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ASSOCIATIONS AMONG TEACHER IDENTIFICATION OF SYMPTOMOLOGY IN
THE CLASSROOM AND CHILDREN'S POST-TRAUMATIC STRESS
DISORDER SYMPTOMOLOGY: POTENTIAL INFLUENCES
OF CAREGIVER CHILDHOOD MALTREATMENT

by

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ABSTRACT

ASSOCIATIONS AMONG TEACHER IDENTIFICATION OF SYMPTOMOLOGY IN THE CLASSROOM AND CHILDREN'S POST-TRAUMATIC STRESS DISORDER SYMPTOMOLOGY: POTENTIAL INFLUENCES OF CAREGIVER CHILDHOOD MALTREATMENT

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Child abuse is a substantial public health problem in the United States, with approximately one in three children experiencing abuse before the age of 18. Studies examining the cycle of violence suggest that when caregivers are abused, their children's first 12 years of life may bear increased risk for similar abuse. Teachers are well-equipped to notice symptoms of child abuse and to intervene during this critical developmental period. Thus, teacher identification of traumatic symptomology associated with abuse may serve an important preventive purpose and may mitigate risk for children who experience forms of abuse early in life. The present study examined caregiver childhood abuse as a moderator of the association among teacher identification of student PTSD symptomology and actual PTSD symptomology for children at risk for abuse. The current study utilized a sample of children ($n = 872$) from the consortium for Longitudinal Studies of Child Abuse and Neglect. Teachers were more likely to identify

externalizing behaviors compared to caregivers. One interaction was statistically significant, indicating that caregiver childhood abuse moderated the association between teacher identification of child internalizing behaviors and PTSD *symptomology severity* at age 12. Further simple slope analyses indicated that teachers were more likely to identify child PTSD symptomology if the student's caregiver experienced childhood maltreatment. Additionally, findings suggested that caregiver childhood maltreatment is not associated with teacher identification of child internalizing and externalizing behaviors and PTSD *clinical significance*. Further research and teacher training may be needed to better identify child symptomology in the classroom.

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CHAPTER I:
INTRODUCTION

Childhood Maltreatment

Childhood maltreatment is a substantial public health problem in the United States (Elmquist et al., 2015; Mills et al., 2012; Negriff, Schneiderman, & Penelope, 2017; Thornberry & Henry, 2013), with approximately one in three children experiencing some form of maltreatment before the age of 18 (Kim, Wildeman, Jonson-Reid, & Drake, 2017). Childhood maltreatment can be identified as physical, sexual, and emotional abuse or the neglect of a child. While abuse and neglect seem like similar constructs of maltreatment, there are some important distinctions between the two. Abuse is an active form of maltreatment that elicits direct harm to a child, while neglect involves failing to meet a child's basic needs (Nanda, Reichert, Jones, & Flannery-Schroeder, 2016).

Due to the traumatic nature of abuse and neglect, there are numerous negative consequences that can impact the sequence of healthy development in children; including emotion regulation, self-control, and healthy attachment formation to caregivers, as well as other outcomes (Johnson et al., 2002; Maguire-Jack, Negash, & Steinman, 2018; Masten, 2006; Mills et al., 2012; Thornberry & Henry, 2013). Early identification of these cases of abuse and neglect is undoubtedly necessary, as young children are more prone to a faster rate of the development of behavioral and emotional symptomology than other developmental stages (Lauterbach & Armour, 2016). In addition, early identification could be used to recognize additional children experiencing abuse or neglect. Despite the prevalence of maltreatment already reported, it is suspected that there are still a vast number of maltreatment cases that go unreported every year (Negriff et al., 2017).

Behavioral and Emotional Consequences of Childhood Maltreatment

There is a direct association between adverse childhood experiences and the development of negative behavioral and emotional symptomology (i.e., aggression, anxiety, and depression; Johnson et al., 2002; Mills et al., 2012; Cromer & Villodas, 2017). Conversely, it is important to consider that not all types or severities of maltreatment will lead to the development of the same behavioral and emotional outcomes; each case can differ depending on the type and severity of the abusive event (Charak, Ford, Modrowski, & Kerig, 2018; Schalinski et al., 2016; Thornberry & Henry, 2013). In particularly severe cases, when a child is suspected of experiencing multiple types of maltreatment instead of just one, the likelihood of developing adverse behavioral and emotional problems increases significantly (Charak et al., 2018; Schalinski et al., 2016). Neglect is the most common form of maltreatment, but adolescents are more likely to display negative behavioral and emotional symptomology when neglect is paired with emotional abuse (Christ, Kwak, & Lu, 2017; Mills et al., 2012; Rebbe, 2018). Additionally, children who have experienced severe emotional abuse may develop a fear of social interactions with their peers and difficulty controlling impulsivity, specifically with regard to the risk of suicide (Liu, 2018; Miller et al., 2017; Nanda et al., 2016).

