of young people (Greenwood, 2005).

This study also had some limitations. One, its cross-sectional nature precluded us from drawing conclusions about developmental pathways in preschool-aged children. Two, the ACS was conducted in 2006 and so it may not be as informative about the contemporary lives of Indigenous Peoples and their connections with culture and socioemotional and behavioral well-being. However, the ACS is the only nationally representative survey of off-reserve First Nations children in Canada and includes the most recent data on socioemotional and behavioral well-being among young children. Future studies can examine how present-day Indigenous cultural revitalization and implementation of the 94 Calls to Action have impacted the well-being of Indigenous preschool-aged children. Three, since the ACS did not include a measure of gender identity, we were unable to assess the influence of being two-spirit on children's well-being. Gender identity and its impact on the socioemotional and behavioral well-being of Indigenous children should be an area of further inquiry. Four, we used parent or other caregiver reports of children's socioemotional and behavioral well-being rather than structured diagnostic interviews. However, the SDQ has been shown to be correlated with psychiatric diagnoses based on the International Classification of Diseases, Tenth Edition (ICD-10; World Health Organization, 1992), especially conduct, oppositional defiant, attention-deficit/hyperactivity, and some anxiety disorders (Goodman et al., 2000). Five, the prosocial behavior subscale was below the satisfactory cut-off for internal reliability ( $\alpha = .70$ ). However, internal reliability still met or approached the cut-off appropriate for exploratory research. In the absence of other reliable measures to examine a widely understudied topic, utilizing the SDQ can further our understanding of positive socioemotional and behavioral well-being. Other studies should continue to partner with Indigenous communities and invest in tailoring measures relevant to the community. Six, the missing data in our measure of intergenerational trauma (parent/other caregiver being removed from the home by child welfare agencies, church, or government officials) was high (44.4%). However, this was the only variable that captured intergenerational trauma in the ACS and so its inclusion allowed for a more complete understanding of First Nations socioemotional and behavioral well-being. By including this variable, we are also able to compare to other studies that have also examined the impact of parents' and grandparents' removal from homes on the well-being of subsequent generations (Bombay et al., 2014; Walls & Whitbeck, 2012). Seven, since our pattern of missing data was not missing completely at random, the results may be biased. However, we attempted to minimize the threats to validity by having a large sample size and using a nationally

representative sample. Eight, our effect sizes were small, suggesting that these associations may be most relevant at a population rather than an individual level. Still, detecting these associations in childhood, even if small, can have an impact if intervened upon, particularly given the importance of early intervention.

Using cross-sectional data from the largest, nationally representative survey of young First Nations children in Canada, we found that both Indigenous-specific (e.g., being taught an Indigenous culture, living in a community with high cohesion, and parent or other caregiver not experiencing family separation) and non-Indigenous-specific (e.g., very good/excellent parental or other caregiver health, parental or other caregiver nurturance, smaller household size, greater household income, older child age, and female sex) factors were associated with positive socioemotional and behavioral well-being of 2 to 5-year-old First Nations children living off-reserve. These findings, in support of the ecobiodevelopmental framework, are further evidence of the extent to which the intergenerational transmission of Indigenous culture is essential to the well-being of First Nations children even, or especially, for those who live off-reserve. These data can guide First Nations community members, policymakers, and researchers in leveraging these cultural factors, along with non-Indigenous-specific determinants, and identifying targets for intervention to promote healthy child socioemotional and behavioral well-being. These interventions can help maximize and sustain positive well-being in First Nations preschool-aged children, their families, and communities.

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Funding for this project was received through the Canadian Research Data Centre Network.

## DATA AVAILABILITY STATEMENT

The data, analytic code, and materials necessary to reproduce the analyses presented here are not publicly accessible. The analyses presented here were preregistered in the accepted letter of intent for Child Development Special Section: Highlighting Indigenous Child Development: Edges and Possibilities in State-of-the-Art Research.

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