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School connectedness and high school graduation among maltreated youth

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BOSTON UNIVERSITY
SCHOOL OF PUBLIC HEALTH

Thesis

**SCHOOL CONNECTEDNESS AND HIGH SCHOOL
GRADUATION AMONG MALTREATED YOUTH**

by

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ABSTRACT

Maltreated youth have higher rates of school dropout than their non-maltreated peers. School connectedness is a modifiable predictor of school success. We hypothesized maltreated youth's school connectedness (supportive relationships with adults at school and participation in school clubs) would be positively associated with high school graduation. We included youth with at least one Child Protective Services (CPS) report by age twelve from Longitudinal Studies of Child Abuse and Neglect, a prospective cohort study. Participation in extracurricular activities and adult relationships reported at age 16, high school graduation/General Education Development (GED) status reported at age 18, and demographics were provided by youth and caregivers. Maltreatment data were coded from CPS records. The outcome was graduation/receipt of GED. Multivariable logistic regressions examined the association between school connectedness and graduation/receipt of GED, controlling for confounders. In our sample of 318 maltreated youth, 73.3% graduated. School club was the only activity with a statistically significant association with graduation in bivariate analysis. Supportive relationships were not significantly associated with graduation, though only 10.7% of maltreated youth identified supportive relationships with adults at school. Maltreated youth who participated in school clubs had 2.54 times the odds of graduating,

adjusted for study site, gender, poverty status, caregiver high school graduation status, and age at first CPS report (95% CI: [1.02, 6.33]). Few maltreated youth reported relationships with adults at school, and additional efforts may be needed to support these vulnerable youth. School club participation may represent an opportunity to modify maltreated youth's risk for school dropout.

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INTRODUCTION

In the United States in 2014, Child Protective Services (CPS) received approximately 3.6 million reports of child maltreatment, involving 6.6 million children (U.S. Department of Health & Human Services, 2016). Experiencing maltreatment can change children's brain development and physiology, impact learning and behavior, and increase their risk for poor physical and mental health (Shonkoff et al., 2012). The impact of maltreatment on a child's development and behavior may contribute to their poor academic outcomes. For example, compared to their peers, maltreated children have worse reading (Perez & Widom, 1994) and language skills (Noll et al., 2010; Viesel, Freer, Lowell, & Castillo, 2015), lower grades (Eckenrode, Rowe, Laird, & Brathwaite, 1995; Smith, Park, Ireland, Elwyn, & Thornberry, 2013), and lower standardized test scores (Eckenrode et al., 1995; Kurtz, Gaudin, Wodarski, & Howing, 1993), and are at increased risk for grade retention (Eckenrode et al., 1995; Perez & Widom, 1994; Shonk & Cicchetti, 2001), special education placement (Jonson-Reid, Drake, Kim, Porterfield, & Han, 2004; Shonk & Cicchetti, 2001), suspension/expulsion (Perez & Widom, 1994), and high school dropout (Noll et al., 2010; Perez & Widom, 1994; Smith et al., 2013; Tanaka, Georgiades, Boyle, & MacMillan, 2015).

Supporting educational success represents an important opportunity to promote a positive trajectory for maltreated youth, since educational achievement and health are positively correlated. The American Academy of Pediatrics identifies educational achievement as an outcome representing lifelong well-being (Shonkoff et al., 2012), and high school graduation has been identified as an important and well-studied marker of

educational attainment and future health for children in general (Freudenberg & Ruglis, 2007). To date, studies have explored factors associated with maltreated youths' educational outcomes, such as type (Coohey, Renner, Hua, Zhang, & Whitney, 2011; Jonson-Reid et al., 2004; O'Hara et al., 2015; Perez & Widom, 1994; Tanaka et al., 2015) and chronicity (Coohey et al., 2011; Herrenkohl, Herrenkohl, & Egolf, 1994) of maltreatment; caregiver (Herrenkohl et al., 1994), home, and school instability (Eckenrode et al., 1995); and child intelligence (Coohey et al., 2011; Herrenkohl et al., 1994). However, many of these factors may not be amenable to intervention; as such, a greater understanding of potentially modifiable ways to promote youths' educational success is needed.

