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Avery Beatty

University of Rhode Island, avery_beatty@uri.edu

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THE EFFECTS OF EARLY CHILD PHYSICAL ABUSE ON SOCIAL AND
ACADEMIC COMPETENCE IN MIDDLE CHILDHOOD

BY

AVERY BEATTY

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

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OF

AVERY BEATTY

APPROVED:

Thesis Committee:

Major Professor Hans Saint-Eloi Cadely

Melanie Brasher

Ellen Flannery-Schroeder

Nasser H. Zawia
DEAN OF THE GRADUATE SCHOOL

UNIVERSITY OF RHODE ISLAND

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ABSTRACT

Childhood maltreatment is a national health crisis that affected at least 674,000 children and killed 1,720 more in the United States in 2017 alone (Crooks & Wolfe, 2007; U.S. Department of Health & Human Services, 2019). This study specifically focuses on the effects of early childhood physical abuse at age 5 on social and academic competence in middle childhood. Data for this study were derived from a 24-year longitudinal, multisite study called the Child Development Project (CDP) (Lansford et al., 2002). There were 585 children included in the dataset from three sites: Bloomington, Indiana, and Nashville and Knoxville, Tennessee who were recruited upon entry to kindergarten in 1987 and 1988. I utilized linear regressions to examine the relationship between early physical abuse and social and academic competence. Results revealed that physical abuse had a negative association with social competence at age 11 and all academic competence variables assessed at age 12. However, once social competence was controlled for, early physical abuse did not predict most later academic competence variables at age 12, suggesting that social competence mediated the relationship between early physical abuse and certain forms of academic competence. These results contribute to the limited literature on the effects of early physical abuse on social and academic competence in middle childhood.

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CHAPTER 1

INTRODUCTION

Childhood maltreatment, which is characterized by a child's experience of sexual abuse, physical abuse, emotional abuse, or neglect is a national health crisis that affected at least 674,000 children and killed 1,720 more in the United States in 2017 alone (Crooks & Wolfe, 2007; U.S. Department of Health & Human Services, 2019). Research has demonstrated that childhood maltreatment can have detrimental long-term effects on children's psychosocial and cognitive development (Crooks & Wolfe, 2007).

Furthermore, Bolger, Patterson, and Kupersmidt (1998) established that each type of maltreatment, including physical, sexual, and neglect, had an idiosyncratic effect on the development of the child. This present study will specifically focus on the effects of early childhood physical abuse. Childhood physical abuse is categorized by the deliberate use of physical force against a child, either causing bodily harm or having the potential to do so (Arias et al., 2008). Specifically, early child physical abuse has shown to exhibit detrimental outcomes in adulthood, such as substance abuse and diagnosis of personality disorders (Johnson et. al, 1999; Lansford et. al, 2010).

Although longitudinal relationships exist, limited research has examined the effects of early child physical abuse during the middle childhood years. Middle childhood is a particularly important time to investigate these effects because it is a crucial period for the social and cognitive development of a child (McHale, Dariotis, Kauh, 2003). The aim of this present study is to investigate how early childhood physical abuse affects social competence and academic achievement in middle childhood. Additionally, this study will also examine if social competence in middle childhood will mediate the

relationship between early physical abuse and academic achievement in middle childhood. This study will use data from the Child Development Project.

Due to the present research on the relationship between social competence and academic performance, a mediation effect in the relationship between early physical abuse, social competence, and academic performance is expected. Specifically, it is expected that social competence in middle childhood will mediate the relationship between early physical abuse and academic achievement in middle childhood.

CHAPTER 2

REVIEW OF LITERATURE

Middle Childhood and Social Competence

There is limited current research that examines how physical abuse experienced in early childhood affects children socially and cognitively in their middle childhood years. Middle childhood refers to the ages of 6 to 12 and is a crucial period for the social and cognitive development of a child. Essentially, during this time, children are learning the important skills necessary to build strong, appropriate relationships with the people in their life. This is when they are understanding that relationships with others outside the family are meaningful (McHale et al., 2003). As defined by Blumberg, Carle, O'Connor, Moore, and Lippman (2008), social competence refers to a child's ability to interact effectively with peers and adults, demonstrate prosocial actions and compassion, and exhibit appropriate societal practices when trying to influence peer or adult behaviors. Also, McDowell, Kim, O'Neil, and Parke (2002) articulated that when investigating social competence in children, it is important to consider both how well-liked the child is by their peers and specific behavioral traits typically exhibited by the child. These behavioral traits could comprise of classroom disruptiveness, defiance, despondency, physical and emotional aggression, and avoidance of peer and adult interactions (McDowell et al., 2002).

