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## An Examination of Delinquency in a National Canadian Sample of Child Maltreatment-Related Investigations

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### Abstract:

**Objectives:** To examine factors associated with delinquency/youth justice system involvement in a national sample of child welfare investigations and explore whether delinquency/justice system involvement predict child welfare service provision. **Methods:** Secondary analysis was conducted using data from the Canadian Incidence Study of Reported Child Abuse and Neglect, 2008 (CIS-2008), specifically examining a weighted sample of 57,601 pre-adolescents (age 8-11), and 58,641 adolescents (age 12-15). Delinquency was examined in pre-adolescents and youth justice system involvement was examined in adolescents. Descriptive analysis was conducted and is reported as frequencies. After identifying significant bivariate relationships between delinquency/justice system involvement and youth, household, case, and service characteristics, logistic regressions were used to determine whether the presence of delinquency/justice system involvement predicted the investigation being transferred to ongoing child welfare services. **Results:** For pre-adolescents, delinquency increased the likelihood that a case would be transferred to ongoing child welfare services. For adolescents, youth justice system involvement did not increase the likelihood of case transfer. **Conclusions and Implications:** The results provide important information about delinquency/youth justice system involvement in a national sample of Canadian child welfare investigations. **Implications:** Future research should continue to explore this area to determine how to best meet the needs of vulnerable young people with both delinquency/justice system involvement and involvement in the child welfare system.

### Keywords:

Adolescents, delinquency, child welfare, child maltreatment, youth justice

Longitudinal and cross-sectional studies point to the elevated risk for violent behaviour, delinquency, and justice system involvement among children and youth who have been maltreated (e.g., Brezina, 1998; Brown, 1984; Chapple, Tyler, & Bersani, 2005; Crooks, Scott, Wolfe, Chiodo, & Killip, 2007; Fagan, 2005; Gover, 2002; Haapasalo, 2000; Hamilton, Falshaw, & Browne, 2002; Herrenkohl, Huang, Tajima, & Whitney, 2003; Hollist, Hughes, & Schaible, 2009; Lemmon, 2006). Certain factors appear to place maltreated youth at higher risk for involvement in delinquency, including male gender (Crooks et al., 2007; DeGue & Widom, 2009; Jonson-Reid, 2002), experiences of maltreatment at older ages (Bright & Jonson-Reid, 2008; Haapasalo, 2000), and learning disabilities, emotional disturbances, and depression (Bright & Jonson-Reid, 2008; Postlethwait, Barth, & Guo, 2010). Young people who experience maltreatment and live in poverty appear to be at particular risk for criminal behaviour and justice system involvement (Bright & Jonson-Reid, 2008; Fagan, 2005).

Child welfare services are intended to mitigate the negative consequences of child maltreatment by improving safety and stability in the lives of children (DeGue & Widom, 2009). Research has examined the impact of child welfare services (e.g., out-of-home placement) on later delinquency (e.g., DeGue & Widom, 2009; Lemmon, 2006), with mixed results. However, few studies have focused on delinquency as a predictor of child welfare decision making and service delivery. Child functioning concerns, caregiver or household risks (e.g., financial issues, household moves), and a risk of future maltreatment tend to signal a need for support and in turn increase the odds that child welfare services will be provided (Jud, Fallon, & Trocmé, 2012). It is unclear whether delinquency and youth justice involvement increase the chances that child welfare services are delivered, above and beyond the influence of other risk factors.

The present analysis will use the Canadian Incidence Study of Reported Child Abuse and Neglect, 2008 (CIS-2008) to first explore factors that are associated with delinquency/youth justice system involvement in a representative sample of child welfare investigations and then to determine if delinquency/

youth justice system involvement predict child welfare service provision. Given that there is little Canadian research in this area, this analysis is exploratory in nature and examines a wide range of variables collected as part of the CIS-2008. The specific objectives of this analysis include to:

- (1) Describe the characteristics (youth, household, case, and service) of maltreatment related investigations of youth age 8-15 in Canada in 2008.
- (2) Examine factors associated with delinquency related behaviour/youth criminal justice system involvement.
- (3) Determine if delinquency related behaviour/youth criminal justice system involvement impact the decision to transfer a case to ongoing child welfare services.

This analysis will contribute to our understanding of whether child welfare workers attend to delinquent and criminal behaviours above and beyond other issues and difficulties in the lives of youth, and if these behaviours uniquely influence the decisions they make. Child welfare services have the potential to improve the well-being and life trajectories of youth displaying delinquent or criminal behaviours. A first step in understanding if child welfare services are reaching this potential is to determine whether or not consideration of these behaviours forms part of the routine decision making of child welfare workers.

