

Exploring alternate specifications to explain agency-level effects in placement decisions regarding Aboriginal children: Further analysis of the Canadian Incidence Study of Reported Child Abuse and Neglect Part C

Barbara Fallon - Factor-Inwentash Faculty of Social Work, University of Toronto

Martin Chabot - Centre for Research on Children and Families, McGill University

John Fluke - Child Protective Services Research Center, American Humane Association, and Kempe Center for the Prevention and Treatment of Child Abuse and Neglect, University of Colorado

Cindy Blackstock - First Nations Child and Family Caring Society of Canada; Faculty of Extension, University of Alberta

Vandna Sinha - Centre for Research on Children and Families, McGill University

Kate Allan - Factor-Inwentash Faculty of Social Work, University of Toronto

Bruce MacLaurin - Faculty of Social Work, University of Calgary

Abstract

A series of papers using data from the Canadian Incidence Study of Reported Child Abuse and Neglect (CIS) explored the influence of clinical and organizational characteristics on the decision to place Aboriginal children in out-of-home placements at the conclusion of child maltreatment investigations. The purpose of this paper is to further explore a consistent finding of the previous analyses: the proportion of investigations involving Aboriginal children at a child welfare agency is associated with placement for all children in that agency. CIS-2008 data were used in the analysis, which allowed for inclusion of previously unavailable organizational and contextual variables. Multilevel statistical models were developed to analyze the influence of clinical and organizational variables on the placement decision. Final models revealed that the proportion of investigations conducted by the child welfare agency involving Aboriginal children was again a key agency-level predictor of the placement decision for any child served by the agency. Specifically, the higher the proportion of investigations of Aboriginal children, the more likely placement was to occur for any child. Further, this analysis demonstrated that structure of governance, an organizational-level variable not available in previous cycles of the CIS, is an important agency-level predictor of out-of-home placement. Further analysis is needed to fully understand individual and organizational level variables that may influence decisions regarding placement of Aboriginal children.

Introduction

A series of papers using data from the Canadian Incidence Study of Reported Child Abuse and Neglect (CIS) (Chabot et al., 2013; Fallon et al., 2013; Fluke, Chabot, Fallon, MacLaurin, & Blackstock, 2010) have explored the influence of clinical and organizational characteristics on the decision to place Aboriginal children in out-of-home placements at the conclusion of child maltreatment investigations. These prior multilevel analyses, based on data collected in the 2003 cycle of the Canadian Incidence Study on Reported Child Abuse and Neglect (CIS), found that children were at increased likelihood of being placed in out-of-home care if served by a child welfare agency with a high proportion of investigations involving Aboriginal children. The 2008 cycle of the CIS included a broader range of contextual factors such as the array of services agencies provided, the use of differential response or alternative dispute resolution models, agency structure of governance, on and off reserve service provision and community remoteness.

The principal goals of this paper are to assess the robustness of findings from prior studies and determine whether the proportion of investigations involving Aboriginal children may have acted as a proxy for organizational and contextual variables included in CIS-2008. Few child welfare studies have systematically collected organizational information and, accordingly, the inclusion of these variables will add to our understanding of the decision-making ecology shaping child-welfare decisions and, more specifically, the overrepresentation of Aboriginal children in out-of-home care. Understanding the reasons for the increasing numbers of Aboriginal children in out of home care remains one of the most pressing and important issues for Canadian child welfare systems (Canadian Council of Child and Youth Advocates, 2014).

Literature Review

Overrepresentation of Aboriginal Children in Canadian Child Welfare

In Canada, Aboriginal children are overrepresented at all points of child welfare decision-making: investigation, substantiation and placement in out-of-home care (Auditor General of Canada, 2008; Blackstock, Prakash, Loxley & Wein, 2005; McKenzie, 1997; Royal Commission on Aboriginal Peoples, 1996; Trocmé, Knoke, & Blackstock, 2004). This overrepresentation likely results from a complex array of factors, including historical and contextual factors, the marginalization of Aboriginal children and families in Canada, and the structure and services provided by child welfare agencies. The most reliable source of data on Aboriginal children in the Canadian child welfare system comes from the Canadian Incidence Study of Reported Child Abuse and Neglect (Public Health Agency of Canada, 2010; Trocmé et al., 2005, 2001). This cross-sectional study has been conducted in five-year cycles and includes data on initial child protection investigations in Canada, including key service decisions and dispositions (i.e., substantiation, transfer to ongoing services, referrals to internal/external support services, out-of-home placement).

The CIS identifies the Aboriginal cultural group of the child as disaggregated by the three major cultural groups of Aboriginal peoples recognized by the Canadian constitution: Métis, Inuit and First Nations. Given the rich diversity of First Nations, Métis and Inuit nations in Canada, the preferred protocol is to situate the research as specifically as possible to affected groups. Thus the term Aboriginal is only used in this paper when describing the collective experiences of First Nations, Métis and Inuit and more specific descriptors of First Nations, Métis and Inuit are used whenever possible to respect their distinct cultures, histories and contexts.