Longitudinal Associations Between Maltreatment and Social and Academic Competence

Much of the existing literature examined the longitudinal associations between early childhood physical abuse and social and cognitive deficits in adolescence, rather

than studying these associations from early to middle childhood. Using the same community-based sample that is used in the present study, Lansford et al. (2002) investigated the effect of physical maltreatment in the first five years of life on psychological, behavioral, and academic outcomes when the children entered high school. Their results indicated that adolescents who experienced physical abuse had lower standardized language art test scores and more absences and suspensions than adolescents with no physical maltreatment history. Additionally, their results demonstrated that adolescents physically maltreated within the first five years of life exhibited more aggression and experienced more internalizing disorders. Elliott et al. (2005) demonstrated that adolescents who experienced parental physical abuse within the last year prior to data collection rated themselves as more socially isolated from both their friends and their school compared to adolescents with no physical maltreatment.

Furthermore, most of the research on the effects of early childhood maltreatment does not delineate different subsets of maltreatment, such as physical abuse and sexual abuse, and researchers often combine the separate experiences of maltreatment as one variable. Kim and Cicchetti (2004) examined social competence in children with a history of maltreatment ($n = 206$) and children with no history of maltreatment ($n = 139$). The researchers specifically articulated that they focused on maltreatment compared to no maltreatment and did not investigate differences across maltreatment subtypes. Their results revealed that maltreated children exhibited fewer socially appropriate behaviors in peer interactions than children that were not maltreated. The social competency deficits observed in these children were also associated with an increase in internalizing and

externalizing behaviors, such as anxiety, overt aggression, withdrawal, and delinquent behaviors.

Additionally, Alink, Cicchetti, Kim, and Rogosch (2012) investigated the effects of childhood maltreatment on the child's social functioning in academic settings. The researchers measured all subsets of maltreatment as one variable and all maltreated children were consequently put into one group. Their results demonstrated that maltreated children greatly struggled with social functioning in school compared to non-maltreated children. Particularly, maltreated children displayed significantly fewer prosocial behaviors, which were operationalized as being considerate, interested, helpful, and cooperative, compared to non-maltreated children. Instead, maltreated children showed higher levels of verbal abuse and deliberately instigating peers compared to non-maltreated children. Furthermore, Manly, Cicchetti, and Barnett's (1994) results demonstrated that more frequent rates of maltreatment were associated with increased behavior problems and a stronger likelihood to aggress and initiate fights. This also coincided with Bolger, Patterson and Kupersmidt's (1998) findings that the more a child was maltreated, the lower their social preference scores were.

Moreover, Romano, Babchishin, Marquia & Fréchette (2015) conducted an extensive literature review that examined the relationship between early maltreatment and social competence and educational outcomes. The majority of maltreatment experiences that they reviewed included sexual, physical, and neglectful abuse that primarily occurred within the familial environment. Their literature review results demonstrated that maltreated children experienced academic deficits as well as social competence difficulties compared to children with no maltreatment. Specifically, children with a

history of maltreatment had lower grades and were more likely to be enrolled in special education courses, as well as exhibit higher levels of anxiety, aggression towards others, social skills deficits, and difficulty forming relationships. Additionally, Eckenrode, Laird, and Doris (1993) longitudinally investigated standardized test scores, total suspensions, and repetition of grades in maltreated children ($n = 420$) and non-maltreated children ($n = 420$) from kindergarten through senior year. The majority of children had their first substantiated report of maltreatment by the time they were 5.5 years old. Additionally, the Iowa Standardized Test scores in reading and math were analyzed when children were between 9 and 10 years old, with maltreated children scoring significantly lower in reading and math compared to their peers with no maltreatment.