## Methods

The primary objective of the CIS-2008 was to obtain national estimates of the scope and characteristics of child maltreatment related investigations in Canada. The CIS-2008 collected information directly from child protection workers in every province and territory in Canada during a three month sampling period in the fall of 2008. The resulting dataset is unique and comprehensive, and contains clinical information collected during routine child maltreatment related investigations.

The CIS-2008 used a multi-stage sampling design. First, a stratified cluster sampling strategy was employed to select a representative sample of 112 child welfare agencies from 412 child welfare service areas in Canada (Trocmé et al., 2010b). Child welfare

agencies are those social service agencies mandated to conduct child protection investigations. Within the 112 agencies, cases opened for investigation between October 1<sup>st</sup> and December 31<sup>st</sup>, 2008<sup>1,2</sup> were eligible for inclusion in the study (Trocmé et al., 2010b). In most jurisdictions in Canada, child welfare cases are opened at the level of the family, implying that each case in the agency records is counted as an entire family. However, the unit of analysis in the CIS-2008 is the investigation of one child, and therefore, procedures were developed to determine which specific children in each family were investigated for maltreatment related concerns. For jurisdictions that open child welfare investigations at the level of the child, these procedures were not necessary.

The CIS-2008 tracked *maltreatment related investigations* to include both *maltreatment investigations* and *risk assessments*. Maltreatment investigations focus on an incident of maltreatment that is alleged or suspected to have occurred, whereas risk assessments focus on the risk that maltreatment will occur in the future. Child welfare services are mandated to investigate situations in which a child may have already been abused or neglected (Trocmé et al., 2010b). The mandates of child welfare services can also apply in situations where a child is at risk of maltreatment in the future, even if no past incident of maltreatment is suspected or alleged (Trocmé et al., 2010b).

The sampling procedures yielded a final sample of 15,980 children aged zero to 15 investigated because of maltreatment related concerns. The present research focuses exclusively on investigations involving two age groups: eight to 11 years (n=3,934) and 12 to 15 years (n= 3,908). Although individuals age eight to 11 are ineligible for justice system involvement, certain behaviours displayed in this period may represent risk factors for later involvement in the youth and/or adult justice systems. For this reason, a derived variable was created to reflect “delinquency related behaviours,” and this variable was examined in youth age eight to 11. At age 12, young people are eligible to be served by the youth criminal justice system

1 In several Aboriginal jurisdictions, the dates of the three month period varied due to late enrollment.

2 Three months was considered to be the optimal period to maintain participation and compliance with study procedures.

in Canada, and therefore formal justice system involvement was assessed for this age group. Child welfare statutes vary across provinces, with some extending services to young people under age 16, and others extending services to young people under age 19 (Trocmé et al., 2010a). To obtain a national picture of child welfare investigations involving adolescents, only investigations of young people between the ages of 12 and 15 were included for analysis, as this was the lowest common age cut for child welfare services across Canada.

Two sets of weights were applied to the data in order to derive national annual estimates. First, results were annualized to estimate the volume of cases investigated by each study site over the whole year. To account for the non-proportional sampling design, regional weights were then applied. CIS estimates cannot be unduplicated because annualization weights are based on unduplicated service statistics provided by the study sites (Trocmé et al., 2010b). Therefore, estimates for the CIS refer to child maltreatment related investigations. The weighting procedures resulted in a final weighted sample of 57,601 maltreatment related investigations involving young people age eight to 11 years, and 58,641 maltreatment related investigations involving young people age 12 to 15 years.

Information for the CIS-2008 was collected from child protection workers using a three page data collection instrument. Workers completed the instrument at the end of their initial investigation. This instrument collected information on the youth, their caregivers, and their households, as well as the short-term child welfare services provided to the youth and their families. Variables included in the present research are described in Table 1.

## Analysis Plan

All analyses were conducted using SPSS version 20. Univariate descriptive analyses were conducted and are reported as frequencies. Bivariate analyses were conducted to examine youth, household, and case factors associated with delinquency related behaviours in eight to 11 year olds and youth criminal justice system involvement in 12 to 15 year olds. Chi-square statistics were used to determine statistically

significant relationships<sup>3</sup>. The youth, household, and case factors were included based on the existing literature and the availability of variables in the CIS-2008 dataset.