When considering the identification of adverse negative outcomes from childhood maltreatment, potential gender differences of symptomology development should be identified. Prior literature indicates that females tend to internalize their symptoms while males may demonstrate more outward externalizing psychopathology with regard to abuse and neglect (Tyler, Johnson, & Brownridge, 2008). Specifically, females are more likely to report experiencing posttraumatic stress symptoms from maltreatment than males (Ross & Kearney, 2015). However, both genders share the same potential risk for the development of PTSD symptoms after events of maltreatment, whether it is reported

upon or not (Ross & Kearney, 2015). Likewise, when controlling for ethnic differences, Ross and Kearney (2015) found that some ethnic communities are at a higher risk for child maltreatment and PTSD development than others. These results were suggested to be due to higher poverty rates, discrimination, and culturally related parenting practices (i.e. spanking; Ross & Kearney, 2015).

Consequently, the age at which maltreatment occurs must be considered, as early abuse negatively impacts a child's development of emotion regulation, which can lead to disruptive behaviors (Benedini & Fagan, 2018; Docherty, Kubik, Herrera, & Boxer, 2018). For example, the early experience of child abuse increases the likelihood of aggressive and delinquent behaviors later in life (Benedini & Fagan, 2018; Henschel, Bruin, & Möhler, 2014). Also, experiencing substantiated maltreatment earlier in childhood is associated with a greater risk of developing a lack of guilt with regard to conduct problems (Docherty et al., 2018). Likewise, childhood maltreatment negatively impacts the development of social functioning, such as the processing of developmentally age-appropriate social cues, and this negative impact can lead to future maladaptive behaviors (Dodge, Bates, & Petit, 1990; Thornberry & Henry, 2013).

Lastly, children who experienced traumatic events tend to display many behavioral and emotional difficulties including internalizing and externalizing behaviors in adolescence (Margolin & Gordis, 2000; Tyler et al., 2008). More specifically, adolescents who were victims of childhood sexual abuse were more likely to develop symptoms of depression, PTSD, and other emotional problems (Tyler et al., 2008). All three of these symptom categories are commonly seen in people diagnosed with PTSD.

Childhood Maltreatment and PTSD Symptomology

Childhood experience of traumatic maltreatment is strongly related to the heightened risk of the development of posttraumatic stress disorder (PTSD) later in life (Messman-Moore & Bhuptani, 2017; Ross & Kearney, 2015). Examples of posttraumatic stress symptoms include negative posttraumatic cognitions, dissociation, and depression (Ross & Kearney, 2015). Additionally, posttraumatic stress symptomology is significantly increased in youth who have experienced sexual abuse and neglect specifically, as those particular forms of maltreatment tend to lead to re-victimization (Finkelhor, Ormrod, Turner, & Holt, 2009; Martinez, Polo, & Zelic, 2014; Ross & Kearney, 2015). In addition to PTSD-related symptomology, victims of childhood maltreatment are at an increased risk of developing comorbid psychiatric disorders, including emotion dysregulation, substance abuse, eating disorders, and borderline personality disorder later in the lifespan (Messman-Moore & Bhuptani, 2017; Tyler et al., 2008). The negative outcomes from experiencing childhood maltreatment early in life can be detrimental to a healthy and happy lifespan, and these adverse effects can influence future family members if intervention is not sought out.

Caregiver Childhood Maltreatment

Among the long-term negative effects of childhood maltreatment is a heightened risk for the cycle of abuse to continue throughout generations of maltreated youths (Egeland, Jacobvitz, & Sroufe, 1988; Finzi-Dottan & Harel, 2014; Thornberry & Henry, 2013). Compared to parents who have never experienced childhood maltreatment, parents who were abused as children and adolescents are more likely to engage in abusive acts towards their own children (Milaniak & Widom, 2015; Thornberry & Henry, 2013).

When caregivers were physically or sexually abused, their children's first 12 years of life bore an increased risk of becoming victims to the same maltreatment

(Babcock Fenerci & Allen, 2018; Berlin, Appleyard, & Dodge, 2011; Dixon, Browne, & Hamilton-Giachritsis, 2005). Not only does maternal childhood physical abuse lead to a greater risk of intergenerational abuse in infancy, but there is also a potential risk of continuity of abuse through adolescence (Berlin et al., 2011). Furthermore, mothers with a history of childhood abuse tend to respond more aggressively and engage in harsher parenting practices (Berlin, et al., 2011; Morrel, Dubowitz, Kerr, & Black, 2003). In addition, maternal caregivers who experienced childhood maltreatment were more likely to be blind to the idea that they may have developed the same abusive child rearing practices or were consciously unaware that someone else was abusing their children (Babcock Fenerci & Allen, 2018).

While caregiver childhood abuse is associated with a direct link to intergenerational child abuse, there are some risk factors that will increase the likelihood of that outcome (Babcock Fenerci & Allen, 2018; Berlin et al., 2011; Dixon et al., 2005). Dixon and colleagues (2005) suggested that becoming a parent before the age of 21, a history of mental illness/depressive symptoms, or residing with a violent caregiver increases risk for intergenerational abuse. These risk factors were associated with the type of parenting style that is common among parents who participate in abusive and aggressive child rearing practices (Babcock Fenerci & Allen, 2018; Dixon et al., 2005; Morrel et al., 2003).

