

## The Role of School Connectedness in the Link Between Family Involvement with Child Protective Services and Adolescent Adjustment

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### Abstract:

**Objective:** The objective of this study was to examine the role of school connectedness in the association between a history of family involvement with child protective services (CPS) and symptoms of psychological distress and delinquency among youth. **Methods:** Data were gathered from 3181 participants within the 2009 cycle of the Ontario Student Drug Use and Health Survey, a province-wide school-based survey of 7th to 12th grade students. The survey employed a two-stage cluster design, and the analyses reported include adjustments for this complex sample design. **Results:** Analyses indicated that the association between CPS involvement and psychological distress varied with school connectedness. CPS involvement was more strongly associated with psychological distress among students with low school connectedness than students with high school connectedness. School connectedness did not significantly moderate the link between involvement with CPS and delinquency. **Conclusions and Implications:** Results suggest that fostering school connectedness may be one way to protect youth with a history of family involvement with CPS and, along with effective mental health services, reduce the accumulation of risks as youth transition into adulthood.

### Keywords:

Child protective services, psychological distress, school connectedness, delinquency, adolescence

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Involvement with Child Protective Services (CPS) usually arises because of suspicions of neglect or abuse, domestic violence in homes with children present, or when nutrition, housing and other basic needs for children are inadequate (Ontario Child and Family Services Act, 1990). Thus, involvement with CPS is often an indication that a child or family has had a negative experience with respect to caregiver neglect or dysfunction that may place a child at increased risk for emotional and behavioral problems. Research on child maltreatment, has supported a link to psychological and behavioral problems among children and youth (Buckner, Beardslee, & Bassuk, 2004; Burge, 2007; Burns et al., 2004; Fergusson & Lynskey, 1997; Fleming, Offord, & Boyle, 1989; Flynn, Ghazal, Legault, Vandermeulen, & Petrick, 2004; Harman, Childs, & Kelleher, 2000; Hussey, Chang, & Kotch, 2006). School is a central context for resiliency, given its potential for delivering targeted interventions and resource linkage, yet, relatively little research has examined the role of school connectedness in the association between maltreatment and psychological and behavioral problems. Childhood adverse events, such as maltreatment, have been shown to have long-term effects on psychological distress and risk behaviors (Falci, 2008; Hazel, Hammen, Brennan, & Najman, 2008). Maltreatment is a significant risk factor for psychological distress (Buckner et al., 2004; Burge, 2007; Burns et al., 2004; Harman et al., 2000; Hussey et al., 2006), as well predictive of delinquency among youth (Crooks, Scott, Wolfe, Chlodo, & Killip, 2007; Herrenkohl, Huang, Tajima, & Whitney, 2003; Stouthamer-Loeber, Loeber, Homish, & Wei, 2001; Teicher, Samson, Polcari, & McGreenery, 2006). In addition, the adverse family circumstances that may lead to CPS involvement may not only affect a single child, but may extend to other children and youth within the household. Even less serious circumstances that result in CPS involvement can be persistent, and may have the capacity to affect youth over the long term. Thus, a broader approach that examines a history of family involvement with CPS, rather than solely the presence or absence of maltreatment, or sampling only CPS rather than the broader youth population, may further highlight the link with

psychological distress and delinquency among youth. This is evident in research indicating that youth with a history of family involvement with CPS were more likely to experience psychological distress (Hamilton, Paglia-Boak, Wekerle, Danielson, & Mann, 2011) and bullying victimization in adolescence (Mohapatra, Irving, Paglia-Boak, Wekerle, Adlaf, & Rehm, 2010).