Binary logistic regressions were then conducted to determine whether the presence of delinquency

related behaviours in eight to 11 year olds and youth criminal justice system involvement in 12 to 15 year olds predicted ongoing child welfare service provision. The regressions controlled for variables at the youth, household, and case levels. All predictors were significantly associated with the outcome variable (i.e., ongoing service provision) at the bivariate level.<sup>4</sup>

3 When conducting chi-square analysis, different weighting procedures were applied in order to prevent inflation of significance.

4 Results of this analysis are not presented because of space limitations.

Table 1. Definitions of Variables Examined in Analysis

Variable	Definition
<b>Youth Characteristics</b>	
Sex	Male or Female
Delinquency Related Behaviors (for youth age 8-11)	If at least one of the following functioning concerns was noted by the investigating worker, the investigation was grouped into the delinquency related behaviors group: aggression, multiple incidents of running, inappropriate sexual behavior, alcohol abuse, or drug abuse. If the worker did not note any of these concerns, the investigation was grouped into the no delinquency group.
Youth Criminal Justice Act involvement (for youth age 12-15)	One of the youth functioning concerns the worker could note included YCJA involvement.
Youth Functioning Concerns	The CIS-2008 collected information about functioning concerns. This analysis examined the most common concerns noted for older youth, as these were the most age-appropriate concerns to focus on. For eight to 11 year olds, the most common concerns (i.e., more than 10% of sample identified with the concern) noted by the worker included: academic difficulty, depression/anxiety/withdrawal, aggression, ADD/ADHD, intellectual/developmental disability, and attachment issues. For 12 to 15 year olds, the most common concerns (i.e., more than 10% of sample identified with the concern) noted by the worker included: academic difficulties, depression/anxiety/withdrawal, aggression, attachment issues, intellectual/developmental disability, ADD/ADHD, multiple incidents of running, self-harming behavior, drug/solvent abuse, and alcohol abuse.
<b>Household Characteristics</b>	
Primary Caregiver Functioning Concerns	Workers could note up to nine functioning concerns for the primary caregiver to the youth, including alcohol abuse, drug abuse, cognitive impairment, mental health issues, physical health issues, few social supports, victim of domestic violence, perpetrator of domestic violence, or history of foster care or group home. This analysis examined whether or not the investigating worker noted at least one of these concerns.
Household Income Source	Workers noted the primary source of income for the household from the following options: full time, part time, or other.
Housing Type	Workers indicated the type of housing the youth and their families lived in from the following options: owned home, rental housing, public housing, other.
Overcrowding	Workers were asked to identify whether or not the youth and their families lived in overcrowded housing conditions.
Number of Moves in Past Year	Workers were asked to indicate the number of times the youth and their families had moved in the past year. Workers could note no moves or one or more moves.
<b>Case Characteristics</b>	
Case Previously Opened	Workers were asked to indicate if the case had been opened for child welfare services in the past, and could note that the case had never been previously opened, opened once before, or opened two or more times.
Maltreatment Related Allegation	Workers identified the primary maltreatment related concern investigated from a list of five maltreatment categories (physical abuse, sexual abuse, neglect, emotional maltreatment, exposure to intimate partner violence [IPV]) and one risk category (risk of future maltreatment).
Substantiation	For maltreatment related investigations, workers indicated the substantiation level for the case as a result of the investigation. Workers could indicate that the investigation was unfounded (balance of evidence implied that the maltreatment did not occur or there was no risk of future maltreatment); suspected/unknown (that there was not enough evidence to confirm that maltreatment had occurred, but maltreatment could not be ruled out/the risk of future maltreatment was unknown); or substantiated (balance of evidence implied that the maltreatment occurred or that there was a confirmed risk of future maltreatment.)
<b>Short Term Service Disposition Characteristics</b>	
Transferred to Ongoing Services	For maltreatment related investigations, workers indicated whether or not the case would be transferred to ongoing child welfare services.

Estimates under 100 are not reported because they are too small to be reliable. The CIS-2008 had excellent item completion rates with a 98% completion rate on most items, therefore missing data was not a significant issue in this analysis. For the regression analyses, missing values were excluded listwise in SPSS.

