ABSTRACT

ARMSTRONG, JENNA MONTGOMERY. Internal Working Models of Physically Abused Children and Their Student-Teacher Relationships. (Under the direction of Dr. Mary E. Haskett).

Physically abused children tend to perform significantly worse than their non-maltreated peers in school and many of them struggle to develop positive relationships with others, including teachers. Considering the association between children’s quality of relationships with their teachers and their academic adjustment, information pertaining to how abused children are functioning in their relationships with teachers could be useful—yet there is limited research available on the topic. It is possible children’s internal working models of relationships, derived from interactions with their early caregivers, lay the foundation for later relationships with teachers. The purpose of the current study was to explore the association between within-group differences in internal working models of physically abused children and the quality of their student-teacher relationships. The current study included a subset (N = 70) of physically abused children ages 5 to 7 from a larger longitudinal study that investigated abused children’s adjustment in school. The McArthur Story Stem Battery served as the measure of internal working models and the Student Teacher Relationship Scale served as the measure of student-teacher relationship quality. Previous cluster analyses indicated two distinct subgroups of children; one group had relatively positive IWMs and the second subgroup had IWMs that were relatively maladaptive. As expected, significant differences in quality of student-teacher relationships between clusters emerged in this study, suggesting children with relatively adaptive working models had more positive teacher relationships. Interestingly, teachers did not rate their
relationships with children in the two subgroups differently on level of closeness. Implications for practice and future research are discussed.
Internal Working Models of Physically Abused Children and Their Student-Teacher Relationships

by
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Internal Working Models of Physically Abused Children and Their Student-Teacher Relationship

In 2011 there were 672,824 reported individual victims of child maltreatment in the United States (Annie E. Casey Foundation, 2011). This pervasive, detrimental societal issue demands our attention. Although there are several forms of maltreatment that are possibly detrimental to children, the focus of this study is physical abuse. Of particular interest for the current study, children who have a history of abuse are more likely than their non-abused peers to demonstrate difficulties in relationships with others. Specifically, physically abused children tend to exhibit an insecure attachment style (Baer & Martinez, 2006; Carlson, Cicchetti, Barnett & Braunwald 1989; Stronach et al., 2011), have conflictual peer relationships (Bolger & Patterson, 2001; Shields, Ryan & Cicchetti, 2001) and have more negative maternal representations when compared to their non-maltreated peers (Shields et al., 2001; Stronach et al., 2011).

Although research indicates that abuse is associated with poor interpersonal adjustment of children, there is evidence that the effects of abuse differ for individual children and across varying circumstances. These individual differences in adjustment are the focus of this thesis. Specifically, the current study is an investigation of within-group differences in abused children’s personal views of and expectations for relationships (i.e., their “internal working models”) and the degree to which those differences are associated with the quality of the children’s relationships with their teachers. The importance of investigating factors that might help us understand abused children’s relationships with teachers lies in past research showing that strong positive relations between children and the
adults in their lives can buffer against negative outcomes associated with a host of adverse experiences (Masten & Obradović, 2006), including abuse and neglect (Haskett, Nears, Ward & McPherson, 2006). Children’s internal working models and attachment security, in particular, could shape their relationships with teachers because research indicates that these models, or schemas, of children’s self-views and views of others are associated with the quality of their interpersonal relationships (Berlin & Cassidy, 1999; Bowlby, 1973; Page & Bretherton, 2001).

To lay the foundation for the current study, first I discuss the adjustment of maltreated children and more specifically physically abused children. Child maltreatment encompasses four subtypes which include physical abuse, emotional abuse, neglect and sexual abuse. Although the current study focuses on physical abuse, a large portion of the existing research focuses on efforts to understand causes and consequences of maltreatment as a whole because the subtypes have been found to frequently coexist (Manly, Kim, Rogosch & Cicchetti, 2001). Therefore, I borrowed from the literature on maltreatment and physical abuse to generate study hypotheses. For the purposes of this review of the literature, the term *maltreatment* is used to describe samples when the study under discussion included a sample of children who experienced multiple forms of abuse and/or neglect; when available, findings specifically related to the physically abused children in those samples are reported. The term *abuse* is used when referring to studies involving children who experienced primarily physical abuse. Second, attachment theory and the attachment style and internal working models (IWM) typical of maltreated children are presented. Third,
research to support the proposed association between abused children’s IWM and their student-teacher relationships is presented. Finally, the association between student-teacher relationships and academic functioning of children is highlighted and hypotheses of the current thesis are presented.