Most recently, Raby et al. (2019) examined the effect of maltreatment in the first five years of life on social and academic competence both during childhood (ages 6-12), adolescence (age 16) and adulthood (ages 23-32 years). The researchers measured childhood maltreatment by summing the child's number of early experiences of physical abuse, sexual abuse, or neglect and creating one maltreatment variable. Their results concluded that maltreatment before the age of 5 was associated with peer problems and lower academic test scores during childhood and adolescence, as well as less educational attainment and more romantic relationship difficulties in adulthood. Although this study provides strong support for early maltreatment on social and academic competence in middle childhood, because of the way the researchers operationalized maltreatment as a summation of physical, sexual, and neglectful experiences for each child, they were not able to investigate the idiosyncratic effects of physical abuse on social and academic competence.

Effects of Early Maltreatment on Social and Academic Competence in Middle Childhood

Although limited, some studies do delineate between different subsets of maltreatment and investigate the effect of early physical abuse on social and academic competence in children during middle childhood. Specifically, Jonson-Reid, Drake, Kim, Porterfield, and Han (2004) analyzed the relationship between different maltreatment types and risk of developmental disability, such as emotional disorders, among children in lower socioeconomic households. Their sample included 7,940 children from St. Louis between the ages of 7-16 who experienced maltreatment. In addition to accessing their maltreatment records, researchers also retrieved their special education records. The results demonstrated that more than 21% of children with a history of physical abuse experienced serious emotional disturbances compared to children with other maltreatment subsets. This highlights the potential idiosyncratic effect that physical abuse can have on someone's mental health, which can potentially impair future social and cognitive development.

Additionally, Prino and Perot (1994) conducted a study that investigated prosocial behaviors in physically abused ($n = 21$), nonabused-neglected ($n = 26$), and nonabused-nonneglected ($n = 21$) children between the ages of 5 and 8 years old. Prosocial behaviors for each child were operationalized as frequencies of helping behaviors, the word "friend(s)" and the word "we" on kinetic group drawing tests and verbal stories. The results revealed that children who were physically abused displayed significantly fewer prosocial behaviors on all composite measures compared to children with no history of physical maltreatment. Although this study had small sample sizes, the results still

illustrate support for early physical maltreatment being negatively associated with social competence during middle childhood. Moreover, Rogosch, Cicchetti, and Aber (1995) examined the effect of early childhood maltreatment on social competence in 46 maltreated and 43 non-maltreated low-income children, with 54% of the maltreated children experiencing physical abuse. When the children were 8 and 9 years old, researchers examined peer relations and social functioning in the classroom setting. The researchers found that children with a history of early physical abuse were more likely to be rejected by their peers in the classroom compared to children with no history of physical abuse. Additionally, Boden, Horwood, & Fergusson (2007) also demonstrated that children with a history of early physical maltreatment were at an increased chance of experiencing educational difficulties throughout their lifetime.

The Relationship Between Social and Academic Competence

Wentzel (1991) examined the relationship between social competence and academic achievement in 423 11 and 12-year-olds. Social competence was operationalized as socially appropriate behaviors and the ability to trust and solve problems efficiently, and academic achievement was operationalized as an average of the child's reading, language arts, math, science, and history grade for the school year. The results of this study demonstrated that the more a child acted socially responsible, exhibited trusting tendencies towards classmates, and displayed abilities to solve interpersonal problems, the higher their grades were. These results demonstrate correlational findings between social competence and academic achievement.

Furthermore, as part of the California Riverside Social Development Project, Welsh, Parke, Widaman, & O'Neil (2001) examined the relationship between social and

academic competence from first through third grade in a group of school-aged children ($N = 163$). Social competence was operationalized as peer ratings of social competence, peer ratings of behavioral characteristics, and teacher ratings of social competence and behavioral characteristics during the first, second, and third grades. Additionally, academic performance was measured by children's report cards from first through third grade, as well as teacher ratings of student achievement and efforts from first through third grade. The study demonstrated reciprocal results; academic achievement was related to social competence from first to second grade, as well as second to third grade. Additionally, social competence was related to academic achievement from second to third grade.