### **CPS Involvement and School Connectedness**

Beyond family communication, schools are the main source of socialization for children and youth and, in this role, may provide resources to serve protective functions to reduce risk for psychological and behavioral problems. An aspect of school that is increasingly recognized as an influential factor in child outcomes is school connectedness. School connectedness is the belief among students that teachers and other adults within the school care about them as individuals and about their learning (Wingspread Declaration on School Connections, 2004). Despite the use of a variety of different terms within the literature, including school connectedness, school attachment, school climate, school environment, or school bonding, the underlying concern is with perceptions of the social and learning environment. Much of the research on school connectedness has emphasized its relationship with academic outcomes (Anderman & Freeman, 2004; Shochet et al., 2006), and is grounded in early findings that it is an important factor in school completion or early school leaving (Wehlage, Rutter, Smith, Lesko, & Fernandez 1989). More recent research has indicated that a child's connection to school is also related to other aspects of child adjustment, in that stronger school connectedness is associated with fewer psychological and behavioral problems (Anderman, 2002; Jacobson & Rowe, 1999; Resnick et al., 1997). Additional longitudinal studies have found that school connectedness predicted psychological and behavioral outcomes in children (Kuperminc, Leadbetter, & Blatt, 2001; Shochet, Dadds, Ham, & Montague, 2006). School connectedness may be particularly important for youth with experiences of adversity at home, including histories of family involvement with CPS. Such youth may lack a strong sense of belonging to their immediate families, and so positive and stable connections to school may be of significant value,

both psychologically and socially (Gilligan, 1998; 2000; Wehrlage et al., 1989). As experiences of adversity accumulate and the range of problem areas expands, the negative effects on future outcomes become probabilistically more likely (Rutter, 1990). Regular, repeated small encouragements and attachments may play a large protective role, in their provision of positive predictable environments (e.g., supportive social networks, routines, structured environments, and positive role models). Schools are a practical alternative for youth seeking connections and a sense of belonging (Gilligan, 2000). Youth with a stronger sense of connection to school may be provided with greater opportunities for positive development that can reduce the accumulation of further risks. In contrast, youth with weaker school connectedness may have fewer opportunities for positive growth and may continue to accumulate health risk behaviors (Catalano & Hawkins, 1995). For example, school connectedness was found to have a protective effect on smoking susceptibility in a Canadian national survey of grade 6 to 8 students (Azagaba & Asbridge, 2013). Little research has examined the association between adversities such as maltreatment and school connectedness. Research examining school variables tend to focus on academic performance and find, for example, that maltreated children tend to have poorer academic achievement (e.g., grade point average, test scores) and more frequent school absences and disciplinary referrals (Eckenrode, Laird, & Doris, 1993; Leiter & Johnsen, 1994). Maltreated children are likely to be prone to isolation and distrust of adults, which may interfere with their ability to integrate into schools and form positive relationships with teachers (Leiter & Johnsen, 1994). Thus, such isolation and distrust may extend into poor academic performance and poor school connectedness. The objective of this study is to examine the moderating role of school connectedness in the association between a history of family involvement with CPS and psychological and behavioral problems among youth. Analyses will control for adolescent age, sex, and parent or family structure, research indicates that such characteristics are significantly associated with aspects of adolescent adjustment, including psychological distress and delinquency (e.g., Dornbusch, 1989; Hamilton, Noh, & Adlaf, 2009; McLanahan & Sandefur, 1994). Parental education and

adolescent academic performance are also controlled for, because of associations with school connectedness and adolescent adjustment (e.g., Anderman & Freeman, 2004; Voelkl, 1995; Zingraff, Leiter, Johnsen, & Myers, 1994). It is hypothesized that the association between CPS involvement and adolescent adjustment will vary with school connectedness.

## Materials and Methods

### Sample

Data for this study were derived from the 2009 cycle of the Ontario Student Drug Use and Health Survey (OSDUHS), a province-wide survey of 7th to 12th grade students (Paglia-Boak, Mann, Adlaf, & Rehm, 2009). OSDUHS, the longest ongoing school study of adolescents in Canada, has been conducted since 1977, and employs a two-stage cluster design (school, class). The survey monitors substance use, gambling, mental health, physical health, and delinquent behavior. The total sample in 2009 was 9112 students from 47 school boards, 181 schools, and 573 classrooms. The survey had a student participation or response rate of 65%. Absenteeism (13%) and unreturned forms or lack of parental consent (22%) were the main reasons for non-participation among students (Paglia-Boak et al., 2009). Analyses to be presented were based on a random half sample of 4851 students because specific items important to this study (e.g., CPS involvement) were only asked of a random half sample. A total of 13 respondents less than 12 or older than 19 years of age were excluded from the present study. Characteristics of the sample used for analysis are outlined in Table 1. One-half of the students were female and students had a mean age of 15.3 years. Approximately two-thirds of the sample resided in households with two biological or adoptive parents, and almost one-half had parents with a university degree.