Additionally, a history of maternal emotional maltreatment is a common risk factor associated with the development of depression or depressive symptoms for caregivers (Dixon et al., 2005; Margolin & Gordis, 2000; Meller, Kuperman, McCullough, & Shaffer, 2016; Morrel et al., 2003). Moreover, perceived lack of self-control is seen as a recurring problem among abused caregivers, which can ultimately lead to a greater likelihood of loss of temper in stressful situations compared to non-

abused caregivers (Finzi-Dottan & Harel, 2014; Henschel et al., 2014). This is common amongst abused caregivers, because early childhood maltreatment interrupts healthy emotion regulation development (Finzi-Dottan & Harel, 2014; Henschel, et al., 2014; Rumstein-McKean & Hunsley, 2001). Prior literature consistently outlines the range of adverse consequences associated with child maltreatment and the cycle of abuse that can develop; therefore, it is necessary to identify and intervene when any of these outcomes are shown.

Teacher Identification

Over the course of development, teachers spend a great deal of time with children and help to provide them with the tools they need to succeed in life. Teacher-student relationships are beneficial to children's overall wellbeing, because teachers are identified as an additional support system for students (Cordeiro, Paixão, Lens, Lacante, & Sheldon, 2016; Madjar, Walsh, & Harel-Fisch, 2018). During childhood and adolescence, teachers have more contact with children in a weekday than their family members, and, because of this, teachers essentially become the first line of support (Marsh, 2016; Sinanan, 2011; Smith & Lambie, 2005). Additionally, due to the frequency of teacher-student interactions, teachers tend to be more aware of students' behaviors and characteristics than any other adult in the students' lives, with the exception of the children's caregivers (Clarizo, 1994). Older literature indicated that when teacher and parent self-report forms on student depressive symptomology were compared, there was very little difference between raters' reports (Epkins & Meyers, 1994). However, more recent literature has shown that there could be some differences in symptomology reporting due to the different environments the children are in during reporting (De Los Reyes et al., 2015). Teachers may be able to report more symptomologies in the classroom than caregivers can at home because teachers spend a great deal of time with

children throughout the day. Acknowledging the important role teachers hold in children's lives is the first step to discovering more ways for adverse child experiences and symptomologies to be identified and reported for intervention.

Daily teacher-student interactions provide teachers with a unique ability and responsibility to identify warning signs in the classroom when a child is experiencing abuse (Sinanan, 2011; Smith & Lambie, 2005). There are laws in place that require teachers to report any suspicion of child maltreatment to the proper authorities in every state in the United States (Cambron-McCabe, McCarthy, & Thomas, 2004). Legislation like this exists because teachers have a unique proximity to students throughout the year; this makes them more inclined to identify any red flags associated with child abuse (Reyme & Gaeddert, 1998). Additionally, teachers are regularly involved in the early stages of emotional and problematic behavior identification for at-risk students in need of intervention because of the behaviors they witness in the classroom environment (Dowdy, Doane, Eklund, & Dever, 2007). With regard to specific symptomology identification, teachers have demonstrated success at identifying externalizing behaviors in the classroom (Dowdy et al., 2007; Dwyer, Nicholson, & Battistutta, 2006; Lane & Menzies, 2005). This finding is most likely due to the distracting nature of externalizing behaviors in the classroom and the impact these distractions have on other students' learning experiences. More recent studies found that teachers were able to accurately identify both externalizing and internalizing behaviors in students with severe symptomology (Loades & Mastroiannopoulou 2010; Splett et al., 2018).

Statement of Purpose

The current study aims to investigate whether caregiver childhood maltreatment moderates the association among teacher identification of student PTSD symptomology and children's report of internalizing and externalizing symptoms among a sample of

children at risk for maltreatment. Caregivers who experienced childhood maltreatment are at risk for abusing children of their own (Egeland et al., 1988; Finzi-Dottan & Harel, 2014; Thornberry & Henry, 2013). When the cycle of abuse continues, abused children are more likely to develop heightened adverse emotional and behavioral symptomologies (Johnson et al., 2002; Mills et al., 2012; Cromer & Villodas, 2017). In order to break the cycle of abuse, it is imperative that children's behaviors are identified and reported. Teachers are well-equipped to notice these symptoms of child abuse and to intervene during this critical developmental period (Sinanan, 2011; Smith & Lambie, 2005). Thus, teacher identification of traumatic symptomology associated with abuse may serve an important preventive purpose and may mitigate risk for children who experience forms of abuse early in life. While many studies have identified the risks of childhood maltreatment and the cycle of abuse associated with caregiver childhood maltreatment, no prior literature has investigated whether caregiver childhood maltreatment intensifies child PTSD symptomology in the classroom.

Based on previous literature, it was hypothesized that teachers would be able to accurately identify externalizing and internalizing behaviors (i.e. depression, anxiety, aggression, etc.) from children at risk or exposed to maltreatment. Additionally, it was hypothesized that a caregiver's own experience of childhood maltreatment would moderate the association among teacher identification of children's PTSD symptomology and child report of symptoms, due to intergenerational childhood maltreatment. Specifically, it was hypothesized that children whose caregivers experienced childhood maltreatment would display more severe internalizing and externalizing behaviors in the classroom, thus increasing the likelihood that the children's teachers would be able to accurately identify those heightened PTSD symptoms in the classroom.