**Adjustment of Abused Children**

There is an abundance of literature associating physical abuse and maltreatment with a variety of adjustment variables. Relevant for the current study, adjustment in the areas of school/academic functioning and interpersonal relationships is discussed in this section. In addition, research that demonstrates a link between success in school and strong interpersonal relationships (e.g., Pianta, Nimetz & Bennett, 1997) is presented as a means of justifying the focus of the current study on student-teacher relationships of abused children.

**Educational adjustment.** Authors of several longitudinal studies have concluded that when compared to non-maltreated children, maltreated children tend to perform significantly worse in school even when controlling for demographic variables that can create an adverse environment for these children (Eckenrode, Laird, & Doris, 1993; Lansford et al., 2007; Mersky & Topitzes, 2010; Zolotor et al., 1999). Specifically, maltreated children are more likely than their non-maltreated peers to repeat a grade (Eckenrode et al., 1993), less likely to complete high school (Lansford et al., 2007; Mersky & Topitzes, 2010) and less likely to attend a four-year university (Mersky & Topitzes, 2010). Among maltreated children ages 6 and 8, Zolotor and colleagues found maltreatment was the strongest predictor over several demographic variables (i.e., gestational age, child depression/anxiety, presence of biological
father in home, having a working caregiver) of children’s academic performance and adaptive functioning. Cross-sectional studies have come to similar conclusions linking child maltreatment with negative academic adjustment (Crozier & Barth, 2005; Shonk & Cicchetti, 2001; Zingraff, Leiter, Johnson, & Myers, 1994). For example, when compared to their non-maltreated peers, maltreated children were found to obtain lower scores on standardized tests of achievement and cognitive functioning (Crozier & Barth, 2005; Shonk & Cicchetti, 2001), to have higher referral rates for special education services, and to exhibit lower school attendance rates (Shonk & Cicchetti, 2001). It should be noted that these findings are not replicated in every study. To illustrate, Fantuzzo, Pearlman and Dobbins (2011) found physical abuse was associated with poor classroom learning within a sample of 2nd grade students but was not associated with several other indicators of poor adjustment in school (i.e., low school attendance and suspensions).

Although there is variability in findings across studies, the bulk of prior research indicates that maltreated children, including physically abused children, are at risk for academic failure and maladjustment in the school setting. These difficulties could place abused children at risk for subsequent adjustment problems in other settings. In fact, many studies have linked maltreatment to higher rates of juvenile delinquency (Lansford et al., 2007; Zolotor et al., 1999). Zingraff and colleagues reported physically abused children in their sample were at an even higher risk of juvenile delinquency than children who had experienced other forms of abuse and neglect (Zingraff et al., 1994). Furthermore, Zingraff et al. (1994) found academic functioning (i.e., GPA, absenteeism and teacher reported
behavioral problems) mediated the association between physical abuse and juvenile delinquency; when academic functioning variables were controlled, the association between physical abuse and juvenile delinquency was no longer significant. This finding suggests that increasing the academic success of physically-abused children could potentially reduce the rate of juvenile delinquency and other behavior problems that commonly occur among these children. Given the strong associations between academic performance and students’ relationships with their teachers (Baker, 2006; Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1997), one potential path to improved academic success for abused children is through high-quality relationships with teachers. How maltreated children are known to be functioning in interpersonal relationships is presented in the next section. I borrow from literature on the peer relationships of abused children because there has been limited attention directed to their quality of relationships with teachers or non-familial adults (Haskett, Nears, Ward & McPherson, 2006).

**Interpersonal relationships of abused children.** Compared to their non-maltreated peers, maltreated children struggle to develop positive relationships. Specifically, research shows that maltreated children are more likely than non-maltreated children to have negative and/or high conflict peer relationships (Bolger & Patterson, 2001; Shields et al., 2001). In a cohort-sequential longitudinal study that followed maltreated children for three years starting in 2nd, 3rd or 4th grade, Bolger and Patterson (2001) reported chronic maltreatment was associated with an increased risk for peer rejection. Chronic maltreatment also was associated with child aggression; the longer the child was maltreated the higher the peer and
teacher ratings of child’s aggressive behaviors. Many other studies have pointed to strong links between physical abuse and aggression toward peers. Teisl and Cicchetti (2008) reported that physically abused children were rated more aggressive and disruptive by their peers than non-maltreated children and children who had experienced other forms of maltreatment. Similarly, Finzi, Ram, Har-Even, Snit and Weizman (2001) found physically abused and neglected children ages 6 to 12, compared to non-maltreated and neglected children, had significantly higher self-ratings of aggression and assaultive behavior. These aggressive tendencies of abused children could be harming their ability to develop positive interpersonal relationships.