Supporting school connectedness may be a modifiable way to promote educational achievement for children. The Centers for Disease Control and Prevention (2009) explain that school connectedness — defined as students' belief “that adults and peers in the school care about their learning as well as about them as individuals” (p. 3) — promotes positive educational and health outcomes, and it identifies four key areas to promote school connectedness for youth: supportive relationships with adults at school, positive peer groups, youths' commitment to education, and school climate. The National Research Council and Institute of Medicine also recognize the important role of school connectedness and supportive relationships with teachers and peers for all adolescents (2004). Fostering supportive relationships with adults at school and positive peer groups may be areas most amenable to intervention, and participation in school activities likely supports positive relationships with adults at school and peers. School-

based extracurricular activities are known to coincide with a child's peer networks (Mahoney, 2014) and having pro-social peers may partially explain the association between a sense of school belonging and participation in school clubs (Fredricks & Eccles, 2005). Extracurricular activities also have known academic benefits; participation in school-based activities is associated with decreased school dropout among non-maltreated children at high risk for dropout (Mahoney & Cairns, 1997).

School connectedness, including participation in school activities and supportive relationships with adults at school, may be especially beneficial for maltreated youth who often are growing up in dysfunctional home environments. One qualitative study of 22 women sexually abused as children revealed that supportive relationships at school and church promoted resilience, and involvement in school activities promoted self-esteem (Valentine & Feinauer, 1993). However, few quantitative studies have investigated whether supportive relationships with adults at school or participation in extracurricular activities promote educational success for maltreated youth (Perkins & Jones, 2004). The objectives of this study therefore were to understand if markers of school connectedness—supportive relationships with adults at school and participation in school-based extracurricular activities—are associated with high school graduation for maltreated children. We hypothesized that supportive relationships with adults at school (compared to relationships with other adults or no adults) and participation in school clubs (compared to participation in no activities) would be positively associated with high school graduation for maltreated youth.

METHODS

Sample

We conducted a secondary analysis of data collected by the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN) (Runyan et al., 2014), prospective cohort studies designed to understand the precursors and effects of child maltreatment (Runyan et al., 1998). LONGSCAN enrolled 1,354 children from five sites in the United States; the majority of children had a known history of maltreatment or were at high risk for maltreatment (Runyan et al., 1998). Data collection occurred from July 1991 to January 2012, and children and primary caregivers were interviewed separately when the children were ages 4, 6, 8, 12, 14, 16, and 18 years of age (Larrabee & Lewis, 2016). Information about children's maltreatment histories were coded from CPS records with the Modified Maltreatment Classification System (Barnett, Manly, & Cicchetti, 1993; English & The Longscan Investigators, 1997). Coders were trained to 90% agreement and found to have good reliability with a random subsample of CPS reports; kappa statistics for all types of maltreatment were greater than .70 (Dubowitz et al., 2011). For our cohort study, we included youth who had at least one CPS report for maltreatment by age twelve and available data about our outcome, high school graduation status.

Dependent variable

The outcome of interest, high school graduation, was dichotomous: whether youth had graduated high school/obtained a General Education Development (GED) at the age 18 interview. In response to the question, "Did you receive a high school diploma? Or pass a high school equivalency test, like a GED?" youth were considered to have the

outcome *graduate* if they reported, “Received diploma” or “Passed equivalency test or got GED.” If this response was missing, but at the age 18 caregiver telephone interview the caregiver answered *yes* to “Has [the youth] graduated from high school or received a GED?” youth were considered to have the outcome *graduate*. Youth were considered to have the outcome *drop out* if they responded *yes* to the question, “Have you dropped out of school?” and reported not receiving a high school diploma or GED. Youth and caregivers were also asked if the youth were still currently in school. Youth in school were effectively excluded in order to reduce potential misclassification bias, as it was unknown whether these students would ultimately graduate or drop out of school.