CHAPTER II:

METHOD

Participants

Participants were recruited from five geographic locations throughout the United States (East, Midwest, South, Southwest, and Northwest) as part of the consortium for Longitudinal Studies of Child Abuse and Neglect (LONGSCAN; Runyan et al., 2014). The current study includes participant data from four of the five sites (East, Midwest, South, and Northwest), due to missing caregiver childhood maltreatment reports at the Southwest site. The current study sample was comprised of 872 children who were reported to Child Protective Services (CPS) for being exposed to, or who were at risk for, maltreatment (see Table 1). There was an even representation of sex among the participants (50.1% females, 49.9% males), and the sample was relatively diverse with regard to race (57% Black, 26.5% White, and 16.5% Other). Race had to be recoded and condensed to three variables due to low representation of Hispanic (4.8%), Native American (1%), Asian (.2%), Mixed Race (9.5%), and Other (.9%) racial groups. Total yearly household income was reported by the participants' caregivers, and approximately 76% of families earned less than \$20,000 per year, 21.1% had a yearly household income between \$20,000 and \$50,000, and only 2.9% of reported over \$50,000 a year. Demographic data is shown in Table 1.

Procedure

For this study, data from LONGSCAN was used to assess the associations among caregiver childhood maltreatment, children's PTSD symptomology, and teacher identification of student problem behaviors in the classroom. Participants were recruited based on referrals to CPS from the various five nationwide sites. Longitudinal data was collected for LONGSCAN during yearly face-to-face and telephone interviews with

caregivers and children, with assessment beginning at child’s birth to age four and continuing through age 18. A variety of measures were utilized to collect a well-rounded, longitudinal dataset about the outcomes of childhood maltreatment that included child, caregiver, and other environmental variables. For the current study, only demographic, child PTSD symptomology, caregiver childhood maltreatment, and teacher and caregiver reports of child behavior were analyzed.

Table 1
Child and Caregiver Demographics

	N (percentage)
Child Sex	
Female	437 (50.1%)
Male	435 (49.9%)
Child Race	
Black	497 (57%)
White	231 (26.5%)
Other	144 (16.5%)
Yearly Household Income	
> \$20,000	653 (76%)
\$20,000 - \$50,000	181 (21.1%)
< \$50,000	25 (2.9%)
Caregiver Childhood Maltreatment	
No	467 (54.2%)
Yes	394 (45.8%)
Child PTSD Clinical Significance	
<i>Age 8</i>	
Normal	569 (88.6%)
Borderline	73 (11.4%)
<i>Age 12</i>	
Normal	614 (98.7%)
Borderline	8 (1.3%)

Measures

Demographics. Child sex, child race, and total family income were collected from caregiver and child self-reports at ages 8 and 12. Control variables that could impact child PTSD symptomology severity or teacher identification of internalizing and externalizing behaviors were child sex, child race, and total household income.

Child PTSD Symptomology. The Trauma Symptom Checklist for Children (adapted from Briere, 1996) assesses childhood traumatic experiences, and, for the current study, child self-report at ages 8 and 12 was utilized. The measure consists of 54 items, and six clinical items, including anger, anxiety, depression, PTSD, dissociation, and sexual concerns. PTSD was the only clinical item utilized for this particular study. Raw scores of PTSD symptomology indicated symptom severity. These raw scores were then transformed into t-scores, with higher t-scores indicating greater symptomology, and t-scores at or above 65 denoted clinically significant symptomologies. Individual PTSD items were not available to run Cronbach's Alpha for this particular sample in the current study, but LONGSCAN provided reliability for the overall sample at age 8 ($\alpha = .82$) and age 12 ($\alpha = .84$) (Runyan et al., 2014).

Caregiver Childhood Maltreatment. Caregiver's History of Loss and Victimization (adapted from Hunter & Everson, 1991) was used to assess retrospective reports of caregiver history of childhood physical and sexual maltreatment. A total of eight items about child and adolescent physical and sexual maltreatment were used in the current study. Due to a lack of caregiver report data, caregiver childhood maltreatment severity could not be included in the analyses as a continuous variable. As such, a caregiver was coded as experiencing maltreatment if they reported experiencing any form of maltreatment during any developmental period, and maltreatment was included in the

analyses as a dichotomous variable (0 – No history of maltreatment, 1 – History of maltreatment).