Analysis from CIS-2008 revealed that First Nations children living in the geographic areas served by sampled agencies were 4.2 times more likely than non-Aboriginal children to be reported for maltreatment-related concerns (Sinha, Ellenbogen, & Trocmé, 2013). Based on national census data for 2008, Aboriginal children represented 6% of children in Canada and 22% of substantiated reports of child maltreatment in Canada (Trocmé et al., 2010). The significantly higher rate of substantiated investigations involving First Nations children may be explained through a large number of differences at the level of the caregiver (Sinha et al., 2013). Single parenthood and inadequate housing increased the odds of substantiation for investigations involving First Nations children but not for investigations involving non-First Nations children, suggesting associations between specific case factors and substantiation may vary across ethno-racial groups (Sinha et al., 2013). In addition to overrepresentation at the reporting and the substantiation decision stages, Aboriginal children comprise 40% of all children in out-of-home care (Sinha, 2014).

The long history of oppression caused by assimilation policies in Canada has led to an accumulation of disadvantages including high rates of infant mortality and disease, low levels of school performance, high dropout rates, and other health, economic and social disadvantages for First Nations families (Bombay, Matheson, & Anisman, 2014; Filbert & Flynn, 2010). Aboriginal families are more likely to live in poverty and have inadequate housing than other Canadians (Auditor General of Canada, 2011; Loppie-Reading & Wien, 2009; National Council on Welfare, 2008). Given that Aboriginal peoples continue to be disproportionately affected by structural inequalities relating to housing, poverty and cultural dislocation, it is unsurprising that Aboriginal children are particularly overrepresented in investigations in which neglect, largely fueled by systemic disadvantage, is the sole concern (Carter, 2010). While Aboriginal children comprise a small proportion of the child population in Canada, 26% of neglect investigations involved Aboriginal children (Trocmé et al., 2013).

Impact of Case Characteristics on Child Welfare Decisions

It is possible that certain case characteristics account for the significant overrepresentation of Aboriginal children in the child welfare system. Case characteristics refer to those clinical concerns about the child (e.g., child mental health issue), family (e.g., caregiver substance abuse), the maltreatment incident (e.g., type, presence of physical or emotional harm), and the environment (e.g., poor housing, lack of services) (Shdaimah, 2009; Sullivan & Charles, 2010). Research from the CIS suggests that while certain case characteristics (e.g., maltreatment type, child functioning concerns, physical or emotional harm) do not account for the significant overrepresentation of Aboriginal children in out-of-home placements, case characteristics more reflective of systemic issues help explain this overrepresentation (e.g., poverty, poor housing, and parental substance misuse) (Trocmé et al., 2005, 2004). It seems that these factors, when coupled with inequitable resources for First Nations children residing on reserves, have resulted in the overrepresentation of Aboriginal children in the Canadian child welfare system (Auditor General of Canada, 2008, 2011; Standing Committee on Public Accounts, 2009).

Impact of Organizational and Worker Factors on Child Welfare Decisions

Given the diversity among workers and child welfare organizations, there is an implicit assumption that worker and organizational characteristics influence child welfare decision-making (Fallon et al., 2013; Benbenishty, Segev, & Surkis, 2002). However, there is little empirical evidence on worker and organizational decision-making factors given measurement challenges associated with isolating specific worker characteristics, the use of case vignettes as opposed to actual child welfare data, and difficulties in delineating and clarifying organizational factors (Ashton, 2007; Drasgow & Schmitt, 2002; Grasso & Epstein, 1988; Hoagwood, 1997; Hollingsworth, Bybee, Johnson, & Swick, 2010; Yoo, 2002).

Organizational characteristics refer to those characteristics of child welfare service providers that are expected to have an influence on practice, such as agency structure, geographic location of the agency, and model of practice. It is expected that characteristics of a child welfare organization will influence decision-making at all points of the child welfare service continuum, including reporting, substantiation, and placement decisions. Organizational variables that have been found to influence child welfare reporting include the presence of an expressed mandate to report, worker involvement in decisionmaking, and the combination of an expressed mandate and negative sanctions for failing to report; however, agency size was not found to impact reporting (Ashton, 2007). There is conflicting evidence on whether organizational factors impact workers' assessment of risk or decisions regarding intervention (Darlington, Healy, & Feeney, 2010; Hollingsworth et al., 2010). While there is evidence to suggest that intervention decisions may be impacted by the national, regional and jurisdictional context in which organizations operate, few studies have been able to account for organizational factors when examining service decisions because of a failure to control for differences in the population served and all clinical factors (Giovannoni & Becerra, 1979; Grinde, 2007; Johnson & L'Esperance, 1984; Rossi, Schuerman, & Budde, 1999; Schuerman, Rossi, & Budde, 1999; Wolock, 1982). The decision to provide ongoing services and respond to the needs of vulnerable families, particularly overrepresented populations, is an important service decision with significant resource implications (Blackstock, 2009; Chabot et al., 2013).

The Decision Making Ecology

Given the diversity among workers and child welfare organizations, there is an implicit assumption that worker and organizational characteristics influence child welfare decision-making (Fallon et al., 2013; Benbenishty, Segev, & Surkis, 2002). However, there is little empirical evidence on worker and organizational decision-making factors given measurement challenges associated with isolating specific worker characteristics, the use of case vignettes as opposed to actual child welfare data, and difficulties in delineating and clarifying organizational factors (Ashton, 2007; Drasgow & Schmitt, 2002; Grasso & Epstein, 1988; Hoagwood, 1997; Hollingsworth, Bybee, Johnson, & Swick, 2010; Yoo, 2002).