The Present Study

There are limited studies that specifically examine the effects of early physical abuse in middle childhood; however, there are clear longitudinal associations between early childhood maltreatment and social and cognitive deficits in adolescence and adulthood. Therefore, it is necessary to strengthen the limited research and investigate if these detrimental associations exist while the child is still in middle childhood. Middle childhood is a critical period for social and academic competence, thus, investigating these effects in middle childhood may allow for earlier social and academic interventions that may ameliorate the deficits before the child reaches adolescence and adulthood. The present study will contribute to the limited literature on the detrimental social and cognitive effects of early physical maltreatment in middle childhood by investigating how early childhood physical abuse affects social competence and academic achievement in middle childhood.

RQ1: Does early childhood physical abuse affect a child's social competence in middle childhood?

Hypothesis 1: Early physical harm will negatively affect a child's social competence in middle childhood.

RQ2: Does early childhood physical abuse affect a child's academic competence in middle childhood?

Hypothesis 2: Early physical harm will negatively affect a child's academic competence in middle childhood.

RQ3: Does social competence mediate the relationship between early childhood physical abuse and academic achievement in middle childhood?

Hypothesis 3: Social competence will mediate the relationship between early physical abuse and academic competence in middle childhood; early physical abuse will no longer be associated with academic competence in middle childhood with the inclusion of social competence in the model.

CHAPTER 3

METHOD

Participants

The data for this study were derived from a 24-year longitudinal, multisite study called the Child Development Project (CDP) (Lansford et al., 2002). The CDP study was interested in examining change in social and emotional development in children annually across 24 years. Participants included 585 children from three sites: Bloomington, Indiana, and Nashville and Knoxville, Tennessee who were recruited upon entry to kindergarten in 1987 and 1988. The children were 52% males ($n = 304$) and 48% female ($n = 281$), with 81% of them identifying as European American, 17% African American and 2% identifying as being part of another ethnic minority background (Lansford et al., 2002). In order to examine the children's socioeconomic status, an index based on their parent's education and occupational levels was computed by the original researchers (Hollingshead, 1975). The mean SES was 39.0 with a standard deviation of 14.0, which the original researchers classified as being predominantly middle class. The present study analyzed parent and teacher reports, as well as participants' academic records, to examine the impact of early physical maltreatment on social competence and academic achievement in middle childhood. Data across waves were missing at random due to participants, their parents, and/or teachers not being available at the time of data collection. Across waves, 66%-98% of the sample provided data on the variables of interests.

Measures

Physical Maltreatment. Before the children entered kindergarten, detailed interviews with the mothers were conducted regarding each child's developmental history (Lansford et al., 2002). The questions pertained to how the child's misconduct was handled in the home, and one of the questions specifically asked if the mothers ever remembered a time that their child experienced physical discipline so bad that they required medical attention. The mothers were then asked to describe the events and the marks that were left on the child (Lansford et al., 2002, 2007). Based on the interviews with the mother, the interviewers rated the probability that the child experienced extreme physical harm, using standard criteria of deliberate strikes to the child that left noticeable marks for more than one day, or that required immediate or any type of medical attention (Lansford et al., 2002, 2007). The original researchers computed the physical maltreatment variable into one dichotomous variable labeled as harm. If the interviewee determined no substantiated or suspected physical harm occurred to the child, a score of 0 was assigned, and a score of 1 was assigned to children who either probably or definitely experienced physical harm (Lansford et al., 2002, 2007). Of the 585 children in the study, 69 children were classified as those who did and likely did experience early physical abuse. Because this proportion is similar to national statistics of maltreated children, this sample is generalizable to the rest of the population (Straus & Gelles, 1990). The 69 children who did and likely did experience physical abuse were 27 European American boys, 24 European American girls, 11 African American boys, and 7 African American girls (Lansford et al., 2002, 2007).

Social competence. Social competence at age 11 was assessed using teacher reports on the *Social Competence Scale-Teacher Version*. This measure consists of 25-items that assess teacher ratings of a child's prosocial behaviors, emotional regulation, and academic ability in their school setting ("Fast Track Project," 1990). The teacher rated each item on a five-point Likert scale, with responses coded as 0 = *Not at All*, 1 = *A Little*, 2 = *Moderately Well*, 3 = *Well*, 4 = *Very Well*. I created a mean composite score for social competence by creating an average score across all of the social competence items ($\alpha = .98$). To be included in the mean composite score, participants had to have provided answers to at least 20 items on the *Social Competence Scale*.