Independent variables

Extracurricular activities. At age 16, youth were asked, “Which of the following things have you done in the past year? In the past year have you... Been a part of sports team? Been a member of a club at school? Been a part of a drama, music, dance or other performing arts group? Been part of a scout troop? Been part of a volunteer group or participated on volunteer activities? Been part of a religious or church group?” Youth responded *yes* or *no* to each activity. Participation in each activity (compared to participation in no activities) and participation in at least one activity (compared to participation in no activities) were examined as predictors. School club was considered the only school-based activity and marker of school connectedness, but other available activities served as comparators and were examined to determine if they were associated with the outcome variable.

Supportive relationship with adult. At age 16, youth were asked, “Think about the adult in your life, other than a parent or guardian, who you feel closest to or who has helped you the most. Who is this adult?” Based on a youth’s response, a variable with three categories, *supportive adult*, was created. If youth responded, *a teacher, coach, or other adult at school*, this was categorized as an *adult at school*. If youth chose responses, *your grandfather, your grandmother, another relative, or another adult* they were categorized as *another adult*. If youth responded, *there is no one like this*, then this was considered *no adult*.

Sample characteristics

Sample descriptors included study site, youth gender and race/ethnicity, poverty status, and caregiver high school graduation status. Youth were considered to be impoverished if the caregiver responded *yes* to at least one of the following questions at the age 12 interview: “Does anyone in this household receive...TANF (Temporary Aid to Needy Families)? Food stamps? WIC (Women, Infants, and Children)? Subsidized housing, including public housing or Section 8 housing? Medicaid? Reduced or free lunch for children?” Caregivers were categorized as graduating high school if they reported receiving their high school diploma or GED.

Maltreatment type, age at first CPS report for maltreatment, and total number of CPS reports by age 12 were also used to characterize the sample. Maltreatment types included *neglect* (lack of supervision or failure to provide adequate food; clothing; shelter; medical, dental, and mental health care; or hygiene), *physical abuse*, *sexual abuse*, *emotional maltreatment*, *educational maltreatment*, *moral-legal maltreatment*

(caregiver involves child in criminal activity; caregiver knows child is involved in criminal activities, but does not intervene, etc.), and *drugs/alcohol* (drug use in home, caregiver overdoses, etc.) (English & The Longscan Investigators, 1997). Moral-legal maltreatment and drugs/alcohol were combined in the category, *other*. Number of total CPS reports and age at first CPS report were variables used to reflect maltreatment severity. A youth's total number of CPS reports through age 12 was categorized into quartiles. Age of youth at first referral for any maltreatment type was categorized by developmental stage: *less than one year old*, *one to less than five years old*, and *five to twelve years old*.

Analysis

Analyses were performed using SAS 9.4 (SAS Institute Inc., Cary, NC). Frequencies and proportions described the sample. Due to substantial missing data for multiple variables, missing data were imputed with multiple imputation by chained equations and 20 iterations using PROC MI and PROC MIANALYZE in SAS; data were missing at random as a function of study site. The imputed data were used with simple logistic regression models to analyze the associations between categorical sample characteristics, school connectedness variables, and graduation. The association between each individual extracurricular activity and graduation was examined, and the association between the number of extracurricular activities and graduation was explored as a potential dose-response relationship. Sample characteristics were subsequently included in the multivariable model as covariates if their inclusion changed the crude estimate by greater than ten percent (Maldonado & Greenland, 1993) or theory and prior literature

supported their role as potential confounders. Each imputed extracurricular activity and the supportive adult variable were then entered into separate multiple logistic regression models to examine their potential associations with graduation, adjusting for confounders of study site, youth gender and poverty status, caregiver high school graduation status, and age at first CPS report. Absence of collinearity among confounders was confirmed with variance inflation factors less than 10 for each variable in each imputed iteration. *P-values* < 0.05 were considered statistically significant for all hypothesis testing.