Organizational characteristics refer to those characteristics of child welfare service providers that are expected to have an influence on practice, such as agency structure, geographic location of the agency, and model of practice. It is expected that characteristics of a child welfare organization will influence decision-making at all points of the child welfare service continuum, including reporting, substantiation, and placement decisions. Organizational variables that have been found to influence child welfare reporting include the presence of an expressed mandate to report, worker involvement in decisionmaking, and the combination of an expressed mandate and negative sanctions for failing to report; however, agency size was not found to impact reporting (Ashton, 2007). There is conflicting evidence on whether organizational factors impact workers' assessment of risk or decisions regarding intervention (Darlington, Healy, & Feeney, 2010; Hollingsworth et al., 2010). While there is evidence to suggest that intervention decisions may be impacted by the national, regional and jurisdictional context in which organizations operate, few studies have been able to account for organizational factors when examining service decisions because of a failure to control for differences in the population served and all clinical factors (Giovannoni & Becerra, 1979; Grinde, 2007; Johnson & L'Esperance, 1984; Rossi, Schuerman, & Budde, 1999; Schuerman, Rossi, & Budde, 1999; Wolock, 1982). The decision to provide ongoing services and respond to the needs of vulnerable families, particularly overrepresented populations, is an important service decision with significant resource implications (Blackstock, 2009; Chabot et al., 2013).

The Decision Making Ecology

Our overarching theoretical framework for the study is the Decision Making Ecology (DME) (Baumann, Dalgleish, Fluke, & Kern, 2011; Baumann, Fluke, Dalgleish, & Kern, 2014; Fluke et al., 2010). As defined the DME describes case, individual (i.e., caseworker), organizational and external factors that act in complex ways to result in the pattern of decision-making over time that describes the characteristics of a service delivery system.

While all four factors influence decisions, the psychology of the decision-making process can be broken into two interacting, but semi-independent functions; the assessment, and the action. Case factors have been shown to influence the assessment of individual cases, sometimes referred as the level of concern. The other factors (individual, organizational, and external) are hypothesized to influence the willingness of the individual (or group) that is making the decision to take action (e.g., to place a child), sometimes referred to as the action threshold (Dalglish & Drew, 1989). For this study we examine case factors hypothesized to be associated with the level of concern, and organizational factors that influence action. Analyses are conducted using multilevel procedures at the case and organizational level. We hypothesize that children are more likely to be placed in agencies that serve a relatively high proportion of Aboriginal children. Furthermore, as we discovered in prior analysis, there may be organizational influences that are unmeasured (Chabot et al., 2013). This paper tests whether previously unavailable organizational factors influence the likelihood of placement.

Methods

The CIS-2008 is the third, and most recent, cycle of the CIS. The primary objective of the CIS-2008 is to produce a Canadian estimate of the incidence of child maltreatment in 2008. Using a multistage sampling design, a representative sample of 112 child welfare sites was selected from 412 child welfare organizations in Canada; twenty-three of these were Aboriginal organizations. CIS-2008 included approximately one quarter of the Aboriginal-managed child welfare organizations with authority to conduct child welfare investigations in Canada whereas there were only eight such organizations in CIS-2003 and three in the CIS-1998. The second sampling stage involved selecting cases opened at the study sites during the three month period from October 1, 2008 to December 31, 2008. Screened-in investigations were evaluated to ensure that they met the CIS-2008 definitions of maltreatment. Investigations where child maltreatment was alleged/suspected or the possibility of future maltreatment was assessed during the investigation were included in the sample. These procedures yielded a final sample of 15,980 children aged 0 to 15 years who were investigated because of maltreatment-related concerns.

To further investigate the role of proportion of Aboriginal investigations in placement decisions, a secondary analysis of the CIS-2008 dataset was conducted. As with the 1998 and 2003 CIS cycles, the dataset contains rich information about key clinical factors collected during the course of child maltreatment investigations, including the characteristics of the child, the family and the context in which they are living. Information was also collected regarding the worker who conducted the investigation and the organization within which the worker operated.

Table 1
 Level 1 measures.

Measures	Definition	Coding
Physical harm	Defined as no harm, or at least one of: bruises/cuts/scrapes, burns and scalds, broken bones, head trauma, other health conditions.	1, some type of physical harm noted 0, no harm
Mental/emotional harm	Defined as mental or emotional harm caused by the investigated maltreatment. The child harmed by the action/inaction of caregiver.	1, some type of emotional harm noted 0, no harm
Cooperation level	Workers indicated whether or not the caregivers were cooperative with the investigation. If any caregiver was deemed not cooperative, then the household level of cooperation was not cooperative.	1, cooperative 0, not cooperative
Ethnicity	Ethno-racial categories developed by Statistics Canada for the 2006 Canadian Census.	1, Aboriginal (Métis and Inuit excluded) 0, non-Aboriginal

Data Collection Instruments

The information was collected using a three-page data collection instrument consisting of an Intake Face Sheet, a Household Information Sheet, and a Child Information Sheet. Data collected by this instrument included the following: type of abuse and neglect investigated; level of substantiation and duration of maltreatment; physical and emotional harm to the child; functioning concerns for the children and their caregivers; housing information, and information about short-term service dispositions. The CIS-2008 study also asked child welfare workers completing the maltreatment investigations to complete a self-report questionnaire that included questions about their age, caseload size, academic credentials, years of experience in social services and child protection, and if they had received additional training in the course of their child protection experience. In addition, information on organizational size and location was collected for the 112 participating sites. Outside Quebec, sites completed an Organizational Questionnaire that included many more organizational questions than were asked in prior CIS studies. These included questions about the structure of the organization,

minimum qualifications for caseworkers, worker morale, computerization of case file information system, and workplace overcrowding. Accordingly, the CIS-2008 allows for examination of multiple units of analysis, including the two utilized in this study: child maltreatment investigations and child welfare organizations.