Little is known about maltreated children’s quality of relationships with non-familial adults (Haskett, Nears, Ward & McPherson, 2006) but the existing knowledge does not suggest positive relationship functioning is occurring in this domain. For example, in a study of maltreated preschoolers’ IWMs and relationships with adults, Toth, Cicchetti, Macfie and Emde (1997) measured the IWMs of maltreated children via the MacArthur Story Stem Battery (MSSB; Bretherton, Oppenheim, Buschbaum, & Emde, 1990). Additionally, the child’s behavior towards the examiner during administration of each story stem was coded for controllingness (presence/absence) and quality of relationship. Quality of relationship with the examiner was defined as task enjoyment and responsiveness to the examiner and was measured on a Likert scale ranging from 1 (child non-responsive, averted eye gaze, no pleasure in task) to 5 (child never hesitates to respond to examiner, shows enjoyment of task and displays frequent eye contact and smiles). The authors found maltreated preschoolers,
when compared to their non-maltreated matched peers, were more controlling in their interactions with the examiner and evidenced a less positive relationship with the examiner. This suggests maltreated children are more likely to establish less positive relationships with adults, even in brief interactions, than are non-maltreated children. In summation, when physically abused children are compared to their non-maltreated matched peers’ they perform significantly worse in school and struggle more often to develop positive relationships with others. Next, the mechanisms theorized to be responsible for these poor interpersonal relationships are presented.

**Maltreated Children’s Attachment and IWMs**

According to attachment theories, children’s early relationships with their caregivers lead to the formation of internal working models (IWMs) which serve in the process of regulating the self as well as interpreting and predicting the behaviors of others (Bretherton & Munholland, 1999). Bowlby (1973) described children’s IWMs as mental representations of themselves and others used to regulate emotions and perceive the behavior of others. The formation of IWMs is largely influenced by a child’s attachment to their caregiver at an early age. A secure attachment relationship, fostered by sensitive and consistent caregiving practices, is associated with a positive or adaptive IWM in which children expect future relationships to be safe and predictable. In contrast, less sensitive, harsh or inconsistent caregiving practices can lead to the formation of an insecure attachment relationship; insecure attachment, in turn, predicts a negative or maladaptive IWM (Bretherton & Munholland, 1999; Moss, Bureau, Béliveau, Zdebik & Lépine, 2009).
Insecure/disorganized attachment of maltreated children. The harsh, inconsistent and unresponsive parenting characteristic of the physically abusive environment has been consistently linked to the development of insecure attachment in children. Specifically, disorganized attachment is the most common attachment style maltreated children exhibit (Baer & Martinez, 2006; Carlson et al., 1989; Stronach, et al., 2011). Children in this category are characterized as having contradictory intentions and/or exhibiting apprehensive behaviors during the Strange Situation paradigm used to classify young children’s attachment status (Lyons-Ruth & Jacobvitz, 2008). This pattern of attachment is displayed during the strange situation task by sequential displays of contradictory behavior, undirected or incomplete movements and freezing or hesitation (Goldberg, 2000). For example, children who are categorized as disorganized via the Strange Situation task will pause for a long time before they react during reunification with their caregiver. Sometimes, they may try to follow the stranger out of the room but start to run towards their mother during reunion only to pause and return to playing with their toys. Their reactions during separation and reunion are atypical and inconsistent and represent their confused expectations or fearfulness of their caregiver. In a meta-analysis, Baer and Martinez (2006) reported 80% of maltreated children exhibited an insecure attachment style compared to only 36% of the matched non-maltreated comparison group. Stronach and colleagues (2011) found when compared to equally high risk non-maltreated children, even children with low severity, non-chronic maltreatment had significantly lower rates of secure attachment and higher rates of disorganized attachment.
**Attachment, IWMs, and interpersonal relationships.** An abundance of literature provides evidence of the association between attachment classification and relationship functioning. To illustrate, Berlin and Cassidy (1999) summarized existing literature demonstrating that: (a) securely attached infants had less conflictual, more positive relationships with their siblings, (b) securely attached toddlers were more responsive to peers, (c) dyads composed of two securely attached children, when compared to an insecure/secure dyad, exhibited less negative play behavior, (d) children with secure attachment histories are more likely to make friends with other children who also have secure attachment histories and (e) securely attached children exhibit more reciprocal friendships. It is important to note that this is a correlation between attachment security and peer relationships and support for the predictive power of attachment security has been mixed. To illustrate, Schneider, Atkinson and Tardif (2001) reviewed existing literature to provide overall correlational effect sizes (ES) to show the power of the association between attachment security and peer relationships. The results were mixed ranging from an ES of .01 to .47 with $M = .20$ and $SE = .17$. Effect sizes were significantly stronger when children were older at the time of the study and if the children were at-risk. These findings shed light on the complexity of the associations between attachment security and relationship functioning. According to attachment theory, the mechanism behind the association between attachment and relationship adjustment is the influence of attachment on the child’s IWM. The connection between attachment security and IWMs is presented in the next section.
Association between attachment and IWMs. Attachment theory explains how child’s attachment classification is related to his/her IWM. IWMs are measured via a story stem task in which the content of children’s stories is coded for varying types of representations (self and parent) and themes. The stories are started by the administrator then completed by the child with the use of dolls matched to the child’s gender and ethnicity. The most commonly-used story stem task is the MacArthur Story Stem Battery (Bretherton, Oppenheim, Buschbaum, & Emde, 1990). This battery includes a set of social scenarios used to prompt children’s narrative stories. A variety of coding schemes have been developed, but coding for representations of the self and others and themes present in the stories dominate most of these coding systems. For the current study, the Rochester Narrative Coding Manual (Robinson, Mantz-Simmons, Macfie & The MacArthur Narrative Working Group, 1996) was utilized.