### Measures

A measure of psychological distress was based on responses to the 12-item General Health Questionnaire (GHQ12), a composite measure used to assess depressed mood, anxiety, and general psychological distress (Goldberg, 1972). The GHQ is a validated screener for psychological distress in general population samples of adults (Goldberg et

Table 1. Variable means/percentages, overall and by history of family involvement with CPS

	CPS Involvement n=487	No Involvement n=2694	Overall Sample n=3181
Age	15.3 (1.8) <sup>1</sup>	15.3 (1.8)	15.3 (1.8)
Female	51.2%	50.2%	50.3%
Two parent household	36.4%	71.3%	65.8%
Parental education			
High school or less	30.4%	19.1%	20.9%
Some college/university	34.0%	32.1%	32.4%
University degree	35.6%	48.8%	46.7%
Average school grade of A	34.8%	49.6%	47.2%
School connectedness	3.2 (0.8)	3.3 (0.7)	3.3 (0.7)

<sup>1</sup> Standard deviation in brackets.

al., 1997). Adolescents tend to interpret the GHQ12 in a similar manner to adults (French & Tait, 2004), but relatively few GHQ validation studies have been conducted with adolescents (Tait, Hulse, & Robertson, 2002). There is, however, evidence that it can be used as a valid screener for anxiety and mood disorders in adolescents (Banks, 1983; Mann et al., 2011; Tait, Hulse, & Robertson, 2002; Tait, French, & Hulse, 2003). For example, Mann and colleagues (2011) found that reports of five or more of the GHQ12 symptoms provided estimated prevalence rates of 19.3% for anxiety and mood disorders, which is similar to 12-month prevalence rates in other recent research (Roberts, Stuart, & Lam, 2008; Romano, Tremblay, Vitaro, Zoccolillo, & Pagani, 2001). Within the current study, participants were asked to report on their health “over the last few weeks” and respond to each of the 12 items that form the GHQ on a 4-point scale. Responses were dichotomized such that a code of 1 represented either of the two response choices signifying worse health, and a code of 0 represented either of the two choices indicating better health than usual. Individual responses to six or more of the 12 items were averaged to construct an index, with higher scores indicating greater symptoms of psychological distress. Within the current study, a test of reliability of the 12-item measure indicated a Cronbach’s alpha of .87. Delinquency was a count of the number of delinquent acts in which adolescents have engaged. The survey listed 14 delinquent acts including damaged property, theft, assault, breaking and entering, and carrying a weapon. Individual responses were dichotomized such that a code of 1 signified that an individual engaged in a particular activity at least once over the 12-month period prior

to the survey, and a code of 0 indicated that they did not engage in the activity. These dichotomized responses were then summed to form a measure representing a count of the number of delinquent acts. CPS involvement was based on the survey question, “Have you or your family ever been involved with any Children’s Aid Society?” Children’s Aid Society is the agency that administers child protective services within Ontario. Response choices were “yes”, “no”, and “don’t know”. School connectedness was based on responses to two items: (1) “I feel close to people at this school” and (2) “I feel like I am part of this school”. These items are part of a social belonging measure developed by Bollen and Hoyle (1991). Responses were provided on a 4-point scale ranging from strongly agree to strongly disagree. Items were reverse coded such that higher numbers reflected greater school connectedness. The index showed good reliability with a Cronbach’s alpha of .70.