A subsample of investigations is used in this analysis. Only investigations in which maltreatment is substantiated and the case remained open for ongoing services are included, in order to examine predictors of placement in out-of-home care. To allow comparability with previous CIS cycles, cases from Quebec and cases investigated for exposure to domestic violence were excluded from this analysis. A final sample of 1,710 substantiated maltreatment investigations opened to ongoing child welfare services is used in this analysis.

Variables Included in Present Analysis

Key clinical and organizational variables were included in the model to reflect an ecological approach to understanding child maltreatment and child welfare service decisions. This approach allows for an understanding of the relative contribution of clinical variables and variables that, in principle, should be extraneous to the case disposition (specifically worker and organizational variables).

Outcome Variable. Workers were asked to indicate whether the child subject of the investigation was placed in out-of-home child welfare care at the conclusion of the initial investigation. The variable used in this analysis is dichotomous (formal placement, no placement).

Level 1: Clinical Variables. Clinical variables (e.g., severity of physical and emotional harm) were selected based on literature that identifies the key clinical factors associated with child maltreatment and risk of future child maltreatment. Comparability with our previous analyses was also a determining factor (Table 1)

Level 2: Organizational Variables. A binary variable identifying those agencies with greater than 45% of investigations involving Aboriginal children was created based on prior analysis showing this to be the optimal cut point based on the univariate effect of the variable in the 1998 and 2003 cycles.

For this analysis, organizational variables were available that were not included in previous cycles: structure of governance; nature of services offered; presence of differential/alternate response to investigations; whether there is the possibility of an alternative dispute resolution and the availability of on-reserve services for Aboriginal populations. In addition to the variables available in the CIS-2008, a measure of remoteness was derived using the 2006 Canadian census (Table 2).

Table 2
 Level 2 measures.

Measures	Definition	Coding
Proportion of Aboriginal investigations	The proportion of all investigations agencies conduct which involve Aboriginal children	1, agencies with 45% or more investigations involving Aboriginal children 0, agencies with less than 45% of investigations involving Aboriginal children
Structure of governance	Whether the agency is administered by the provincial government or by a community agency that receives provincial funding	1, government-run 0, community-run
Array of services	Whether the agency provides a range of social services or strictly provides child protection services	1, array of services 0, child protection only
Differential response	The agency operates a Differential/Alternate Response as well as an Investigation Response	1, yes 0, no
Alternative dispute resolution	Office uses Alternative Dispute Resolution approach with families	1, yes 0, no
On reserve	Agency services Aboriginals on reserve	1, yes 0, no
Remoteness	The geographic remoteness of the agency based on census data	1, yes 0, no

Analysis Plan

Multi-level logistic regression was used to analyze the subsample of CIS-2008 investigations. Multi-level statistical models allow for analysis of the influence of clinical and organizational variables on placement decisions. MPlus software was used to produce model estimates. MPlus allows for dichotomous outcome variables that are more reflective of decision-making in child welfare and facilitates the specific use of the logistic

link function for binary outcome variables under maximum likelihood estimation using multiple imputation to correct bias due to missing data.

Prior to the parametric modeling, a descriptive analysis of the multilevel structure was conducted where the proportion of agency placement and a continuous version of our principal independent variable, proportion of Aboriginal investigations were analyzed. Four of the five organizational variables (government-run, array of service, differential response and service on reserve) were distributed in a similar fashion across the placement and the principal predictor. This produced the means of two continuous indicators for both the presence and absence of each of the four agency level factors.

Next, the regressions were ordered by the absolute t-value of the coefficient of the first-level variable Aboriginal status which revealed that the models' result set is divided in two, with the first half all including a term for proportion of Aboriginal investigations. Disproportionality of the decision to place Aboriginal children is the main motivation for these series of studies, and this reinforces the conclusion from the previous analyses (Fallon et al., 2013; Fluke et al., 2010) as to the centrality of that indicator. The global portrait that emerged was that proportion of Aboriginal reports and government-run agency governance clearly dominated the pool of explanatory variables, even when subsampling for type of agency, i.e., Aboriginal vs. non-Aboriginal. These two strongest predictors were paired with the other five predictors to generate ten models. All models were fitted on 50 multiple imputation datasets using Mplus 7.1 (Muthén & Muthén, 1998–2012). An intraclass correlation was also calculated in order to determine an estimate of the proportion of the variance available at the second level using the "latent variable method" (Goldstein, Browne, & Rasbash, 2002).

Table 3
 Characteristics of variables in the analysis ($n = 1,710$).