RESULTS

Sample characteristics

The baseline LONGSCAN sample of 1,354 children was restricted to 896 youth who had at least one CPS report for maltreatment by age 12. Among this group, 318 maltreated youth had the outcome of interest: 85 youth had dropped out of school and 233 children graduated or obtained their GED by age 18. Of note, of the 578 youth excluded from the sample, 257 youth reported currently going to school, 32 reported not currently going to school, and 289 youth had missing responses; 10 caregivers reported the youth was currently in school when the youth's response was missing. Youth included in the sample and excluded youth were similar in regards to race/ethnicity, poverty status, caregiver high school graduation status, participation in each extracurricular activity, supportive adult, type of maltreatment, age at first CPS report, and number of CPS reports; the only statistically significant differences were in regards to study site and gender with slightly greater proportion of females included in the

sample.

The final sample of 318 maltreated youth was 57.5% female and 49.5% Black (Table 1). About three quarters of youth were living in poverty, and approximately three quarters of caregivers had graduated high school or received a GED. The most common type of maltreatment was neglect (87.4%). Approximately one quarter of children had one CPS report, while about one fifth had 2 CPS reports, one quarter had 3 to 5 CPS reports, and about one quarter had 6 CPS reports or more (range 1–18 CPS reports). Almost half of children were less than one year old at the time of their first CPS report.

In regards to school connectedness, youth participated in a mean of 1.99 extracurricular activities (standard deviation = 1.59; range 0–6 activities), and 78.8% of youth participated in at least one extracurricular activity. The most common extracurricular activity was a sports team (48.9%), and approximately equal proportions of youth participated in a religious group (39.6%), performing arts group (38.7%), school club (34.4%), or volunteer group (32.9%). Few youth (4.5%) participated in a scout troop. Only 10.7% of youth identified an adult at school as the supportive adult, compared to 69.9% who chose another adult, and 19.4% of youth who had no such adult in their lives.

Bivariate analyses

Table 2 shows bivariate, unadjusted associations between sample characteristics and school connectedness and high school graduation (imputed data shown for variables with missing values.) Youth who graduated high school did not differ significantly from youth who dropped out in regards to study site, gender, race/ethnicity, poverty status,

caregiver graduation status, maltreatment types, and number of CPS reports. Youth who were age one to less than five years old at the time of their first CPS report had 0.49 times the odds of graduating high school, compared to youth who were less than one year old (95% confidence interval (CI): [0.28, 0.83] $p = 0.072$). Youth who identified a supportive adult at school had 2.12 times the odds of graduating (95% CI: [0.59, 7.67], $p = 0.252$) and youth who identified another adult had 1.23 times the odds of graduating (95% CI: [0.62, 2.42], $p = 0.558$) compared to youth who identified no adults, though these associations were not statistically significant.

Participation in a school club (compared to no activities) had the strongest and the only statistically significant association with high school graduation (OR=2.29, 95% CI: [1.05, 4.97], $p = 0.037$). Youth who participated in any extracurricular activity compared to no activities had 1.63 times the odds of graduating from high school, but this was not statistically significant (95% CI: [0.85, 3.11], $p = 0.141$). Youth who participated in two or more activities compared to no activities had a higher odds of graduating (OR=1.95, (95% CI: [0.98, 3.88]) than youth who participated in one activity compared to no activities (OR=1.11, (95% CI: [0.51, 2.42])). However, a dose-response relationship between number of extracurricular activities and graduation was not found: OR for participation in one activity was 1.11 (95% CI: [0.51, 2.42]), OR for participation in two activities was 2.16 (95% CI: [0.88, 5.31]), OR for participation in three activities was 1.53 (95% CI: [0.65, 3.63]), and OR for participation in four or more activities was 2.41 (95% CI: [0.92, 6.28]). Maltreated youth who reported a supportive relationship with an adult at school had 6.05 times the odds of participating in a school club (95% CI:

[1.18, 30.89], $p = 0.031$) compared to youth with no other adult in their lives.