To examine the hypothesized link between attachment status and the development of IWMs, Moss, Bureau, Béliveau, Zdebik and Lépine (2009) used the Strange Situation to assess children’s attachment status between ages 5 and 7 then followed up two years later with the MSSB to assess the children’s IWM. They found, when compared to children who were classified as secure or insecure-avoidant, children who were classified as having a disorganized attachment status had more conflictual themes in their story stem narratives. In addition to themes of conflict and affiliation, a primary component of internal working models is mental representations. As first described by Bowlby (1973) and later by Bretherton and Munholland (1999), mental representations develop over continual interaction
with a primary caregiver and provide a lens through which the child views the world. This lens provides a template for children to predict how others are going to act, react, and interact with them in social situations. Children with a positive IWM have positive representations of themselves and others, view relationships worthwhile because they are worthy of relationships and believe they will benefit from the trustworthy accountable friendships they anticipate. In contrast, children with a negative IWM have negative representations of themselves and others—they see themselves as unworthy of relationships and believe others are hostile and untrustworthy.

Children’s representations of themselves and their parents are evident in their story stem narratives. For example, evidence of positive self-representations in the story stem task include instances of helping, pride, displays of empathy and feeling good about one’s self in any domain. Compared to their non-maltreated peers, maltreated children tend to have more negative or maladaptive IWMs. To illustrate, Toth, Cicchetti, Macfie, Maughan and Vanmeenen (2000) found maltreated children between the ages of 3 and 5 years tended to have more negative representations of their caregivers and of themselves. In addition, Stronach et al. (2011) reported preschoolers who had experienced maltreatment had less positive representations of the mother-child relationship than did their non-maltreated matched peers and Toth et al. (1997) reported the narratives of maltreated children contained more negative maternal representations. Furthermore, amongst the maltreatment subtypes, physically abused children exhibited the most negative maternal representations (Toth et al., 1997). Providing additional support for the negative nature of maltreated children’s IWMs,
Shields and colleagues (2001) investigated abused children’s (ages 8 to 12 years) IWMs in a summer camp setting using the MSSB. Maltreated children were identified via CPS reports and a matched sample of non-maltreated children who also attended the camp was used for comparison. The authors found maltreated children had more negative and less coherent representations of their caregivers, even when controlling for age and verbal ability. It is clear that maltreatment is strongly associated with the development of insecure attachment and the formation of negative IWMs.

**Individual differences in IWMs of abused children.** In spite of strong evidence that abused children’s IWMs tend to include high conflict, low affiliation, poor coherence, and negative representations of the self and parents, there is also evidence of individual differences in IWMs of abused children. Previously, Hawkins and Haskett (2013) investigated individual differences in IWMs of young abused children and established the sample utilized for the current study. The purpose of their investigation was to determine whether subgroups of abused children, clustered on the basis of their IWM, would differ in social-emotional adjustment at school. The MSSB was used as the measure of IWMs. Two subgroups, established using cluster analysis procedures, were labeled “Positive IWM” and “Negative IWM.” The clusters did not differ in terms of race or IQ scores, however the clusters did significantly differ on gender—the Positive IWM (44% girls; 56% boys) cluster had a greater proportion of girls than the Negative IWM cluster (14% girls; 86% boys). A series of t-tests revealed the Positive IWM cluster (N= 46) had significantly more occurrences of affiliation themes and positive representations (self and parent) in their
narrative stories. The Negative IWM cluster (N= 28) had significantly more conflictual themes and negative self-representations. In summation, the clusters differed on every aspect of IWMs (i.e., parent representations, self-representations, moral-affiliative themes and conflictual themes) except negative parent representations.