Academic Achievement. Children's official school records from age 12 were available. From these school records, the child's average grades in Language, Mathematics, and Science, as well as their standardized test percentiles in Reading, Language, and Mathematics were analyzed separately (Lansford et al., 2002). Higher scores indicated higher grades and higher standardized test percentiles for each subject matter individually.

Plan of Analysis

Analyses were conducted in SPSS Version 26 (IBM Corp, 2018). Simple linear regression models were fit for each one of my hypotheses. For the first hypothesis, early physical abuse was the predictor and social competence was the outcome. For the second hypothesis, early physical abuse was the predictor and academic competence was the outcome. Because there are multiple outcomes for academic competence, early physical harm was examined as a predictor for each type of academic competence individually. Additionally, another simple regression model was fit in which social

competence was the predictor and academic competence was the outcome, to determine whether this relationship is significant. The latter was also conducted for each type of academic competence.

Next, mediation was tested using the Baron and Kenny (1986) procedure. To do this, multiple regression analyses were conducted, with two predictors and one outcome. The two predictors were early physical abuse and social competence, and the outcome was academic competence. This was done to investigate whether the relationship between early physical abuse and academic competence remained significant when controlling for social competence as a predictor. Should the relationship between early physical abuse and academic competence no longer be significant when controlling for social competence, then social competence is indeed a mediator to the relationship between early physical abuse and academic competence (Baron & Kenny, 1986). This step was completed for each form of academic competence, due to having more than one of these outcome variables.

CHAPTER 4

FINDINGS

Correlations between physical harm, social competence, and academic achievement

Intercorrelations between physical harm, social competence, and academic achievement are presented in Table 1. Physical harm was negatively correlated with social competence at age 11 ($r = -.18, p < .01$), as well as achievement test scores at age 12 for reading ($r = -.17, p < .01$), language ($r = -.15, p < .01$), and math ($r = -.19, p < .01$). Furthermore, social competence at age 11 was positively correlated with achievement test scores at age 12 for reading ($r = .31, p < .01$), language ($r = .39, p < .01$), and math ($r = .32, p < .01$).

Physical Maltreatment Predicting Social Competence and Academic Achievement

Listwise deletion was used for each regression model, therefore, for each model, only participants who provided data for the variables within the model were included in the analyses. Thus, between 56%-75% of the sample were included in these analyses across the models.

Results indicated that physical harm negatively predicted social competence at age 11 ($B = -.55; \beta = -.19, p < .000$). Physical harm also negatively predicted reading achievement test percentages at age 12 ($B = -15.78; \beta = -.17, p < .01$), as well as language achievement test scores at age 12 ($B = -14.09, \beta = -.15, p < .001$) and mathematics achievement test scores at age 12 ($B = -18.09, \beta = -.19, p < .001$). In addition to national normative achievement percentages, physical harm also negatively predicted children's report card grades at age 12. Specifically, physical harm negatively predicted their math report card grades ($B = -1.69; \beta = -.16, p < .01$), their language report card grades ($B = -2.26; \beta = -$

.21, $p < .001$), as well as their science report card grades ($B = -2.46$; $\beta = -.22$, $p < .001$) (see Table 2).

Social Competence Predicting Academic Achievement

Social competence at age 11 predicted higher normative achievement test percentages at age 12. Specifically, social competence at age 11 predicted higher reading achievement test scores at age 12 ($B = 9.86$; $\beta = .31$, $p < .001$), as well as higher language achievement test scores ($B = 11.89$; $\beta = .39$, $p < .001$), and higher mathematics achievement test scores at age 12 ($B = 9.88$; $\beta = .32$, $p < .001$). Additionally, social competence at age 11 predicted higher report card grades at age 12. Specifically, social competence at age 11 predicted higher math grades ($B = 1.48$; $\beta = .41$, $p < .001$), higher language grades ($B = 1.76$; $\beta = .47$, $p < .001$), and higher science grades at age 12 ($B = 1.73$; $\beta = .46$, $p < .001$) (see Table 3).

Mediation between physical harm, social competence, and academic competence.

