Center for Advanced Studies in Child Welfare

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REPORT BRIEF

Examining the Association of Children's Academic Performance with Their Exposure to Parental Intimate Partner Violence and Child Maltreatment

Purpose of the Study

This longitudinal investigation explored the association of children's exposure to parental intimate partner violence (IPV) and child maltreatment (CM), as well as combined exposure (IPV-CM), to children's academic achievement and school attendance over time.

Background & Purpose

Studies of children's exposure to both parental intimate partner violence (IPV) and child maltreatment (CM) reveal negative associations with children's social, emotional and behavioral adjustment, health, mental health, and school performance (Evans, Davies & DiLillo, 2008; Kitzmann, Gaylord, Holt & Kenny, 2003; Trickett & McBride-Chang, 1995; Wolfe, Crooks, Lee, McIntyre-Smith & Jaffe, 2003). However, child maltreatment and exposure to parental intimate partner violence experiences commonly co-occur for children, with over half (56.8%) of children in a recent U.S. national survey experiencing exposure to both IPV and CM in their lifetimes (Hamby, Finkelhor, Turner & Ormrod, 2010). Yet little research addresses the individual and combined associations of children's exposure to IPV and/or CM with their success at school.

This longitudinal study addressed this research gap. Specifically, it explored the association of children's indirect exposure to intimate partner violence (IPV) and direct exposure child maltreatment (CM), as well as combined exposure (IPV-CM), to children's academic achievement and school attendance over time. The central question addressed was, "What was the impact over time of children's individual and combined exposure to intimate partner violence and child maltreatment on academic outcomes?" The following research questions were answered:

Child maltreatment and exposure to parental intimate partner violence experiences commonly co-occur for children, with over half (56.8%) of children in a recent U.S. national survey experiencing exposure to both IPV and CM in their lifetimes.

1. *Was the type of exposure (IPV only, CM only, IPV-CM) differentially associated with academic achievement and school attendance over time?*
2. *What combination of factors was significant in determining academic outcomes?*

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Methods

*To understand the associated individual and combined effect of IPV and CM on children's academic outcomes, children's education records were linked to their human service records to create four groups – **CM only**, **IPV only**, **IPV-CM**, and a **comparison group**.*

Through Minn-LInK, four groups were created using Minnesota Department of Human Services (DHS) and Minnesota Department of Education (MDE) 2005-2009 data. The sample totaled 3,572 students (see Table 1) and was divided into three study groups (CM only, IPV only, and IPV-CM) and one comparison group. The ***CM group*** included children who were substantiated victims of child maltreatment but were not exposed to IPV (as measured via the Standardized Decision Making [SDM] Risk Assessment); the ***IPV grou***p included children who were not substantiated victims of child maltreatment but who were exposed to IPV; and the ***IPV-CM group*** included children who were both substantiated victims of child maltreatment and were exposed to IPV. The ***comparison group*** included children in MN who were not involved in child protection; these children were matched to sample groups using propensity score matching based on race, poverty status, grade, and geographical region. Outcome measures included school attendance (annual attendance rate) and reading and math achievement (standardized math and reading tests - Minnesota Comprehensive Assessments [MCA]). Other indicators used in analysis included poverty (eligibility for free/reduced price school lunch), child grade, and child gender. Generalized Estimating Equation (GEE) analysis and multiple regression was conducted in SPSS version 20.

Table 1: Demographic Characteristics of Sample (N=3,572)

Group		n	%
Study groups (n=1,788)			
CM only		1,239	34.6%
IPV-CM		390	10.9%
IPV only		159	4.5%
Comparison group		1,784	50.0%
Initial Grade Level	2nd	627	17.6%
	3rd	630	17.6%
	4th	471	13.2%
	5th	439	12.3%
	6th	456	12.8%
	7th	457	12.8%
	8th	492	13.8%
Race	American Indian/Alaska Native	297	8.3%
	Asian/Pacific Islander	128	3.6%
	Hispanic	311	8.7%
	Black	892	25.0%
	White	1944	54.4%

Findings

All children in the IPV, CM and IPV-CM groups performed significantly worse than the comparison group on standardized reading and math achievement tests, with the IPV only group faring consistently worst across outcome measures. Children in the IPV, CM and IPV-CM groups also attended school at significantly lower rates than those in the comparison group.