## Results

Table 2 provides univariate descriptive statistics for all maltreatment related investigations involving youth age eight to 11 and age 12 to 15. Young people age 12 to 15 struggled with relatively more functioning

Table 2. Descriptive Statistics for Maltreatment and Risk Investigations involving Youth Age 8-15

	8-11 year olds		12-15 year olds	
	Estimate	%	Estimate	%
<b>Youth Characteristics</b>				
Youth sex				
Female	26,217	45.5%	32,242	55.0%
Male	31,384	54.5%	26,399	45.0%
Youth Functioning				
Academic difficulties	14,371	24.9%	19,569	33.4%
Depression/anxiety/withdrawal	9,383	16.3%	16,940	28.9%
Aggression	8,934	15.5%	12,839	21.9%
Attachment issues	5,807	10.1%	8,761	14.9%
Intellectual/developmental disability	6,640	11.5%	8,101	13.8%
Drug/solvent abuse	402	.7%	7,520	12.8%
ADD/ADHD	7,435	12.9%	7,293	12.4%
Running (multiple incidents)	1,174	2.0%	7,123	12.1%
Self-harming behavior	2,331	4.0%	6,058	10.3%
Alcohol abuse	175	.3%	5,535	9.4%
YCJA involvement	-	-	4,559	7.8%
Delinquency-related concerns	10,402	18.1%	-	-
<b>Household Characteristics</b>				
At least one caregiver concern	33,977	59.0%	33,919	57.8%
Household Income Source				
Full time	33,222	61.0%	35,563	64.5%
Part time	5,440	10.0%	5,350	9.7%
Other	15,764	29.0%	14,256	25.8%
Housing type				
Own home	22,484	41.1%	26,295	47.6%
Rental	21,254	38.8%	19,117	34.6%
Public housing	9,204	16.8%	8,652	15.7%
Other	1,768	3.2%	1,178	2.1%
Home overcrowded				
No	51,704	93.1%	51,429	91.8%
Yes	3,820	6.9%	4,583	8.2%
Number of moves				
0	32,984	70.0%	34,451	72.7%
1+	14,168	30.0%	12,948	27.3%
<b>Case Characteristics</b>				
Case previously opened	19,536	34.4%	18,908	32.8%
Never	10,484	18.4%	10,555	18.3%
1 time	26,838	47.2%	28,257	49.0%
2+ times				
Maltreatment-Related Allegation				
Physical abuse	12,462	21.6%	14,633	25.0%
Sexual abuse	2,405	4.2%	3,581	6.1%
Neglect	14,668	25.5%	14,438	24.6%
Emotional maltreatment	3,472	6.0%	4,470	7.6%
Exposure to IPV	9,514	16.5%	7,059	12.0%
Risk	15,079	26.2%	14,459	24.7%
Substantiation				
Unfounded/no risk	28,040	48.7%	27,069	46.2%
Suspected/unknown	6,775	11.8%	6,751	11.5%
Substantiated/confirmed risk	22,785	39.6%	24,820	42.3%
Short Term Service Disposition				
Transferred to ongoing services	13,485	23.4%	15,540	26.5%
Total	57,601		58,641	

Table 3. Delinquency Related Behavior in Maltreatment-Related Investigations involving Youth Age 8-11

	No Delinquency		Delinquency		Pearson X <sup>2</sup>
	Estimate	%	Estimate	%	
<b>Youth Characteristics</b>					
Youth sex					82.90***
Female	23,094	48.9%	3,123	30.0%	
Male	24,105	51.1%	7,279	70.0%	
Youth Functioning					
Academic difficulties	8,449	17.9%	5,922	56.9%	469.32***
Depression/anxiety/withdrawal	5,456	11.6%	3,926	37.7%	289.84***
Attachment issues	2,924	6.2%	2,884	27.7%	294.67***
Intellectual/developmental disability	3,988	8.4%	2,653	25.5%	165.39***
ADD/ADHD	3,371	7.1%	4,064	39.1%	523.96***
Self-harming behavior	1,261	2.7%	1,069	10.3%	85.61***
<b>Household Characteristics</b>					
At least one caregiver concern	27,394	58.0%	6,583	63.3%	6.52*
Household Income Source					
Full time	27,593	62.2%	5,629	55.9%	9.58**
Part time	4,258	9.6%	1,181	11.7%	
Other	12,496	28.2%	3,268	32.4%	
Housing type					
Own home	18,787	42.2%	3,697	36.4%	8.66*
Rental	17,100	38.4%	4,154	40.9%	
Public housing	7,321	16.4%	1,883	18.6%	
Other	1,356	3.0%	412	4.1%	
Home overcrowded					7.15**
No	42,902	93.6%	8,802	90.7%	
Yes	2,918	6.4%	902	9.3%	
Number of moves					9.53**
0	27,113	71.2%	5,871	64.8%	
1+	10,980	28.8%	3,188	35.2%	
<b>Case Characteristics</b>					
Case previously opened					20.43***
Never	16,770	35.9%	2,765	27.2%	
1 time	8,539	18.3%	1,944	19.1%	
2+ times	21,372	45.8%	5,466	53.7%	
Maltreatment-Related Allegation					74.93***
Physical abuse	9,087	19.3%	3,375	32.4%	
Sexual abuse	1,904	4.0%	501	4.8%	
Neglect	11,992	25.4%	2,676	25.7%	
Emotional maltreatment	2,862	6.1%	610	5.9%	
Exposure to IPV	8,289	17.6%	1,225	11.8%	
Risk	13,064	27.7%	2,014	19.4%	
Substantiation					36.95***
Unfounded/no risk	23,986	50.8%	4,054	39.0%	
Suspected/unknown	5,554	11.8%	1,221	11.7%	
Substantiated/confirmed risk	17,658	37.4%	5,127	49.3%	
Short Term Service Disposition					
Transferred to ongoing services	9,695	20.6%	3,790	36.5%	81.61***
Total	57,601		58,641		