Teacher and Caregiver Identification of Child Behaviors. The Teacher Report Form (TRF, adapted from Achenbach, 1991) was used to assess teachers' observations of children's problem behavior in the classroom at ages 8 and 12. The Child Behavior Checklist (CBCL, adapted from Achenbach, 1991) was used to assess caregiver reports of children's behavior in the home at ages 8 and 12. The TRF and CBCL have the same 113 items, therefore teacher and caregiver reports are comparable. The broadband problem behavior scales used in the current study were comprised of internalizing, externalizing, and total problem behavior. Additionally, five symptom specific scales were used (i.e., withdrawal, anxiety/depression, social problems, delinquent behavior, and aggressive behavior). The internalizing items consisted of social withdrawal, somatic complaints, and anxiety/depression subscales, and the externalizing items contained the delinquent and aggressive behavior subscales. Raw scores for the variables were transformed into t-scores for the current study. For the symptom scales, scores below 67 are within the normal range, 67-70 are considered to be borderline clinical, and above 70 are clinically significant symptoms. For the broadband scales, scores below 60 are within the normal range, 60-63 are considered to be borderline scores, and above 63 are within the clinical range. To examine symptom severity in addition to number of symptoms, teacher and caregiver reports of child internalizing and externalizing behaviors were also recoded as dichotomous variables (0 - Normal, 1- Borderline), and due to a lack of clinically significant symptom severity data, only normal and borderline symptom severities were assessed. Individual teacher report items were not available to run Cronbach's Alpha for this particular sample in the current study, but LONGSCAN provided reliability for the overall sample at age 8 (internalizing: $\alpha = .87$; externalizing: α

= .96) and age 12 (internalizing: $\alpha = .88$; externalizing: $\alpha = .96$) (Runyan et al., 2014). Additionally, individual caregiver report items were not available to run Cronbach's Alpha, but LONGSCAN provided reliability for the overall sample ranging from .62 to .92 for all eight symptoms reported in the CBCL (Runyan et al., 2014).

Data Analysis

Two hypotheses were tested in the current study. The first hypothesis indicated that teachers would be able to accurately identify externalizing and internalizing behaviors in the classroom environment among children exposed to, or at risk for, maltreatment. The second hypothesis stated that caregiver childhood maltreatment would moderate the association among teacher identification and children's PTSD symptomology severity and clinical significance. Specifically, it was hypothesized that abused children at risk for maltreatment with caregivers who experienced childhood maltreatment would show more severe PTSD symptoms; therefore, teachers would report more child internalizing and externalizing behaviors.

Initial analyses consisted of chi-square tests comparing teacher reports of child internalizing and externalizing behaviors to caregiver reports of the same behaviors at ages 8 and 12 in order to confirm testing accuracy on similarity of multiple reporters. Additional analyses consisted of linear and logistic regression. Multiple linear regression models were conducted when child PTSD symptomology was assessed using the continuous form of the variable. Logistic regression models were conducted when child PTSD symptomology was assessed using the dichotomous severity variable (normal vs. borderline). Main effects of caregiver childhood maltreatment and teacher identification on child PTSD symptomology, as well as the interaction between caregiver childhood maltreatment and teacher identification, were examined in the regression analyses, and the regression analyses included child sex, child race, and totally household income as

covariates. All analyses were completed using IBM's Statistical Package for the Social Sciences (SPSS) version 25 (IBM Corp., 2017).

CHAPTER III:

RESULTS

Teacher Identification of Student PTSD Symptomology

To investigate whether teacher and caregiver reports of child externalizing and internalizing behaviors at ages 8 and 12 differed, several chi-square analyses were conducted, and results of the chi square analysis can be found in Table 2. Teachers reported significantly more externalizing behaviors at age 8 compared to caregivers ($X^2(1,356) = 5.82, p < .05$). Teachers were more likely to report children's externalizing behaviors than caregivers at age 8. The strength of the association (Phi) between teacher and caregiver reports of externalizing behaviors at age 8 and was .13. According to Cohen (1988), this is considered a small effect size. Analyses indicated that teacher and caregiver reports of externalizing behaviors at age 12 ($X^2(1,240) = .00, p = .98$) and internalizing behaviors at ages 8 ($X^2(1,425) = .52, p = .47$) and 12 ($X^2(1,285) = .11, p = .75$) did not significantly differ.

Table 2

Chi-Square Analysis of Teacher Report Compared to Caregiver Report of Child Internalizing and Externalizing Behaviors at Ages 8 and 12

Variable	Caregiver: Norm	Caregiver: Borderline	Total	X^2	p
Age 8:					
<i>Internalizing</i>				.52	.47
Teacher:	331	29	360		
Norm					
Teacher:	58	7	65		
Borderline					
Totals	389	36	425		
<i>Externalizing</i>				5.82	.02*
Teacher:	270	22	292		
Norm					
Teacher:	53	11	64		
Borderline					
Totals	323	33	356		
Age 12					
<i>Internalizing</i>				.11	.75
Teacher:	234	24	258		
Norm					
Teacher:	25	2	27		
Borderline					
Totals	259	26	285		
<i>Externalizing</i>				.00	.98
Teacher:	162	25	187		
Norm					
Teacher:	46	7	53		
Borderline					
Totals	208	32	240		

* $p \leq .05$ ** $p \leq .01$

Caregiver Childhood Maltreatment as a Moderator of Teacher Identification and Child PTSD Symptomology Severity

Multiple linear regression analyses were conducted to determine if caregiver childhood maltreatment moderated the relation between teacher identification of internalizing and externalizing child behaviors and child PTSD symptomology severity at ages 8 and 12, after controlling for child sex, child race, and total family income. The results of the linear regressions are displayed in Table 3.