Multivariable analyses

Multivariable analyses for the association between school connectedness and high school graduation with the imputed data are shown in Table 3. Participation in a school club had the strongest association and only statistically significant association with graduation, after adjusting for confounders. Maltreated youth who participated in a school club had 2.54 times the odds of graduating high school, compared to youth who did not participate in any activities, adjusting for study site, gender, poverty status, caregiver high school graduation status, and age at first CPS report (95% CI: [1.02, 6.33], $p = 0.045$). Multivariable associations between supportive adult relationships and graduation suggested beneficial impacts, but were not statistically significant. Maltreated youth who identified a supportive adult at school had 1.96 times the odds of graduating (95% CI: [0.54, 7.11], $p = 0.308$) and youth who identified another adult had 1.21 times the odds of graduating (95% CI: [0.59, 2.50], $p = 0.603$) compared to youth who reported no adults, adjusting for confounders.

DISCUSSION

In this secondary analysis of a prospective cohort study, our results indicate that participation in a school club was associated with a significantly increased odds of high school graduation. However, neither supportive relationships with an adult at school nor any adult had a statistically significant association with graduation, which may have been due to the small size of our sample.

Notably, in our sample, few maltreated youth identified a supportive adult at school, and more youth identified no other adult in their lives than an adult at school. This is concerning as supportive relationships with teachers can promote school success. For example, a national survey of adolescents found that supportive relationships with teachers were related to future academic achievement, even after controlling for prior achievement (Crosnoe, Johnson, & Elder, 2004). Schools with high rates of low-income students that reported high levels of teacher support and high academic expectations by teachers had decreased dropout rates (Jia, Konold, & Cornell, 2016). As maltreated youth often live in dysfunctional home environments, supportive adult relationships outside the home may be especially important for this vulnerable population. Students' perceived support from teachers also appears to be related to their interest in school, adherence to classroom norms (Wentzel, 1998), and perception of school belonging (Roeser, Midgley, & Urdan, 1996). Due to the known benefits of teacher support, opportunities for maltreated youth to develop these supportive relationships should be explored.

Our results demonstrated that participation in school clubs had the strongest association with high school graduation. School-based activities may have distinct benefits compared to involvement with other activities due to their ability to promote school connectedness. The particular benefit of school-based activities may also partially explain why we did not find a dose-response relationship between number of activities and graduation. Our results also suggested that the benefits of participating in a school club may be related to having a close relationship with a school club advisor, as school

club participation was associated with supportive relationship with adult at school. In addition, participation in school activities may help support maltreated youth through other known correlates of school activity involvement, including a sense of school belonging, higher self-worth, less depressive symptoms, and prosocial peers, though this was unable to be assessed in our study (Fredricks & Eccles, 2005). Maltreated youth may have difficulty forming positive peer relationships, and an Australian study found that young maltreated children are less liked and less accepted by their peers (Anthonysamy & Zimmer-Gembeck, 2007). Therefore, participation in school clubs may represent an opportunity for maltreated youth to gain acceptance and develop school connectedness. More investigation is needed as to the potential benefits of school activities, the role of peer acceptance, and how to encourage school activity participation for maltreated youth.