\* p < 0.05    \*\* p < 0.01    \*\*\* p < 0.001

concerns than their younger counterparts, with 33% of investigations of 12 to 15 year olds noting academic difficulties, 29% noting depression/anxiety/withdrawal, 22% noting aggression, and 15% noting attachment issues. Academic difficulties, depression/anxiety/withdrawal, and aggression were the most common functioning concerns for youth age eight to 11 as well. In approximately 18% of investigations of

youth age eight to 11, the worker noted a delinquency related functioning concern. In 8% of investigations involving youth age 12 to 15, the worker noted involvement in the youth justice system.

The majority of investigations for both eight to 11 year olds (59%) and 12 to 15 year olds (58%) noted at least one functioning concern for the primary

caregiver. For both age groups, the majority of families were financially supported by a full-time income and most did not live in overcrowded housing conditions. In 30% of investigations of eight to 11 year olds and 27% of investigations of 12 to 15 year olds, the family had moved at least once in the past year.

In the majority of investigations for both age groups, the worker noted at least one previous child welfare case opening (66% of eight to 11 year olds; 67% of 12 to 15 year olds). For the eight to 11 year old group, the most commonly investigated maltreatment related allegations were risk of future maltreatment and neglect (26% of investigations each), followed by physical abuse (22%). The most common allegations investigated for 12 to 15 year olds included physical abuse, risk, and neglect (25% of investigations each). Sexual abuse was the least common maltreatment related allegation for both eight to 11 year olds (4%) and 12 to 15 year olds (6%). Almost half of all maltreatment related investigations were unfounded (49% for eight to 11 year olds, 46% for 12 to 15 year olds). The substantiation rate was similar for the two age groups, with 40% of investigations involving eight to 11 year olds substantiated and 42% of investigations involving 12 to 15 year olds substantiated. In a small proportion of investigations, the worker determined that the maltreatment was suspected or the future risk of maltreatment was unknown. In approximately one quarter of investigations of eight to 11 year olds (23%) and 12 to 15 year olds (27%), the case was transferred to ongoing child welfare services at the conclusion of the investigation.

Table 3 displays the bivariate analysis for maltreatment related investigations involving youth age eight to 11. Male youth were more likely to be identified with delinquency related behaviours than female youth. Investigations noting delinquency related concerns were significantly more likely to note additional functioning concerns as well. The most common concerns noted were academic difficulties, depression/anxiety/withdrawal, attachment issues, intellectual/developmental disability, and ADD/ADHD. Investigations involving youth with delinquency related behaviours were more likely to note at least one caregiver functioning concern, less likely to note that the family was supported by a full time income or owned their own home, and more likely to note

overcrowded or transient housing conditions.

Youth with delinquency related concerns were more likely to be investigated for physical abuse and less likely to be investigated for exposure to intimate partner violence, and the investigation was more likely to be substantiated. Young people identified with delinquency related concerns were also more likely to have a previous case opening with the child welfare system, and were more likely to have their case transferred to ongoing child welfare services.

Table 4 depicts the bivariate analysis for maltreatment related investigations involving youth age 12 to 15. Similar to the analysis of younger children, more males than females were identified with justice system involvement. Also similar to the previous analysis, those investigations involving youth with justice system involvement were more likely to note other youth functioning concerns as well, most commonly, academic difficulties, aggression, drug/solvent abuse, depression/anxiety/withdrawal, and multiple incidents of running. Interestingly, there were no significant differences in the household characteristics of youth with and without formal justice system involvement. At the case level however, there were significant differences. Youth with justice system involvement were significantly more likely to have previous contact with child welfare, with 62% of investigations noting two or more previous child welfare openings. Compared to those without involvement, youth with justice system involvement were more likely to be investigated for neglect and risk, and were slightly more likely to be involved in a substantiated or suspected investigation. Youth with justice system involvement were significantly more likely to be involved in an investigation that was transferred to ongoing child welfare services at the bivariate level.