There was not a statistically significant main effect for teacher identification of child internalizing behaviors and child PTSD symptomology severity at age 8 ($\beta = -.01, p = .85$). However, there was a statistically significant main effect for caregiver childhood maltreatment predicting child PTSD symptomology severity ($\beta = .13, p < .05$), such that children had more severe symptomology when a caregiver had experienced maltreatment. Additionally, there was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child internalizing behaviors in relation to child PTSD symptomology severity ($\beta = .08, p = .30$). Moreover, at age 8 there were no statistically significant main effects for teacher identification of child externalizing behaviors ($\beta = -.07, p = .41$) or caregiver childhood maltreatment ($\beta = .08, p = .26$) and child PTSD symptomology severity. There also was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child externalizing behaviors in relation to child PTSD symptomology severity ($\beta = .13, p = .14$).

At age 12, there were no statistically significant main effects for teacher identification of child internalizing behaviors ($\beta = -.14, p = .12$) or caregiver childhood maltreatment ($\beta = -.09, p = .19$) and child PTSD symptomology severity. However, there was a statistically significant interaction between caregiver childhood maltreatment and

teacher identification of child internalizing behaviors in relation to child PTSD symptomology severity ($\beta = .29, p < .01$; Figure 1). Simple slope results indicated that teachers were more likely to identify student PTSD symptomology if the child's caregiver experienced childhood maltreatment ($t = 2.91, p < .01$), and were not more likely to identify student PTSD symptomology if the child's caregiver did not experience childhood maltreatment ($t = -1.63, p = .11$). Furthermore, there were no statistically significant main effects for teacher identification of child externalizing behaviors ($\beta = -.08, p > .45$) or caregiver childhood maltreatment ($\beta = .03, p = .72$) and child PTSD symptomology severity at age 12. There also was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child externalizing behaviors in relation to child PTSD symptomology severity ($\beta = -.02, p = .87$).

Table 3

Moderation Effects of Caregiver Childhood Maltreatment on Teacher Identification of Internalizing and Externalizing Behaviors and Child PTSD Symptomology Severity at Ages 8 and 12

Predictor	β	<i>p</i>	SE
Age 8			
<i>Internalizing</i>			
<i>(N=345)</i>			
Internalizing	-.01	.85	1.36
Caregiver Abuse	.13	.02*	.78
Caregiver Abuse x Internalizing	.08	.30	1.93
<i>Externalizing</i>			
<i>(N=299)</i>			
Externalizing	-.07	.41	1.27
Caregiver Abuse	.08	.26	.87
Caregiver Abuse x Externalizing	.13	.14	1.86
Age 12			
<i>Internalizing</i>			
<i>(N=236)</i>			
Internalizing	-.14	.11	1.25
Caregiver Abuse	-.09	.19	.56
Caregiver Abuse x Internalizing	.29	.00**	1.84
<i>Externalizing</i>			
<i>(N=211)</i>			
Externalizing	-.08	.45	.98
Caregiver Abuse	.03	.72	.62
Caregiver Abuse x Externalizing	-.02	.87	1.37

**p* ≤ .05 ** *p* ≤ .01

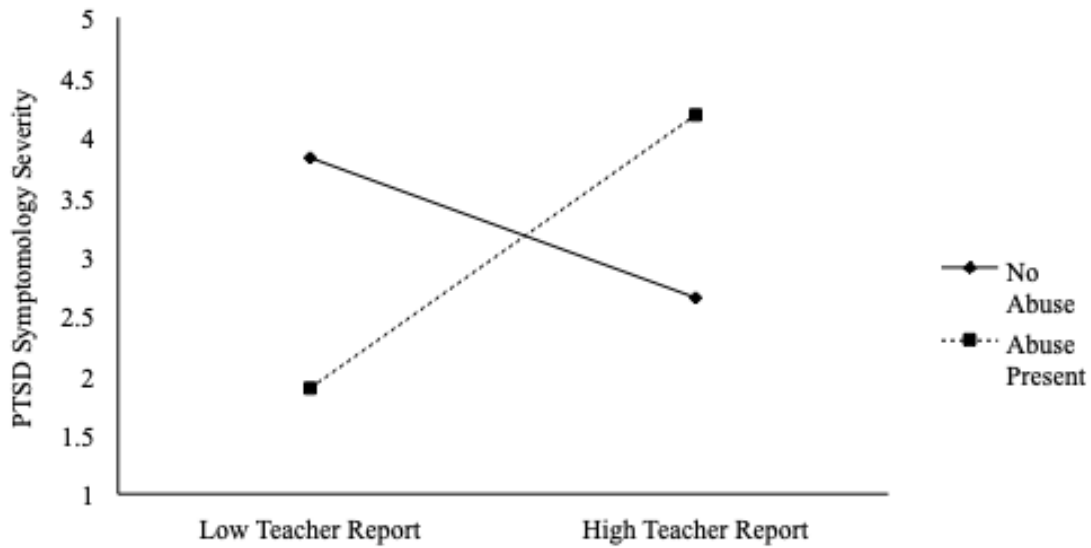


Figure 1
Moderation Simple Slope Interaction of Caregiver Childhood Maltreatment on Teacher Identification of Internalizing Behaviors of Child PTSD Symptomology Severity at Age 12

Caregiver Childhood Maltreatment as a Moderator of Teacher Identification and Child PTSD Clinical Significance

A series of logistic regression analyses were conducted to investigate whether caregiver childhood abuse moderated the relation between teacher identification of child externalizing and internalizing behaviors predicting PTSD clinical significance at ages 8 and 12, after controlling for child gender, child race, and total family income. The logistic regression results are shown in Table 4.