Dependent variable: Placement	Measures			
	Yes		No	
	Frequency	%	Frequency	%
Level 1 variables				
Physical harm noted	238	13.92%	1472	86.08%
Mental/emotional harm noted	757	44.27%	953	55.73%
Caregivers cooperative	1376	80.47%	334	19.53%
Aboriginal identity child	559	32.66%	1151	67.31%
Level 2 variables				
Proportion of Aboriginal investigations (>45% of investigations)	478	27.95%	1232	72.05%
Government-run	938	54.85%	772	45.15%
Array of services	847	49.53%	520	30.41%
Differential response	1177	68.83%	510	29.82%
Alternative dispute resolution	1061	62.05%	473	27.66%
On Reserve	537	27.66%	1125	62.05%
Remoteness	782	45.73%	786	45.96%

Results

Table 3 presents descriptive statistics for the variables included in the multi-level analysis using the subsample of 1,710 substantiated maltreatment investigations opened to ongoing child welfare services used in this paper. Approximately one-third (28%) of these investigations originated from agencies where 45% or more of the total investigations involved Aboriginal children. Slightly more than half (55%) of these investigations originated from an agency that was government run. The majority (69%) originated from agencies that utilized differential response just under 28% originated from agencies located on First Nations' reserves.

Fourteen percent of all investigations were substantiated and referred for ongoing services. Of these investigations, physical and mental/emotional harm was noted in almost half of the cases (44%). Most investigating workers described the caregivers as cooperative (80%). Overall, approximately one-third (33%) of investigations involved Aboriginal children.

As a check, four organizational variables were found to distribute themselves in a similar fashion across the placement and the principal predictor. Correlations for these four data points are 0.92 for the presence category and 0.96 for the absence category. This in itself is indicative of a relevant pool of variables, again strongly supporting the centrality of proportion of Aboriginal investigations, and lends credibility to these organizational indicators as possible contextual factors that may clarify the role of the proportion of Aboriginal investigations variable.

The final models are presented in Table 4. Models 1 and 2 include proportion of Aboriginal investigations and government run agency governance respectively, and Models 3 and 4 consist of these combined together with their interaction. It appears that there are additive effects from Models 1 and 2 to Model 3, but Model 4 is not linear in form.

The final model which is presented in Table 4 reveals the strength of the association of the two main second level variables with child placement. In Model 1, the proportion of Aboriginal reports at an agency level is significantly related to the placement decision ($p = .01$). In Model 2, government-run agency governance is also significantly related to placement ($p = .006$). Both remain highly significant in Model 3 and Model 4, the interaction between these two second level variables is not significant, indicating that each organizational level variable has an independent effect. The intraclass correlation is 0.26, although this correlation is difficult to interpret in a binary context. The mitigation of the first level Aboriginal status of the child and the proportion of Aboriginal investigations is the more compelling result.

Discussion

The present analysis of CIS-2008 data is consistent with findings exploring the role of organizational variables in previous cycles of the study (Chabot et al., 2013; Fallon et al., 2013; Fluke et al., 2010). Investigations are more likely to result in out-of-home placements in agencies serving large proportions of Aboriginal children (45% or more of investigations at agency involve Aboriginal children). Based on our previous work (Chabot et al., 2013), we hypothesized that contextual factors may explain this disparate placement decision-making. In the present analysis, we incorporated additional factors at the organizational level to explore this hypothesis. After performing multiple tests of these other factors, the proportion of Aboriginal investigations remains a central and important main organizational level effect in our models.

Our analysis tested other organizational level factors to see if they substitute for, or operate in conjunction with the proportion of Aboriginal investigations. According to the statistical models presented above, the most important of these is whether the provincial government operates the child welfare agency. As with the proportion of Aboriginal children on the caseload, the risk of a child being placed is greater in government-run agencies compared to agencies with a more autonomous structure.

Interestingly, there tends to be higher Aboriginal caseloads and higher than average placement rates in situations where the provincial government directly provides child welfare services. From other studies, disparities in aggregate rates of placement at the provincial level for First Nations compared to non-Aboriginal children are very large, approaching differences of 10 to 1 in provinces that directly operate child welfare agencies (Sinha, 2014).

However, when government-run and Aboriginal caseload variables are both included in the models, both are statistically significant. Part of the explanation appears to be the disparate use of placement in provincially-run agencies. It remains unclear how policy differences in governmental versus non-governmentally operated agencies result in these disparities and precisely how these interact with the proportion of Aboriginal investigations. However, we return to earlier observations regarding the possible difficulties of funding (Blackstock, 2009). In addition, the results for provincially-operated agencies may reflect difficulties in developing broad based and culturally appropriate community supports for families, and the possible challenges this may present for governmental agencies in contrast to community based agencies. This may be especially problematic for provincial agencies that serve relatively large Aboriginal caseloads. It appears that the threshold for action as delineated in the DME (Baumann et al., 2011; Baumann et al., 2014; Fluke et al., 2010) is lower for agencies that are either government-run or have a high proportion of Aboriginal investigations.

Some factors that we originally anticipated may explain the higher placement rates of Aboriginal children in Aboriginal and government child protection agencies did not. This is especially true of the remoteness composite wherein we assumed that remote communities would have fewer services available contributing to higher levels of child welfare placement. In our previous analysis, we had also assumed that a measure of remoteness could potentially address the influence of community poverty on the placement decision. Our analysis of the CIS-2008 data refuted this assumption (Fallon et al., 2013; Fluke et al., 2010). Interestingly, the use of alternative dispute resolution and differential response were not statistically significant in the presence of our other factors, but were explanatory on their own and associated with lower placement risk. These two organizational variables were less common in agencies with high Aboriginal caseloads and government run services. This suggests that structural practices and policies like these may have some potential to reduce placement risk more generally if operationalized in agencies with larger Aboriginal caseloads.