Table 5 displays the results of a binary logistic regression predicting transfers to ongoing child welfare services in maltreatment related investigations involving youth age eight to 11. Predictors were added in four blocks, beginning with youth characteristics, and then adding household characteristics, case characteristics, and lastly delinquency related behaviour. The final model correctly classified 66.2% of investigations. The presence of delinquency related

Table 4. YCJA Involvement in Maltreatment-Related Investigations involving Youth Age 12-15

	No YCJA		YCJA		Pearson X <sup>2</sup>
	Estimate	%	Estimate	%	
<b>Youth Characteristics</b>					
Youth Sex					42.72***
Female	30,547	56.5%	1,695	37.2%	
Male	23,535	43.5%	2,864	62.8%	
Youth Functioning					
Academic difficulties	16,603	30.7%	2,966	65.1%	151.16***
Depression/anxiety/withdrawal	14,968	27.7%	1,972	43.3%	34.15***
Aggression	10,002	18.5%	2,837	62.2%	317.34***
Attachment issues	7,428	13.7%	1,333	29.2%	53.21***
Intellectual/developmental disability	6,885	12.7%	1,215	26.7%	45.55***
ADD/ADHD	5,904	10.9%	1,389	30.5%	99.56***
Running (multiple incidents)	5,166	9.6%	1,957	42.9%	299.28***
Self-harming behavior	4,918	9.1%	1,140	25.0%	77.17***
Drug/solvent abuse	5,074	9.4%	2,445	53.6%	500.75***
Alcohol abuse	3,789	7.0%	1,746	38.3%	324.10***
<b>Household Characteristics</b>					
At least one caregiver concern	31,225	57.7%	2,694	59.1%	0.26
Household Income Source					0.38
Full time	32,872	64.6%	2,691	62.9%	
Part time	4,930	9.7%	420	9.8%	
Other	13,091	25.7%	1,165	27.2%	
Housing type					7.83
Own home	24,552	48.1%	1,742	41.1%	
Rental	17,364	34.0%	1,753	41.3%	
Public housing	7,963	15.6%	689	16.2%	
Other	1,118	2.2%	-	-	
Home overcrowded					1.24
No	47,370	91.7%	4,059	93.5%	
Yes	4,302	8.3%	281	6.5%	
Number of moves					1.65
0	31,756	72.4%	2,695	76.1%	
1+	12,102	27.6%	846	23.9%	
<b>Case Characteristics</b>					
Case previously opened					23.81***
Never	17,857	33.6%	1,051	23.1%	
1 time	9,888	18.6%	667	14.7%	
2+ times	25,433	47.8%	2,824	62.2%	
Maltreatment-Related Allegation					23.54***
Physical abuse	13,504	25.0%	1,129	24.8%	
Sexual abuse	3,328	6.2%	254	5.6%	
Neglect	13,028	24.1%	1,411	30.9%	
Emotional maltreatment	4,129	7.6%	341	7.5%	
Exposure to IPV	6,867	12.7%	193	4.2%	
Risk	13,227	24.5%	1,232	27.0%	
Substantiation					8.60*
Unfounded/no risk	25,274	46.7%	1,795	39.4%	
Suspected/unknown	6,046	11.2%	705	15.5%	
Substantiated/confirmed risk	22,761	42.1%	2,059	45.2%	
Short Term Service Disposition					30.68***
Transferred to ongoing services	13,719	25.4%	1,822	40.0%	
Total	58,641				

\* p < 0.05    \*\* p < 0.01    \*\*\* p < 0.001

behaviour significantly increased the odds that the case would be transferred to ongoing services (OR=1.469, p=.001). However, the final model accounted for only 22% (Nagelkerke R<sup>2</sup>=0.22) of

the variance in the decision to transfer the case to ongoing services, with the addition of delinquency related behaviours contributing less than one percent to the overall explained variance. The final model also



Table 5. Logistic Regression Predicting Transfers to Ongoing Service Provision in Maltreatment-Related Investigations involving Youth Age 8-11