Once controlling for social competence, physical harm no longer negatively predicted reading achievement test scores at age 12 ($B = -9.07$; $\beta = -.09$, $p = .07$) and language test norms at age 12 ($B = -4.98$; $\beta = -.05$, $p = .29$). Controlling for social competence did not change the relationship between early physical harm and total math achievement scores at age 12 ($B = -11.19$; $\beta = -.12$, $p = .02$). Furthermore, after controlling for social competence, physical harm no longer negatively predicted math report card grades at age 12 ($B = -.58$; $\beta = -.05$, $p = .27$), as well as language report card grades at age 12 ($B = -.85$; $\beta = -.08$, $p = .12$). However, controlling for social competence did not change the relationship between early physical harm and science report card grades at age 12 ($B = -.107$; $\beta = -0.09$, $p = .04$) (see Table 4).

CHAPTER 5

CONCLUSION

Limited studies have investigated the effects of early childhood physical abuse in middle childhood; therefore, the present study investigated the effects of early childhood physical abuse on social and academic competence at ages 11 and 12. Early childhood physical harm predicted lower social competence scores at age 11. Early physical harm also predicted lower academic achievement normative test scores at age 12 and lower report card grades at age 12. In addition, mediation results demonstrated that once social competence was controlled for, early physical harm only had a negative relationship with total math achievement scores and science report card grades at age 12. Therefore, the relationship between physical harm before age 5 and academic competence in certain areas at age 12 is mediated through social competence at age 11. In other words, social competence intervenes between the relationship of physical harm before age 5 and academic competence in certain academic subjects at age 12.

This research study demonstrates the detrimental effect of early physical harm on certain academic subjects, such as math and science, even after social competence was controlled for. These results contribute to the understanding of additional social and academic difficulties that children with early physical maltreatment may experience in school settings. This information is vital for teachers, as it demonstrates the importance of teachers being trauma informed in the classroom. Because social competence is so important for children with a history of physical maltreatment, it is particularly imperative for teachers to implement and design emotional lesson plans about social competence. Furthermore, these results also indicate that even after controlling for social

competence, the direct influence of early physical harm on math and science remains. Teachers can benefit from this information by preparing to offer greater assistance to such children when these subjects are being taught. Also, if parents are aware of the areas in which their children are most likely to struggle, they can plan ahead and try to intervene in helpful ways with homework and other helpful assignments.

Understanding the deficits of early physical harm on social and academic competence is also important for clinicians. If clinicians have a better understanding of a child's cognitive difficulties and the cause of these difficulties, they will be more likely to effectively inform case conceptualization, assist with the implementation of treatment planning and school supports, and appropriately integrate cognitive strategies into clinical treatment. These results can collectively assist with the understanding of certain adverse social and academic behaviors exhibited by children with a history of physical abuse, which is vital for clinicians and teachers.

Furthermore, if clinicians have a better understanding of a child's cognitive difficulties and the cause of these difficulties, they will be more likely to effectively inform case conceptualization, assist with the implementation of treatment planning and school supports, and appropriately integrate cognitive strategies into clinical treatment. These results can collectively assist with the understanding of certain adverse social and academic behaviors exhibited by children with a history of physical abuse, to inform both theories and interventions.

Results of this study also contribute to resilience theory. Resilience theory argues that it's not the nature of adversity that a child experiences that is most important, but rather, the way in which the child deals with it (Zimmerman et al., 2010). When a child

faces misfortune, or frustration, resilience can help them bounce back and potentially reverse the detrimental long-term effects of early physical abuse. Additionally, resilience would be especially helpful for those children with a history of physical abuse as well as children with low social competence.

Limitations and Future Research

Although the findings of this study contributed to the limited literature on the effects of early childhood physical harm on middle childhood, some limitations still existed. One of the main limitations that existed was that the study investigated parental physical harm inflicted upon children during early childhood using self-report measures. These self-report measures may be biased due to the concerns of honest reporting. Also, the self-report questionnaires for the harm the child experienced were administered only to the mothers. This could exclude mothers who are abusive, as they may have been dishonest and put more blame on the father. Future research should aim to substantiate self-report measures with teacher reports and police records.