Interpretation of our study findings has several limitations. While our study included a geographically and socioeconomically diverse sample, the generalizability of this study's findings is limited by LONGSCAN's purposive sampling design. As a prospective cohort study, differential loss to follow-up may explain why more maltreated children had the outcome of graduation/GED than drop out in our analysis; children who dropped out of school may also have been more likely to have dropped out of the study. In addition, a significant proportion of youth who were excluded from the sample because they did not have the outcome variables of interest (graduated, received GED, or dropped out) reported they were still in school at age 18. Since the outcome data was only collected until age 18, it is unknown whether youth in school at age 18 ultimately

dropped out, graduated, or received a GED at a later age. Similarly, some youth who reported dropping out at age 18 and did not yet have a GED, could have received their GED at a later age. We were also unable to detect potential differences in aspects of extracurricular activity participation, such as the length of time of participation or the commitment involved. It is also possible that the association between school club participation and graduation is confounded by attendance. In addition, while we only categorized school club as a school-based activity, it is also possible that other extracurricular activities, such as sports teams, performing arts groups, or volunteer groups, were school-based for some youth, resulting in misclassification bias. However, two activities that are unlikely to be school-based (scout troop and religious group) had lower point estimates than school clubs.

CONCLUSION

Maltreated youth are at high risk for poor educational outcomes, such as school dropout. School connectedness, including supportive relationships with adults at school and participation in school clubs, may help support educational success for maltreated youth. However, in our sample, few maltreated youth reported relationships with adults at school, suggesting that additional efforts are needed to support these vulnerable youth. School club participation was associated with significantly increased odds of high school graduation and may represent a promising opportunity to intervene upon maltreated youth's future trajectory of poor health and well being. Future studies should further explore potential benefits of participation in school activities for maltreated youth

as well as other ways to promote school connectedness and ultimately, educational achievement.

Table 1: Characteristics of Maltreated Youth

	N=318 n (%)
Demographics	
Study site	
<i>East</i>	53 (16.7%)
<i>Midwest</i>	21 (6.6%)
<i>Northwest</i>	79 (24.8%)
<i>South</i>	42 (13.2%)
<i>Southwest</i>	123 (38.7%)
Gender	
<i>Female</i>	180 (57.5%)
<i>Male</i>	133 (42.5%)
Race/Ethnicity	
<i>Black</i>	155 (49.5%)
<i>White</i>	94 (30.0%)
<i>Other</i>	64 (20.5%)
Poverty	
<i>Yes</i>	183 (78.2%)
<i>No</i>	51 (21.8%)
Caregiver graduated/GED	
<i>Yes</i>	180 (74.7%)

<i>No</i>	61 (25.3%)
Maltreatment history	
Maltreatment type	
<i>Neglect</i>	278 (87.4%)
<i>Other</i>	205 (64.5%)
<i>Emotional maltreatment</i>	170 (53.5%)
<i>Physical abuse</i>	155 (48.7%)
<i>Sexual abuse</i>	78 (24.5%)
<i>Educational maltreatment</i>	39 (12.3%)
Number of CPS Reports	
<i>1</i>	78 (24.5%)
<i>2</i>	61 (19.2%)
<i>3–5</i>	87 (27.4%)
<i>6 or more</i>	92 (28.9%)
Age at first CPS report	
<i>Less than one year old</i>	146 (45.9%)
<i>One to less than five years old</i>	136 (42.8%)
<i>Age five to twelve years old</i>	36 (11.3%)
Educational outcome	
Graduated/Received GED	233 (73.3%)
Dropped out	85 (26.7%)

School connectedness	
Extracurricular activity participation	
<i>Sports team</i>	
Yes	108 (48.9%)
No	113 (51.1%)
<i>Religious group</i>	
Yes	88 (39.6%)
No	134 (60.4%)
<i>Performing arts group</i>	
Yes	86 (38.7%)
No	136 (61.3%)
<i>School club</i>	
Yes	76 (34.4%)
No	145 (65.6%)
<i>Volunteer group</i>	
Yes	73 (32.9%)
No	149 (67.1%)
<i>Scout troop</i>	
Yes	10 (4.5%)
No	212 (95.5%)
<i>Any activity</i>	
Yes	175 (78.8%)