	-2 Log Likelihood	Nagelkerke R2	% Classified Correctly	B	SE	Wald	Sig	OR
Youth Characteristics	3,248.56	0.09	65.90%					
Youth sex				-0.066	0.094	0.491	0.484	0.936
Youth Functioning								
Academic difficulties				0.492	0.104	22.424	0.000	1.636
Depression/anxiety/withdrawal				0.824	0.111	54.852	0.000	2.279
Household Characteristics	2,991.53	0.21	65.40%					
At least one caregiver functioning concern				1.309	0.122	114.944	0.000	3.704
Household Income Source								
Full time								
Part time				0.107	0.151	0.505	0.477	1.113
Other				0.54	0.111	23.815	0.000	1.716
Housing type								
Own home								
Rental				-0.368	0.118	9.774	0.002	0.692
Public housing				-0.164	0.147	1.249	0.264	0.849
Other				-0.097	0.266	0.132	0.717	0.908
Home overcrowded				0.526	0.15	12.376	0.000	1.692
At least one move				0.222	0.102	4.723	0.030	1.248
Case Characteristics	2,964.18	0.22	65.50%					
Case previously opened								
Never								
1 time				0.312	0.137	5.146	0.023	1.366
2+ times				0.368	0.112	10.77	0.001	1.445
Maltreatment-Related Allegation								
Physical abuse								
Sexual abuse				0.09	0.266	0.116	0.734	1.095
Neglect				0.05	0.142	0.123	0.725	1.051
Emotional maltreatment				0.656	0.199	10.876	0.001	1.928
Exposure to IPV				0.191	0.154	1.535	0.215	1.21
Risk				-0.038	0.147	0.067	0.796	0.963
Delinquency-related Behavior	2,954.06	0.22	66.20%					
Delinquency				0.384	0.12	10.254	0.001	1.469

Total = 57,601

revealed other important predictors of transfers to ongoing services, including the presence of at least one caregiver functioning concern ( $OR=3.704$ ,  $p<.001$ ), a primary maltreatment related concern of emotional maltreatment ( $OR=1.928$ ,  $p=.001$ ), youth depression/anxiety/withdrawal ( $OR=2.279$ ,  $p<.001$ ) and academic difficulties ( $OR=1.636$ ,  $p<.001$ ), household income from sources other than full- or part-time employment ( $OR=1.716$ ,  $p<.001$ ), and overcrowded housing conditions ( $OR=1.692$ ,  $p<.001$ ).

Table 6 depicts the results of a binary logistic regression predicting transfers to ongoing child

welfare services in maltreatment related investigations involving 12 to 15 year olds. Again, predictors were entered in four blocks: youth characteristics, household characteristics, case characteristics, and finally, formal youth justice system involvement. The final model explained only approximately 19% (Nagelkerke  $R^2=0.189$ ) of the variance in the decision to transfer the case to ongoing services, and classified 65.6% of cases correctly. Youth justice system involvement did not contribute to the explained variance or percentage of cases correctly classified, and did not significantly increase the likelihood of case transfer ( $OR=1.24$ ,  $p=.175$ ). The strongest

Table 6. Logistic Regression Predicting Transfers to Ongoing Service Provision in Maltreatment-Related Investigations involving Youth Age 12-15

	-2 Log Likelihood	Nagelkerke R2	% Classified Correctly	B	SE	Wald	Sig	OR
Youth Characteristics	3,352.85	0.08	63.80%					
Youth sex				-.003	.091	.001	.972	.997
Youth Functioning								
Academic difficulties				.027	.101	.072	.788	1.028
Depression/anxiety/withdrawal				.781	.098	63.360	.000	2.184
Aggression				.477	.113	17.710	.000	1.612
Household Characteristics	3,167.13	0.162	65.70%					
At least one caregiver functioning concern				.977	.107	84.036	.000	2.656
Household Income Source								
Full time								
Part time				-.174	.155	1.253	.263	.840
Other				.122	.110	1.231	.267	1.129
Housing type								
Own home								
Rental				-.062	.111	.314	.575	.940
Public housing				.178	.141	1.588	.208	1.194
Other				.457	.292	2.453	.117	1.579
Home overcrowded				.267	.154	3.011	.083	1.307
At least one move				.214	.104	4.244	.039	1.238
Case Characteristics	3,106.28	0.188	65.70%					
Case previously opened								
Never								
1 time				.316	.136	5.394	.020	1.372
2+ times				.443	.111	15.880	.000	1.557
Maltreatment-Related Allegation								
Physical abuse								
Sexual abuse				.536	.219	5.978	.014	1.709
Neglect				.656	.132	24.532	.000	1.928
Emotional maltreatment				.568	.180	9.982	.002	1.765
Exposure to IPV				.395	.161	5.989	.014	1.485
Risk				.019	.139	.018	.892	1.019
Youth Justice System Involvement	3,104.45	0.189	65.60%					
YCJA involvement				.216	.159	1.842	.175	1.241
Total=58,641								

predictors of case transfer in the final model included the presence of at least one caregiver functioning concern ( $OR=2.656, p<.001$ ), youth depression/anxiety/withdrawal ( $OR=2.184, p<.001$ ), and a primary maltreatment related concern of neglect ( $OR=1.928, p<.001$ ).