Aboriginal status of the child at the individual level was not significant in this analysis or the analysis conducted with CIS-1998 data. However, Aboriginal status of the child was determined to be significantly related to the placement decision in our analysis of the CIS-2003 data. The reasons for this difference from data collection cycle to cycle are unclear. The 2003 analysis could be an anomaly, given that for all three cycles the

placement decision is strongly influenced by organizational level factors related to Aboriginal caseload. It may be that there is more salient organizational effect for Aboriginal status than an individual one. Given that the CIS-2008 contained a much higher proportion of Aboriginal agencies than in previous cycles, the identification of Aboriginal caseload appears to be more of a robust finding compared to influences at the individual level.

Table 4
Model iterations.

	Model 1: Proportion of Aboriginal investigations				Model 2: Government-run agency				Model 3: Combined				Model 4: Full			
	B	s.e.	t-value	p-value	B	s.e.	t-value	p-value	B	s.e.	t-value	p-value	B	s.e.	t-value	p-value
Emotional harm noted	0.371	0.122	3.041	0.002	0.368	0.122	3.029	0.002	0.359	0.121	2.960	0.003	0.350	0.121	2.884	0.004
Physical harm noted	0.256	0.167	1.532	0.126	0.270	0.166	1.622	0.105	0.267	0.166	1.608	0.108	0.261	0.166	1.570	0.116
Family cooperative	-0.744	0.144	-5.183	0.000	-0.743	0.143	-5.180	0.000	-0.734	0.143	-5.132	0.000	-0.732	0.143	-5.116	0.000
Aboriginal identity child	0.015	0.158	0.097	0.922	0.171	0.149	1.147	0.251	0.013	0.156	0.085	0.932	-0.003	0.157	-0.021	0.983
Proportion of Aboriginal investigations (>45%) Government-run	0.775	0.317	2.447	0.014					0.925	0.288	3.209	0.001	1.210	0.402	3.010	0.003
Proportion of Aboriginal investigations × Government-run					0.732	0.266	2.749	0.006	0.866	0.247	3.498	0.000	1.033	0.296	3.490	0.000
													-0.543	0.538	-1.009	0.313

Strength and Limitations

The CIS is an excellent source of information for this type of analysis, since it reflects data on placement decisions from the investigating worker and it captures data on children at the initial investigation stage. However, study limitations should be considered given the cross-sectional nature of the data and that we did not control for the non-independence of siblings in the sample.

In this study, we chose to capture only the primary form of child maltreatment, which represents the child protection workers' overriding concern. However, co-occurrence of different types of maltreatment may also increase the likelihood of placement.

Limitations of CIS Dataset/Differences between 1998 and 2003 and 2008

Workers who were primarily responsible for conducting the child maltreatment investigation completed the data collection instrument at the conclusion of the investigation. These ratings were not independently verified, including the type of maltreatment investigated and the level of substantiation. It is possible that this could influence the variables examined in the analysis. Workers could first make decisions about the case and then complete the data collection instrument to justify their judgments, for instance by endorsing various risk factors to justify the decision to place a child in out-of-home care (or conversely, failing to endorse risk factors to justify discontinuing service to the family).

The conclusions made about the investigation as represented in the dataset usually reflected a time period of thirty days. Child functioning issues, caregiver functioning problems, and other key risk factors may not have been known to the investigating worker at the time the data collection instrument was completed. The non-Aboriginal group includes children that may be ethnically and racially diverse (approximately 10% of sample is not white or Aboriginal). Cases that were screened out by a child welfare authority or investigated only by the police were not included in the study. Cases that were known to a community member or maltreatment that was known only to the child were also not included in the dataset. These findings cannot be generalized to Québec as data from this province were not included in the analyses due to differences in data collection procedures in this province.

The primary objective of the CIS-2008 was to provide a reliable estimate of the incidence of child maltreatment in Canada. Although information was collected about workers and agencies, these variables were collected to provide context with respect to the primary objective. Thus, key concepts in the literature related to human resources, such as worker stress, worker burnout, and levels of social support were not measured. These factors are theorized in the literature as having influence in the delivery of child welfare services. The study was not designed to collect precise organizational measures and therefore the proportion of Aboriginal investigations is likely a proxy for a number of constructs including a lack of services and resources more often associated with Aboriginal child welfare agencies. More research is needed to develop more precise organizational measures that are able to deconstruct this contribution. Similarly, the organizational culture measure rating was assigned to the agency by the research assistant responsible for data collection versus being an internal rating of organizational culture and therefore may be inadequate.

There is clear evidence that Aboriginal children are overrepresented in the Canadian child welfare system and that both case and organizational level-factors influence the placement decision. Consistent with the CIS-1998 and 2003 analyses, a higher proportion of Aboriginal families served by an agency is associated with an increased likelihood of placement in the presence of clinical variables. Further analysis needs to be conducted to fully understand individual and organizational level variables that may influence decisions regarding placement of Aboriginal children. There is also a need for research that is sensitive to differences among and within Métis, Inuit and First Nations cultural groups and on and off reserve communities. The legacy of colonialism has left Aboriginal peoples disproportionately ranked among the poorest people in Canada living in the worst housing conditions (Wilson & Macdonald, 2010). Special attention should be given to exploring and addressing the multi-generational impacts of colonialism and discrimination through residential schools and the child welfare system (Blackstock & Trocmé, 2005), and to remedying outstanding inequities in child welfare resources for Aboriginal children and their families (Auditor General of Canada, 2008; Auditor General of Canada, 2011; Standing Committee on Public Accounts, 2009).