Additionally, another one of the main limitations that existed was that data collection took place in three sites, Bloomington, Indiana, and Nashville and Knoxville, Tennessee. According to the 2017 Maltreatment Report, Indiana has the second-highest child abuse rates in the country (Child Maltreatment, 2017). Additionally, in Tennessee, corporal punishment is permitted in schools if teachers view it as necessary (Tennessee Corporal Punishment in Public Schools Laws, 2016). Corporal punishment refers to paddling, spanking, or other forms of physical chastisement imposed to a student by a teacher or administrator (Tennessee Corporal Punishment in Public Schools Laws, 2016). Therefore, due to the data being collected from sites historically known for child abuse,

the physical harm associations may be stronger than they would be if they were conducted in states not specifically known for having high rates of child abuse. Future research should aim to collect data at sites around the United States where physical maltreatment is not as publicized or accepted. Additionally, future research should also aim to examine the effects of emotional abuse on social and academic competence to ensure that it is in fact physical abuse contributing to these social and cognitive deficits.

The last major limitation includes lack of diversity in the sample population, with about 81% of the children in the sample being of Caucasian descent. Future research should aim to investigate early physical harm at different sites throughout the United States, as well as a more diverse sample population. Additionally, future research should aim to use different measures of reported physical harm in addition to parent self-report measures. Lastly, future research should investigate confounding variables such as gender and socioeconomic status, on the relationship between early physical harm and social competence at age 11 and academic achievement at age 12.

Table 1. *Correlations and descriptive statistics of scores for physical harm and social and academic competence and control variables (N = 585).*

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Age 5 Physical harm	-										
2. Age 11 Social Competence	-.18**	-									
3. Age 12 Math Score	-.15**	.40**	-								
4. Age 12 Language Score	-.20**	.47**	.64**	-							
5. Age 12 Science Score	-.24**	.46***	.69**	.75**	-						
6. Age 12 Total Stand. Reading %	-.17**	.31**	.42**	.42**	.48**	-					
7. Age 12 Total Stand. Language %	-.15**	.39**	.51**	.51**	.51**	.80**	-				
8. Age 12 Total Stand. Math %	-.19**	.32**	.54**	.45**	.51**	.72**	.73**	-			
9. Sex	-.03	.29**	.13**	.19**	.14**	.03	.18**	.01	-		
10. Race	.05	-.19**	-.17**	.17**	-.18	-.36**	-.30**	-.31**	.01	-	
11. SES	-.20**	.26**	.28**	.33**	.33**	.48**	.46	.44**	-.05	.35**	-
<i>M</i>	.12	2.64	8.77	9.08	9.32	63.88	65.40	65.95	.48	.20	39.53
<i>SD</i>	.32	.92	3.38	3.47	3.56	28.33	27.67	27.97	.50	.45	14.01

Table 2. *Linear Regression between physical harm and social competence at age 11 and academic competence at age 12.*

	Social Comp Scores			Reading Achievement Scores			Language Achievement Scores			Math Achievement Scores			Math Report Card Grades			Language Report Card Grades			Science Report Card Grades		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Physical harm age 5	-.55	.13	-.19***	15.78	4.78	-.17**	-14.09	4.73	-.15**	-18.09	4.75	-.19***	-1.69	.53	-.16**	2.25	.57	-.21***	-2.46	.55	-.22***

** $p < .01$, *** $p < .001$

Table 3. *Linear Regression between social competence at age 11 and academic competence at age 12.*

	Reading Achievement Scores			Language Achievement Scores			Math Achievement Scores			Math Report Card Grades			Language Report Card Grades			Science Report Card Grades		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Social competence age 11	9.86	1.59	.31***	11.89	1.49	.39***	9.88	1.56	.32***	1.48	.17	.41***	1.76	.18	.47***	1.73	.17	.46***

*** $p < .001$

Table 4. *Mediation between physical harm, social competence, and academic competence.*

	Reading Achievement Scores			Language Achievement Scores			Math Achievement Scores			Math Report Card Grades			Language Report Card Grades			Science Report Card Grades		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Physical Harm age 5	-9.07	4.89	-.09	-4.98	4.67	-.05	-11.19	4.89	-.12*	-.58	.52	-.05	-.85	.55	-.08	-1.07	.52	-.10*
Social competence age 11	9.33	1.61	.30***	11.61	1.51	.38***	9.25	1.58	.30***	1.44	.18	.40***	1.70	.19	.46***	1.65	.18	.44***

* $p < .05$, *** $p < .001$

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