## Discussion

The findings from this analysis add to our knowledge of the interrelationships among child maltreatment, child welfare involvement, delinquency, and youth justice system involvement in Canada. Consistent with the literature, the findings indicated

that delinquency related behaviours and justice system involvement were associated with factors such as being male (Crooks et al., 2007; DeGue & Widom, 2009; Jonson-Reid, 2002) and struggling with learning disabilities, emotional disturbances, and depression (Bright & Jonson-Reid, 2008; Postlethwait et al., 2010). Overall, the youth displaying delinquency related behaviours and involvement in the justice system in this sample appear to struggle with numerous issues such as ADHD, depression, anxiety, self-harm, attachment issues, and intellectual or developmental disabilities. This is consistent with other literature in this area (e.g., Brezina, 1998; Gover, 2002).

Youth displaying delinquency related behaviours or justice system involvement were more likely to be involved in substantiated investigations and to have had two or more previous child welfare openings. These young people may be experiencing chronic victimization and/or family functioning problems. Other research suggests that persistent maltreatment and child welfare involvement increases the likelihood of criminal behaviour and justice system involvement (Ireland et al., 2002; Jonson-Reid, 2002).

Youth age eight to 11 who displayed delinquent behaviours were more likely to live in overcrowded and transient housing conditions, less likely to live in an owned home, and less likely to live in a household supported by full time income. Poverty has been identified as a risk factor for both maltreatment and delinquency (Smith & Thornberry, 1995). Young people living in poor socioeconomic conditions often do not have access to proper nutrition, health care, and social stimulation, and their caregivers may be unable to provide appropriate support and stimulation due to these same stressors (Bigelow, 2006). There are numerous mechanisms through which poverty may be connected to maltreatment, child welfare involvement, delinquent behaviour, and justice system involvement.

Whereas youth age eight to 11 were more likely to receive ongoing child welfare services when delinquency related behaviour was noted, young people age 12 to 15 were not more likely to receive ongoing services as a result of formal justice system involvement. Perhaps child welfare services are identifying risk factors in the younger group and responding with a more intrusive response. Alternatively, youth with formal justice system involvement may be already connected with ancillary services as a result of their involvement, and therefore child welfare services may not be necessary. These are simply hypotheses and further research is needed to determine how child welfare services contact, assess, and respond to young people displaying delinquent and criminal behaviours.

### Considerations and Limitations

The CIS-2008 is a cross-sectional national study that reflects a point in time picture of children and families contacting the child welfare system. The

present analysis therefore cannot examine the complex trajectories that bring individuals into contact with the child welfare and youth justice systems or examine the long term outcomes associated with child welfare service provision. Cross-sectional research also cannot untangle the direction of the relationship between maltreatment and delinquency/criminality nor can it accurately reflect variations across the life course in the frequency, severity, and duration of both experiences of maltreatment and criminal behaviours.

The objective of the CIS-2008 was not to specifically collect information about criminality. A derived variable reflecting delinquency related behaviours was used in the present analysis, and this may not truly reflect delinquency.

The CIS-2008 is limited to reports of child maltreatment that are investigated, and does not capture information about cases of maltreatment that are never brought to the attention of child welfare authorities, nor does it capture information about reports of maltreatment that are screened out and never investigated. The information used in the CIS-2008 was collected from child protection workers and was not independently verified.

### Conclusion

Overall, these findings imply that youth who contact the child welfare system and also display delinquency and criminality are particularly vulnerable. Understanding these vulnerabilities can help child welfare and other service providers in developing and implementing intervention strategies to meet the complex needs of these young people. More research is needed to clearly determine the complex sequences that connect child and adolescent maltreatment, child welfare intervention, and justice system involvement (Jonson-Reid, 2004), particularly in the Canadian context. Many families served by child welfare and youth justice are engaged with other service systems as well, and therefore multi-systemic research is necessary in order to understand the pathways of children and families through various systems (Jonson-Reid, 2004). Understanding the child welfare response to youth displaying delinquent and/or criminal behaviour will help us understand these complex pathways.

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