School Attendance

A longitudinal analysis using GEE was conducted to assess group differences (CM only, IPV only, IPV-CM, and comparison groups) in annual school attendance rates over three years. Significant differences between groups across time were found (QIC = 191.636, Wald $\chi 2 = 126.637$, $p < .001$). The trajectories for children in each group are shown in Figure 1 below. An examination of pair-wise contrasts indicated that all study groups were significantly different than the comparison group across time periods. Significant differences were not found between the CM only, IPV only, and IPV-CM groups. However, examination of means revealed ascending overall attendance rates from IPV only group (88.98%) to IPV-CM group (90.30%) to CM only group (90.63%), with the comparison group having the highest mean attendance rate (93.51%).

Academic Achievement

Longitudinal analyses, again using GEE, were conducted to assess differences between each group's academic achievement over time as measured by MCA-II reading and math scores. Significant differences between groups across time were found for both reading (QIC = 802.174, Wald $\chi 2 = 95.965$, $p < .001$) and math achievement (QIC = 1095.564, Wald $\chi 2 = 122.382$, $p < .001$). The trajectories for children in each group are shown in Figures 2 and 3.

An examination of overall means indicated reading and math achievement scores in ascending order from IPV only group to IPV-CM group to CM only group, with the comparison group having the highest mean math and reading achievement scores. Average reading achievement scores for each group were 45.96 for IPV only (n=332), 47.46 for IPV-CM (n=833), 49.12 for CM only (n=2,533), and 52.76 for the comparison group (n=3,901). Examination of pair-wise contrasts for reading again indicated significant differences between all study groups and the comparison (see Table 2). Significant differences were also found between the IPV-CM group and the CM only group and between the CM only group and the IPV only group.

Figure 1. Average annual attendance rate for each group over three years

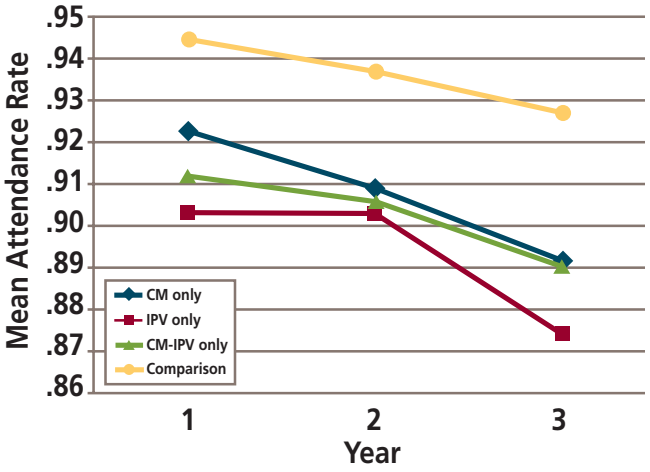

Figure 2. Average reading score for each group over three years

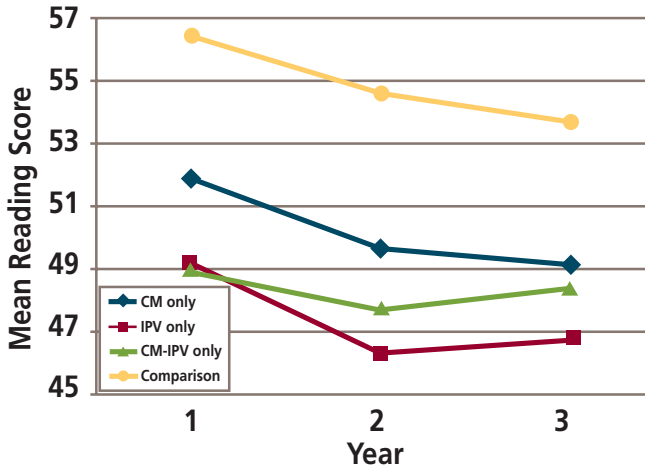

Figure 3. Average math score for each group over three years

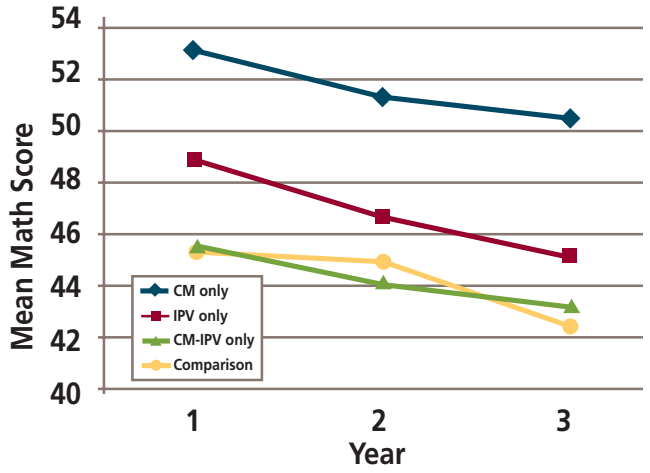

Table 2: Longitudinal Analysis of Group Means, Standard Deviations, and Pairwise Contrasts for Attendance, Reading and Math Achievement.