References

- Ashton, V. (2007). The impact of organizational environment on the likelihood that social workers will report child maltreatment. *Journal of Aggression, Maltreatment & Trauma*, 15(1), 1–18.
- Auditor General of Canada. (2008). First Nations Child and Family Services Program-Indian and Northern Affairs Canada. 2008 May: Report of the Auditor General of Canada. Retrieved from http://www.oag-bvg.gc.ca/internet/English/aud_choag_200805_04_e_30700.html#hd3a
- Auditor General of Canada. (2011). Programs for First Nations on reserve. June 2011 Status Report of the Auditor General of Canada. Retrieved from http://www.oag-bvg.gc.ca/internet/English/parl_oag_201106_04_e_35372.html
- Baumann, D. J., Dalgleish, L., Fluke, J., & Kern, H. (2011). *The Decision-Making Ecology*. Washington, DC: American Humane Association.
- Baumann, D. J., Fluke, J. D., Dalgleish, L., & Kern, K. (2014). The decision making ecology. In A. Shlonsky, & R. Benbenishty (Eds.), *From Evidence to Outcomes in Child Welfare: An International Reader* (pp. 24–40). New York, NY: Oxford University Press.
- Benbenishty, R., Segev, D., & Surkis, T. (2002). Information-search and decision-making by professionals and nonprofessionals in cases of alleged child-abuse and maltreatment. *Journal of Social Service Research*, 28(3), 1–18.
- Blackstock, C. (2009). After the apology why are so many First Nations children still in foster care? A summary of the research on ethnic overrepresentation and structural bias. *Children Australia*, 34(1), 22–31.
- Blackstock, C., Prakash, T., Loxley, J., & Wein, F. (2005). Summary of findings. In FNCFCFCS (Ed.), *Wen:de: We are coming to the light of day* (pp. 13–59). Ottawa: First Nations Child and Family Caring Society of Canada.
- Blackstock, C., & Trocmé, N. (2005). Community-based child welfare for Aboriginal children: Supporting resilience through structural change. *Social Policy Journal of New Zealand*, 24(12), 12–33.
- Bombay, A., Matheson, K., & Anisman, H. (2014). The intergenerational effects of Indian residential schools: Implications for the concept of historical trauma. *Transcultural Psychiatry*, 51(3), 320–338. <http://dx.doi.org/10.1177/1363461513503380>
- Canadian Council of Child and Youth Advocates. (2014). *Backgrounder: Information on Aboriginal children in care*. Ontario.
- Carter, V. B. (2010). Factors predicting placement of urban American Indian/Alaskan Natives into out-of-home care. *Children and Youth Services Review*, 32(5), 657–663.
- Chabot, M., Fallon, B., Tonmyr, L., MacLaurin, B., Fluke, J., & Blackstock, C. (2013). Exploring alternate specifications to explain agency-level effects in placement decisions regarding Aboriginal children: Further analysis of the Canadian Incidence Study of Reported Child Abuse and Neglect Part B. *Child Abuse & Neglect*, 37, 61–76.
- Dalgleish, L. I., & Drew, E. C. (1989). The relationship of child abuse indicators to the assessment of perceived risk and to the court's decision to separate. *Child Abuse and Neglect*, 13(4), 491–506.
- Darlington, Y., Healy, K., & Feeney, J. A. (2010). Approaches to assessment and intervention across four types of child and family welfare services. *Children and Youth Services Review*, 32, 356–364.