At age 8, there were no statistically significant main effects for teacher identification of child internalizing behaviors ($\beta = -.57, p = .60$) or caregiver childhood maltreatment ($\beta = .42, p = .38$) and child PTSD clinical significance, and there was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child internalizing behaviors in relation to child PTSD clinical significance ($\beta = 1.97, p = .11$). There also were no statistically significant main effects

for teacher identification of child externalizing behaviors ($\beta = -1.04, p = .34$) or caregiver childhood maltreatment ($\beta = .55, p = .24$) and child PTSD clinical significance at age 8. There also was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child externalizing behaviors in relation to child PTSD clinical significance ($\beta = -.31, p = .84$).

At age 12, there were no statistically significant main effects for teacher identification of child internalizing behaviors ($\beta = -16.26, p = .99$) or caregiver childhood maltreatment ($\beta = -15.99, p = .99$) and child PTSD clinical significance. There also was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child internalizing behaviors in relation to child PTSD clinical significance ($\beta = 14.57, p = .99$). Furthermore, there were no statistically significant main effects for teacher identification of child externalizing behaviors ($\beta = -17.55, p = .99$) or caregiver childhood maltreatment ($\beta = -16.42, p = .99$) and child PTSD clinical significance. There also was not a statistically significant interaction between caregiver childhood maltreatment and teacher identification of child externalizing behaviors in relation to child PTSD clinical significance ($\beta = 18.01, p = .99$).

Table 4

Moderation Effects of Caregiver Childhood Maltreatment of Teacher Identification of Internalizing and Externalizing Behaviors and Child PTSD Clinical Significance at Ages 8 and 12

Predictor	β	<i>p</i>	SE
Age 8			
<i>Internalizing</i>			
<i>(N=273)</i>			
Internalizing	-.57	.60	1.09
Caregiver Abuse	.42	.38	.48
Caregiver Abuse x Internalizing	1.97	.11	1.03
<i>Externalizing</i>			
<i>(N=240)</i>			
Externalizing	-1.04	.34	1.08
Caregiver Abuse	.55	.24	.46
Caregiver Abuse x Externalizing	-.31	.84	1.53
Age 12			
<i>Internalizing</i>			
<i>(N=273)</i>			
Internalizing	-16.26	.99	1.08
Caregiver Abuse	-15.99	.99	.48
Caregiver Abuse x Internalizing	14.57	.99	1.23
<i>Externalizing</i>			
<i>(N=208)</i>			
Externalizing	-17.55	.99	7230.42
Caregiver Abuse	-16.42	.99	3336.80
Caregiver Abuse x Externalizing	18.01	.99	10316.04

* $p \leq .05$ ** $p \leq .01$

CHAPTER IV:

DISCUSSION

This study examined whether caregiver childhood abuse heightened children's PTSD symptomology, which would make it more likely that teachers could identify those internalizing and externalizing behaviors in the classroom. Moreover, this study attempted to examine an additional approach to combat and break the cycle of abuse by specifically identifying common symptomologies associated with experiencing maltreatment from a young age that teachers could look for in their classrooms. Overall, results did not support the hypothesis that caregiver childhood maltreatment would moderate the association among teacher identification of child symptomology and child PTSD symptomology. However, there were some key findings that are important to address for future research and intervention.

Teacher Identification of Student's PTSD Symptomology. Teacher identification of child internalizing and externalizing behaviors was comparable to caregiver identification of the behaviors. Teachers are vigilant to student behaviors, and willing to identify children in need of intervention. However, in order to more accurately identify these students, teachers will need better training and resources. Prior literature has found that teachers are more likely to report children with externalizing behavior problems as opposed to internalizing (Dowdy et al., 2007; Dwyer et al., 2006). Contrary to prior research findings, this study suggests that teachers reported similar rates of child internalizing symptomology as they did for externalizing. Externalizing symptomology is typically reported at higher rates in the classroom due to the distracting nature of those behaviors. To determine why teachers were able to identify internalizing as well as externalizing behaviors for children's PTSD symptomologies further research needs to be done.

While teachers may be identifying some children with internalizing and externalizing behaviors, this does not mean that they are identifying every child experiencing actual symptomologies. Cunningham and Suldo (2014) found that teacher nominations could only identify 40-50% of depressive and anxious symptoms in elementary-aged children. This means these teacher nominations were not able to identify about 50-60% of children who had high levels of depressive and anxious symptoms. Additionally, when teachers do report problems with students' behaviors, they are more likely to identify outward externalizing behaviors that cause a disruption to their classroom environment (Dowdy et al., 2007; Dwyer et al., 2006; Lane & Menzies, 2005; Rothì, Leavey, & Best, 2008). Even when teachers reported symptomology, they were not confident that they could determine whether the behaviors they identified were due to emotional or psychological problems (Rothì et al., 2008). Furthermore, while teachers in this study felt they had a duty to care and support their students in the classroom, they did not feel properly prepared to identify and intervene (Rothì et al., 2008). Teachers reported that they lacked the resources and knowledge to accurately identify students with mental health problems (Rothì et al., 2008). In order to address this identification problem, teachers should receive more in-depth training on common child symptomologies, especially the ones associated with childhood maltreatment.