Outcome	Mean	SD	Contrasts	Mean difference	P value
Attendance	0.92	0.10	Comparison vs. CM	0.03	<.001
			Comparison vs. IPV-CM	0.03	<.001
			Comparison vs. IPV	0.05	<.001
Reading	50.57	13.95	Comparison vs. CM	3.63	<.001
			Comparison vs. IPV-CM	5.30	<.001
			Comparison vs. IPV	6.79	<.001
			IPV+CM vs. CM	-1.66	<.05
			CM vs. IPV	3.16	<.05
Math	46.89	14.76	Comparison vs. CM	4.53	<.001
			Comparison vs. IPV-CM	6.65	<.001
			Comparison vs. IPV	7.84	<.001
			IPV-CM vs. CM	-2.12	<.05
			CM vs. IPV	3.31	<.05

Average math achievement scores for each group were 41.68 for IPV only (n=307), 42.88 for IPV-CM (n=770), 45.00 for CM only (n=2,305), and 49.53 for the comparison group (n=3,444). An examination of pair-wise contrasts for math achievement also indicated significant differences between study groups and the comparison group (See Table 2 below). Additional significant differences were found between the IPV-CM group and the CM only group and between the CM only group and the IPV only group.

Variables Associated with School Achievement

Simultaneous multiple regression analyses were used to determine the best linear combination of group, gender, poverty, and grade level for both average reading and math scores. The models significantly predicted both average reading and math scores [$F(11, 3205) = 34.13$, $p < 0.001$ and $F(11, 3062) = 58.595$, $p < 0.001$] with all variables except grade level significantly contributing to the prediction of each score. R^2 values indicated that 10% of reading and 17% of math scores were explained by the models. These are small but important effects. Beta weights for predicting reading scores suggested that poverty contributed the most to lower average reading scores; being male and violence-exposed also contributed to lower average reading scores. Beta weights for the prediction of average math scores suggested that poverty contributed the most to lower math scores; also important was exposure to IPV only.

Conclusion

This study built upon existing knowledge about the psychosocial, behavioral, and academic consequences of child exposure to IPV and CM and sought to observe these consequences within children's academic experiences. The four group design (IPV only, CM only, IPV-CM, and comparison) revealed differences in academic performance and school attendance. Consistent with prior research, children exposed to both CM and IPV (by themselves or in combination) appear to underperform at school. Research examining why these differences exist suggests several possible factors.

Several authors have stated that the stress of severe domestic violence suppresses children's academic achievement (see Koenen et al., 2003) or that school absences caused by staying home to protect mothers may account for poorer academic achievement (Cunningham & Baker, 2004). The degree of social services intervention may also play a part in these IPV-exposed and non-IPV exposed group differences. Since CM only and IPV-CM violence exposed groups included only children substantiated for CM, further child protection system response was likely mandated. IPV only cases, however, may not have received further services. It is perhaps this loss of intervention that differentiates these children from the others in achievement trajectories. This is not to argue that a child protection intervention is necessary but that perhaps children exposed only to IPV should more consistently receive community-based service interventions of some kind (Edleson, 2006). Screening for adverse childhood experiences, particularly IPV exposure, and devoting greater academic and social service resources to supporting these children may help them recover from the effects of violence exposure and set a more positive course in their future school achievement. In addition, further research may seek to explore more specifically the role of child protection or other service interventions in the outcomes for children exposed to IPV.

Limitations

Data were not collected for the purpose of this research. Human service data was provided by child welfare workers. Because Minnesota has a state-supervised, county-operated system, variations in how information is collected exist. Additionally, it is assumed that some comparison group children were exposed to violence whereas others were not. Finally, effects of grade level on academic achievement scores should be interpreted with some caution because over time test scores decrease for this sample as well as for the entire population of children in the state.

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The Center for Advanced Studies in Child Welfare (CASCW) is a resource for child welfare professionals, students, faculty, policy-makers, and other key stakeholders concerned about child welfare in Minnesota. **Minn-LInK** is a unique collaborative, university-based research environment with the express purpose of studying child and family well being in Minnesota using state administrative data from multiple agencies.

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