- Dragow, F., & Schmitt, N. (2002). *Measuring and analyzing behaviour in organizations*. California: Jossey-Bass.
- Fallon, B., Chabot, M., Fluke, J., Blackstock, C., MacLaurin, B., & Tonmyr, L. (2013). Placement decisions and disparities among Aboriginal children: Further analysis of the Canadian Incidence Study of Reported Child Abuse, Neglect Part A: Comparisons of the 1998, 2003, surveys. *Child Abuse & Neglect*, 37(1), 47–60.
- Filbert, K., & Flynn, R. J. (2010). Developmental and cultural assets and resilient outcomes in First Nations young people in care: An initial test of an explanatory model. *Children and Youth Services Review*, 32, 560–564.
- Fluke, J., Chabot, M., Fallon, B., MacLaurin, B., & Blackstock, C. (2010). Placement decisions and disparities among Aboriginal groups: An application of the decision making ecology through multi-level analysis. *Child Abuse & Neglect*, 34(1), 57–69.
- Giovannoni, J., & Becerra, R. (1979). *Defining child abuse*. New York: The Free Press.
- Goldstein, H., Browne, W., & Rasbash, J. (2002). Partitioning variation in generalised linear multilevel models. *Understanding Statistics: Statistical Issues in Psychology Education and the Social Sciences*, 1(4), 223–231.
- Grasso, A., & Epstein, I. (1988). Management by measurement: Organizational dilemmas and opportunities. *Administration in Social Work*, 11(3–4), 89–100.
- Grinde, T. V. (2007). Nordic child welfare services: Variations in norms, attitudes and practice. *Journal of Children's Services*, 2(4), 44–58.
- Hoagwood, K. (1997). Interpreting nullity: The Fort Bragg experiment—A comparative success or failure? *American Psychologist*, 52, 546–550.
- Hollingsworth, L. D., Bybee, D., Johnson, E. I., & Swick, D. C. (2010). A comparison of caseworker characteristics in public and private foster care agencies. *Children and Youth Services Review*, 32, 578–584.
- Johnson, W., & L'Esperance, J. (1984). Predicting the recurrence of child abuse. *Social Work Research and Abstracts*, 20(2), 21–26.
- Loppie-Reading, C., & Wien, F. (2009). *Health inequalities and social determinants of Aboriginal peoples' health*. Prince George, BC: National Collaborating Centre for Aboriginal Health.
- McKenzie, B. (1997). Connecting policy and practice in First Nations child and family services: A Manitoba case study. In J. Pulkingham, & G. Ternowetsky (Eds.), *Child and family policies: Struggles, strategies and options*. Halifax: Fernwood Publishing.
- Muthén, L. K., & Muthén, B. O. (1998–2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
- National Council on Welfare. (2008). *First Nations, Métis and Inuit children and youth: Time to act*. Ottawa: National Council on Welfare.
- Public Health Agency of Canada (PHAC). (2010). *Canadian Incidence Study of Reported Child Abuse and Neglect 2008: Major findings*. Ottawa: PHAC.
- Rossi, P. H., Schuerman, J., & Budde, S. (1999). Understanding decisions about child maltreatment. *Evaluation Review*, 23(6), 579–598.
- Royal Commission on Aboriginal Peoples. (1996). *Report of the Royal Commission on Aboriginal Peoples*. Ottawa, ON: Indian and Northern Affairs Canada.
- Schuerman, J., Rossi, P. H., & Budde, S. (1999). Decisions on placement and family preservation. *Evaluation Review*, 23(6), 599–618.
- Shdaimah, C. (2009). Rescuing children and punishing poor families: Housing related decisions. *Journal of Sociology & Social Welfare*, 36(3), 33–57.
- Sinha, V. (2014). *National First Nations child welfare*. Montreal, QC: FNCIS Advisory Committee.
- Sinha, V., Ellenbogen, S., & Trocmé, N. (2013). Substantiating neglect of first nations and non-Aboriginal children. *Children and Youth Services Review*, 35, 2080–2090.
- Standing Committee on Public Accounts. (2009). Chapter 4: First Nations child and family services program – Indian and Northern Affairs Canada of the May 2008 report of the Auditor General: Report of the Standing Committee on Public Accounts. Retrieved from http://www.fncaringsociety.com/docs/402PACP_Rpt07-e.pdf
- Sullivan, R., & Charles, G. (2010). *Disproportionate representation and First nations Child Welfare in Canada*. The Federation of Community Social Services of UBC. Retrieved from <http://fpsss.com/wordpress/wp-content/uploads/2010/04/Disproportionate-Representation-and-First-Nations-Child-Welfare-Ap-10.pdf>

- Trocmé, N., Fallon, B., MacLaurin, B., Daciuk, J., Felstiner, C., Black, T., Tonmyr, L., Blackstock, C., Barter, K., Turcotte, D., & Cloutier, R. (2005). *Canadian Incidence Study of Reported Child Abuse and Neglect, 2003: Major findings*. Ottawa: Minister of Public Works and Government Services Canada.
- Trocmé, N., Fallon, B., MacLaurin, B., Sinha, V., Black, T., Fast, E., Felstiner, C., Hélie, S., Turcotte, D., Weightman, P., Douglas, J., & Holroyd, J. (2010). Chapter 5: Characteristics of children and families. In PHAC (Ed.), *Canadian Incidence Study of Reported Child Abuse, 2008: Major findings*. Ottawa: Public Health Agency of Canada.
- Trocmé, N., Fallon, B., Sinha, V., Van Wert, M., Kozlowski, A., & MacLaurin, B. (2013). Differentiating between child protection and family support in the Canadian child welfare system's response to intimate partner violence, corporal punishment, and child neglect. *International Journal of Psychology*, 48(2), 128–140.
- Trocmé, N., Knoke, D., & Blackstock, C. (2004). Pathways to the overrepresentation of Aboriginal children in Canada's child welfare system. *Social Service Review*, 74(4), 577–600.
- Trocmé, N., MacLaurin, B., Fallon, B., Daciuk, J., Billingsley, D., Tourigny, M., Mayer, M., Wright, J., Barter, K., Burford, G., Hornick, J., Sullivan, R., & McKenzie, B. (2001). *The Canadian Incidence Study of Reported Child Abuse and Neglect: Final report*. Ottawa, Ontario: Minister of Public Works and Government Services Canada.
- Wilson, D., & Macdonald, D. (2010). *The income gap between Aboriginal peoples and the rest of Canada*. Ottawa, Ontario: Canadian Centre for Policy Alternatives.
- Wolock, I. (1982). Community characteristics in child abuse and neglect cases. *Social Work Research and Abstracts*, 18(2), 9–15.
- Yoo, J. (2002). The relationship between organizational variables and client outcomes: A case study in child welfare. *Administration in Social Work*, 26(2), 39–61.