Recent literature suggests that educators' knowledge and identification of mental health was significantly increased when they participated in training about mental health symptoms (Wei & Kutchner, 2014). Additionally, these educators felt they were more confident in successfully identifying and intervening with students who express mental health symptomology after training (Wei & Kutchner, 2014). Teachers have the opportunity to observe children throughout the entirety of the school day for a large portion of the year, which provides them with substantial opportunity to intervene when

students are experiencing mental health crises (Auger, 2004; Marsh, 2016). Therefore, it is critical for teachers to have the resources and ability to identify student PTSD symptomology in the classroom.

Caregiver Childhood Maltreatment as a Moderator of Teacher Identification and Child PTSD Symptomology. Overall, caregiver childhood maltreatment did not play a significant role as a moderator of teacher identification and child PTSD symptomology severity and clinical significance. However, when caregivers indicated they experienced childhood maltreatment, teachers' report of internalizing symptoms was associated with children's PTSD symptoms at age 12. This relation occurs around a crucial developmental period (i.e. puberty) when adolescents may be exhibiting more internalizing behaviors rather than externalizing. Additionally, literature indicates that teachers are more aware of internalizing symptoms during adolescence compared to childhood. There has been increased awareness about suicide during early adolescence, and more schools are implementing teacher trainings and prevention programs to identify warning signs (Lamis, Underwood, & D'Amore, 2017; Nadeem et al., 2011). Teachers in the current study may have gone through suicide prevention trainings and, as a result, were better equipped to identify adolescents exhibiting internalizing behaviors.

Limitations and Future Directions

The current study filled some of the gaps in the literature on childhood maltreatment by specifically addressing caregiver childhood maltreatment effects on child PTSD symptomology due to the cycle of abuse while also incorporating teacher identification of symptomologies commonly associated with child maltreatment. However, there were several limitations to the current study. First, the sample may not have been representative due to a lack of measure reporting and missing data. Specifically, the Southwest site data from the study could not be included in analyses

because the site did not provide any data for the caregiver childhood maltreatment variable. Additionally, a majority of caregivers who reported a history of child abuse did not report on any of the severity items. Without this severity data, the current study could only assess limited aspects of caregiver childhood maltreatment. Due to the sensitive nature of child maltreatment in general, it is possible that lack of disclosure impacted caregiver and child willingness to answer honestly for items about trauma, sexual abuse, and physical abuse, even with the prior knowledge of anonymity. Additionally, the current study did not separate children exposed to maltreatment from children at risk for maltreatment. This limitation could have produced a major impact on the interpretation of findings, because it is unknown if the cycle of abuse had occurred in this particular sample of children. This study also lacked information regarding whether the caregiver reporters were the ones reported to CPS for child maltreatment. Finally, the number of individuals meeting clinical significance for internalizing and externalizing behaviors and PTSD symptomology could be partially explained by small prevalence rates.

The current study provides a concrete layout for future research to build upon and add to the ever-growing literature on childhood maltreatment. Additionally, future studies should focus on training teachers and related school personnel on mental health screening. The more training and practice teachers receive, the more accurate and confident they will become about identifying students in need of intervention (Hatton et al., 2017; Wei & Kutchner, 2014). Furthermore, it may be beneficial to incorporate screening measures in addition to teacher reports about concerns for a child's well-being. The combination of data may contextualize symptoms experienced in the school setting, and may also increase the possibility that a child will not be missed when they desperately need to be identified for intervention (Eklund & Dowdy, 2014).

Conclusion

Childhood maltreatment bears an increased risk for a wide variety of adverse lifelong consequences, whether they are developmental, behavioral, emotional, or social (Dodge et al., 1990; Finzi-Dottan & Harel, 2014; Johnson et al., 2002; Masten, 2006). Consequently, there are multiple factors that are associated with the likelihood of falling into the cycle of abuse, and caregivers could potentially abuse their own children (Milaniak & Widom, 2015; Thornberry & Henry, 2013). In order to break the cycle of abuse, it is imperative that victims are identified and receive interventions in a timely manner. Teachers can be a great source for identifying suspicion of child maltreatment and the symptoms that tend to be most salient due to the traumatic nature of the abuse (Loades & Mastroiannopoulou 2010; Sinanan, 2011; Smith & Lambie, 2005; Splett et al., 2018). Childhood maltreatment will continue to be a substantial problem if additional efforts are not made to break the cycle of abuse. Children spend a majority of their time in the classroom, which gives teachers a unique role in the lives of students. For that reason alone, teachers should be trained in basic mental health symptomology identification. This study contributes to prior literature by adding important topics and changes to consider by involving trained teacher identification as a potential role in breaking the cycle of childhood maltreatment.

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