<i>No</i>	47 (21.2%)
Supportive adult	
<i>Adult at school</i>	23 (10.7%)
<i>Another adult</i>	151 (69.9%)
<i>No adult</i>	42 (19.4%)

Table 2: Odds of Graduation by Demographics, Maltreatment History, and School Connectedness

	Graduated N=233	Dropped Out N=85	<i>P-value</i>
	OR (95% CI)		
Study site			
<i>East</i>	0.49 (0.23, 1.01)		0.587
<i>Midwest</i>	0.46 (0.17, 1.27)		0.598
<i>Northwest</i>	0.50 (0.26, 0.96)		0.592
<i>South</i>	0.51 (0.23, 1.14)		0.749
<i>Southwest [ref]</i>			
Gender			
<i>Female</i>	1.00 (0.60, 1.65)		0.997
<i>Male [ref]</i>			
Race/Ethnicity			
<i>Black</i>	1.58 (0.90, 2.78)		0.113
<i>Other</i>	1.38 (0.68, 2.78)		0.375
<i>White [ref]</i>			
Poverty	0.73 (0.35, 1.49)		0.384
Caregiver graduated/GED	1.55 (0.87, 2.76)		0.134
Maltreatment type			
<i>Neglect</i>	0.77 (0.35, 1.70)		0.519

<i>Other</i>	0.99 (0.59, 1.66)	0.957
<i>Emotional maltreatment</i>	1.25 (0.76, 2.05)	0.383
<i>Physical abuse</i>	1.10 (0.67, 1.80)	0.717
<i>Sexual abuse</i>	0.99 (0.56, 1.76)	0.965
<i>Educational maltreatment</i>	0.70 (0.34, 1.43)	0.322
Number of CPS reports		
<i>1 [ref]</i>		
<i>2</i>	1.54 (0.71, 3.38)	0.302
<i>3–5</i>	1.40 (0.70, 2.81)	0.450
<i>6 or more</i>	0.91 (0.47, 1.75)	0.198
Age at first CPS report		
<i>Less than one year old [ref]</i>		
<i>One to less than five years old</i>	0.49 (0.28, 0.83)	0.072
<i>Age five to twelve years old</i>	0.64 (0.28, 1.49)	0.845
Extracurricular activity participation		
<i>Sports team</i>	1.77 (0.88, 3.56)	0.112
<i>Religious group</i>	1.77 (0.84, 3.74)	0.133
<i>Volunteer group</i>	1.95 (0.91, 4.16)	0.085
<i>School club</i>	2.29 (1.05, 4.97)	0.037
<i>Performing arts group</i>	1.80 (0.86, 3.79)	0.120
<i>Scout troop</i>	1.05 (0.27, 4.06)	0.948
<i>No activity [ref]</i>		

Supportive adult		
<i>Adult at school</i>	2.12 (0.59, 7.67)	0.252
<i>Another adult</i>	1.23 (0.62, 2.42)	0.558
<i>No adult [ref]</i>		

Table 3: Multiple Logistic Regressions for School Connectedness and Graduation

	aOR (95% CI)^a	<i>P</i>-value
Extracurricular activity participation		
<i>Sports team</i>	1.88 (0.87, 4.09)	0.110
<i>Religious group</i>	1.85 (0.82, 4.16)	0.139
<i>Volunteer group</i>	2.08 (0.91, 4.72)	0.082
<i>School club</i>	2.54 (1.02, 6.33)	0.045
<i>Performing arts group</i>	1.94 (0.84, 4.48)	0.120
<i>Scout troop</i>	1.18 (0.24, 5.97)	0.837
<i>No activity [ref]</i>		
Supportive adult		
<i>Adult at school</i>	1.96 (0.54, 7.11)	0.308
<i>Another adult</i>	1.21 (0.59, 2.50)	0.603
<i>No adult [ref]</i>		

^aAdjusted for study site, gender, poverty status, caregiver high school graduation status, and age at first CPS report

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