### Control Variables

Several measures were treated as control variables within the regression models. Age was a continuous variable ranging from 12 to 19 years. Sex was a dichotomous measure reflecting females (1) and males (0). Parent structure reflects current living arrangement and was based on a question that asked students to indicate the adults they currently live with in their main home. Parent structure was a dichotomous variable that represented living with two biological or adoptive parents (1) and living in other parental structures including foster, single-parent, and step-parent (0). Approximately one percent of students indicated they were living with a foster parent and thus were included within the “other”

parent category. Parental education was constructed by combining two questions that asked the highest levels of fathers' and mothers' education. Responses were combined to form a 4-category measure that reflected the educational level of the parent with the highest level of education: high school or less, some college or university, university degree, and don't know. Academic performance was based on responses to a question asking youth what marks they usually got in school on average. Responses were provided in the form of letter grades (A, B, C, D, less than D) and were reduced to a dichotomous measure representing an average grade of A (1) versus less than A (0) for analysis purposes.

### Analytic Strategy

Given a complex survey sample design, point estimates, unbiased variances and standard errors were computed using Stata 11 and included adjustments for design effects, specifically clustering, stratification, and unequal weights (StataCorp, 2009). Ordinary least squares (OLS) regression models were utilized for analyses involving symptoms of psychological distress. Hurdle regression models were used for analyses involving delinquency because the variable is a count measure with a large proportion of zeros. The hurdle model combined a logit model to predict zeros and a zero-truncated negative binomial (ZTNB) model to predict counts among those with nonzero delinquent acts. ZTNB, rather than zero-truncated Poisson, was deemed appropriate for the non-zero component because of over-dispersion within the delinquency variable (Cameron & Trivedi, 1986; Long & Freese, 2006). The moderating effects of school connectedness on the association between a history of CPS involvement and psychological distress and delinquency were examined through the inclusion of two-way interactions in the models. School connectedness was centered on its sample mean to reduce the risk of multicollinearity (Aiken & West, 1991). In the present study, 1279 individuals who did not know whether or not they had histories of family involvement with CPS and 317 individuals who did not know their parents' level of education were excluded from analyses. Those excluded individuals tended to be younger (14.3 vs. 15.3) and had university educated parents (54% vs. 47%). Respondents who

did not know their parents' educational level were also excluded from analyses. Youth who responded "don't know" to parental education tended to be significantly younger (age 14.0 vs. 15.3 years) than those who knew their parents' highest level of education.

## Results

Results of analyses to examine the association between a history of involvement with child protective services (CPS) and symptoms of psychological distress, and the moderating role of school connectedness are outlined in Table 2. Results indicate a significant association between CPS involvement and symptoms of psychological distress. Youth with histories of family involvement with CPS reported greater symptoms of psychological distress than youth without histories of CPS involvement, controlling for age, gender, family structure, parental education, and academic performance (Model 1). Greater school connectedness was significantly associated with fewer symptoms of psychological distress. Earlier analysis not presented in the tables had indicated that youth with histories of family involvement with CPS had significantly lower school connectedness ( $b = -.177$ ,  $s.e. = .05$ ,  $p < .001$ ), compared to youth with no involvement with CPS. Results from the test of interaction between CPS involvement and school connectedness are presented in Model 2. The association between CPS involvement and psychological distress was found to vary significantly with level of school connectedness. The moderating effect is illustrated in Figure 1, which shows that differences in the psychological distress of youth with family histories of involvement with CPS and youth without such family histories declined as the level of school connectedness increased.

Figure 1. Psychological distress by CPS involvement and school connectedness (mean and mean  $\pm 1$  standard deviation)

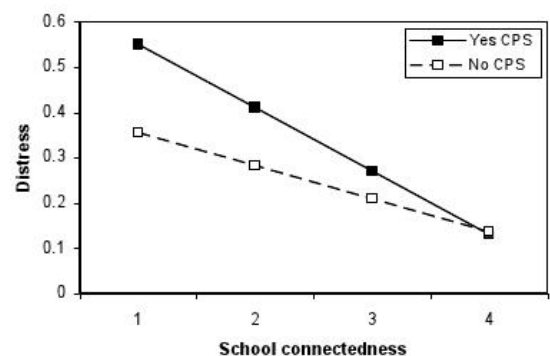


Table 2. Psychological distress regressed on history of family involvement with CPS and controlling for socio-demographic factors

	Model 1	Model 2
Involvement with CPS	.049* (.019)	.041* (.019)
Age	.014*** (.003)	.015*** (.003)
Female	.113*** (.009)	.114*** (.010)
Two parent household	-.029* (.013)	-.030* (.013)
Parental education (ref. = university degree)		
High school or less	.016 (.016)	.017 (.016)
Some college/university	.022 (.012)	.023 (.014)
Avg. school grade of A	-.005 (.013)	-.003 (.013)
School connectedness (centered)	-.088*** (.010)	-.073*** (.011)
CPS involve X School connectedness		-.067** (.023)
Constant	-.086	-.089
R2	.154	.160

N=3152; standard errors in brackets \*\*\*p<.001, \*\*p<.01, \*p<.05.

Results of the hurdle regression model to examine the association between family involvement with CPS and delinquency are presented in Table 3. The logit component of the model represents the odds of no delinquent acts and compares youth with zero delinquent acts to those with at least one delinquent act. The zero- truncated negative binomial (ZTNB) component of the model represents the count or rate of delinquent acts among youth who reported engaging in delinquency. Results of the logit component indicate that youth with family involvement with CPS had significantly lower odds of no delinquency (OR=0.62, 95% CI=0.46-0.83) than their counterparts with no family involvement with CPS, controlling for age, gender, family structure, parental education, academic performance, and school connectedness. School connectedness was associated with greater odds of no delinquency (OR=1.20, 95% CI=1.04-1.40). Results from the ZTNB component of the model indicate that youth with family involvement with CPS reported greater numbers of delinquent acts than youth with no history of involvement with CPS (IRR=1.51, 95% CI=1.11-2.03). Specifically, youth with family involvement with CPS reported rates of delinquency that were 1.51 times that of youth without family involvement with CPS. Greater school connectedness was associated with greater odds of no delinquency, and smaller rates of delinquency among youth who engaged in delinquency. An examination of the moderating effect of school connectedness on the association between family involvement with CPS and youth delinquency found no significant effect.

## Discussion

Not all youth with histories of adversity, including maltreatment, experience psychological distress and engage in delinquency, suggesting that there are factors that enhance or reduce risk among youth. Despite the importance of schools in the lives of youth, little research has focused on the role of school connectedness in the link between histories of family involvement with CPS and youth outcomes. This study focused on examining whether or not school connectedness significantly moderated the association between CPS involvement and adolescent adjustment. Findings from this study were consistent with findings of other studies that link involvement with CPS to psychological distress (e.g., Buckner et al., 2004; Burge, 2007; Burns et al., 2004; Hamilton et al., 2011; Harman et al., 2000; Hussey et al., 2006) and delinquency (e.g., Stouthamer-Loeber et al., 2001; Crooks et al., 2007) among youth. Youth with histories of family involvement with CPS reported greater symptoms of psychological distress and greater rates of delinquency compared to youth without such histories. The present study expands the literature by highlighting school connectedness as a protective factor for youth with histories of family involvement with CPS. At low levels of school connectedness, youth with CPS involvement had greater psychological distress than youth without CPS involvement. Such differences in psychological distress, however, disappeared when youth reported higher levels of school connectedness. This finding suggests that youth with a strong sense of connection

Table 3. Delinquency regressed on history of family involvement with CPS and controlling for socio-demographic factors

	Logit model (no delinquency)		Zero-truncated negative binomial model (count)	
	OR	95% CI	IRR	95% CI
Involvement with CPS	.62**	.46-.83	1.51**	1.11-2.03
Age	.87***	.82-.93	1.09**	1.03-1.16
Female	1.88***	1.56-2.27	.72**	.58-.90
Two parent household	1.02	.80-1.30	.94	.75-1.18
Parental education (ref. = university degree)				
High school or less	1.04	.76-1.43	.87	.67-1.13
Some college/university	1.07	.84-1.36	.88	.66-1.18
Average school grade of A	1.59***	1.30-1.94	.65***	.51-.82
School connectedness	1.20*	1.04-1.40	.77***	.66-.89
N	3170		1233	

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ ; OR = Odds ratio; IRR = Incidence-rate ratio

to school may be able to reduce the long-term risk of psychological distress that can accompany CPS involvement. The significance of school connectedness as a protective factor for youth with CPS involvement did not extend to delinquency. In contrast to findings for psychological distress, the connections and sense of belonging that youth experience within schools did not significantly decrease the risk of delinquency among youth with CPS involvement. This suggests that school connectedness may have a stronger protective role against internalizing rather than externalizing behaviors. Other school-related factors are worth investigating to determine their role in associations between CPS involvement and delinquency. The potentially long-term implications of involvement with CPS are evident in that the significant associations were between any history of family involvement with CPS and current symptoms of psychological distress and delinquency. These findings within a community sample, rather than a sample of youth currently within CPS, also highlights the need for CPS to consider the mental health service needs of children and youth early in the care process to reduce further accumulation of risks as individuals' transition through developmental stages. Results also highlight the need for CPS to consider youth connections to schools and to facilitate the continuity of positive connections when making care decisions. Stronger school connectedness appears to promote resilience and may help to protect youth from cumulative risks (Gilligan, 2000) associated

with histories of involvement with CPS. Despite the strengths of the current study, several study limitations are worth noting. First, the nature of involvement with CPS is unknown because no survey question directly asked about abuse or neglect and there was no access to administrative records within CPS. A direct question was not asked because the large-scale nature of the study, complex sample design, and ethical requirements to report cases of abuse prevented detailed questions on maltreatment. Given that involvement with CPS usually signals some concern about child maltreatment (Trocmé et al., 2001), there is an assumption that some level of maltreatment led to CPS involvement. The reason for involvement, however, could have been unrelated to maltreatment or may have been due to unsubstantiated allegations. The question also asked about history of family involvement with CPS, which not all respondents may be aware of and could account for "don't know" responses. Respondents who did not know if there was a history of family involvement with CPS were dropped from analysis, which might have led to some bias. Second, non-participants or adolescents whose parents failed to provide consent for participation may have been more likely to have a history of maltreatment, thus biasing the sample. However, as maltreatment was not the main focus of the survey, the likelihood of the latter was reduced. Third, the sample was restricted to students within the regular school systems and, therefore, does not represent approximately seven percent of students in alternate

types of schools and in remote communities (Paglia-Boak et al., 2009). Fourth, no information was available on the race/ethnicity of respondents and thus it could not be controlled within the analyses. Fifth, a standardized measure of school connectedness was not available within the survey. The items used, however, reflect an aspect of school belonging and have good reliability. Finally, the study was based on cross-sectional data and therefore temporal order could not be determined. The exact time when CPS involvement occurred was unknown. To develop into successful adults, youth with histories of family involvement with CPS need to receive effective services for any emotional and behavioral problems that arise. The results of this study indicate that schools may also be an important foundation from which to target interventions aimed at youth with family adversity. Strengthening the connections that youth with CPS involvement have to schools may contribute significantly to reducing the risks

of negative outcomes. Youth who sense that adults within schools care about them and who feel that they are a part of a particular school are likely to do well in school. Success in school is likely to promote a positive dynamic of increasing opportunities that can place youth on a path to future success rather than greater risk and negative outcomes (Glover, Burns, Butler, & Patton, 1998) Youth with histories of family involvement with CPS include those who experienced out-of-home placements, those who remained within the home, and those whose families were part of an investigation only. There are still many more children and youth who experience adversities, but do not come in contact with CPS (MacMillan, Jamieson, & Walsh, 2003). This suggests that strengthening connections to schools among youth on a broader scale combined with effective mental health services may be rewarded with reductions in negative outcomes among youth.



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