In terms of socioemotional adjustment, a repeated measures MANOVA revealed no interaction between socioemotional adjustment and cluster membership, suggesting the two clusters did not differ in their pattern of scores on the subscales of the measure of adjustment (Hawkins, 2012). However, there was a main effect of socioemotional scores indicating the entire sample had higher externalizing than internalizing scores. When internalizing and externalizing mean score differences between clusters were analyzed separately via t-tests the Negative IWM cluster had significantly higher internalizing and externalizing scores than the Positive IWM cluster (Hawkins, 2012).

Following up on the significant mean score cluster differences found for social emotional adjustment (internalizing and externalizing), a repeated measures MANOVA using all four subscales of the Teacher Report Form (TRF) (anxious/depressed, somatic complaint, attention problems and aggressive behavior) revealed the entire sample differed on the subscales of the TRF (Hawkins, 2012). A significant interaction between TRF subscales and clusters revealed the clusters had different patterns of scores across these TRF subscales. The Negative IWM cluster had higher scores on attention problems and aggressive behavior and lower scores on anxious/depressed and somatic complaints. In comparison, the Positive IWM cluster had consistent scores across the subscales. Furthermore, t-tests revealed the Negative
IWM cluster had higher mean scores than the Positive IWM cluster on attention problems, anxious/depressed and aggressive behavior but there were no cluster differences for somatic complaints (Hawkins, 2012). In terms of cluster differences in self-concept measured with the Pictorial Scale of Perceived Competence and Social Acceptance, a one-way ANCOVAs revealed that the only subscale on which the clusters significantly differed was maternal acceptance, with the Negative IWM cluster obtaining a significantly higher mean score (Hawkins, 2012).

These findings indicate that within-group differences in IWMs of abused children are meaningful in terms of understanding the children’s socioemotional adjustment in the school setting. The aim of the current study was to further the investigation of these within-group differences by examining the student-teacher relationship quality of abused children in the Positive IWM and Negative IWM clusters identified by Hawkins and Haskett (2013). In the next section I provide support for the hypothesized link between children’s IWM and their relationships with teachers by reviewing research on the association between parent-child relationships—which form the basis for IWM—and student-teacher relationships.

**Connecting the Mother-Child Relationship to the Student-Teacher Relationship**

In accordance with attachment theory, past research has linked the quality of children’s relationships with their mothers to the quality of their student-teacher relationships. Pianta has been the leader in this area of investigation. To illustrate, among a high-risk preschool population, Pianta et al. (1997) found children who had more positive relationships with their mothers also got along better with their teachers. Data were collected
during the child’s preschool and kindergarten years and included information from the child’s mother and both preschool and kindergarten teachers. Relationship quality with mothers was coded during a mother-child interaction task and teacher relationship quality was measured with the Teacher Attachment Q-Set in preschool and the Teacher-Child Relationship Scale in kindergarten. As expected, results indicated that children who displayed warmth and affective sharing during the mother-child interaction task had more secure, less conflicted relationships with their preschool teachers. Children who displayed control issues during the mother-child interaction task had conflicted, insecure and dependent relationships with their teachers. Similarly, Page and Bretherton (2001) found preschoolers whose representations of the mother figure were positive, (i.e., protective, comforting and supportive) exhibited a low conflict student-teacher relationship. Next, the association between student-teacher relationships and academic adjustment is presented.

**Importance of Student-Teacher Relationships**

The quality of children’s student-teacher relationship relates to their ability to perform academically. Generally, a more positive student-teacher relationship is associated with better academic functioning (Baker, 2006; Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1997). To illustrate, Pianta et al. (1997) found children ages 3 to 4 years with more positive student-teacher relationships had higher Boehm scores (measure of overall competence) than did children who had less positive student-teacher relationships. Additionally, higher student-teacher conflict scores were associated with poorer child work habits and lower frustration tolerance. Similarly, Birch and Ladd (1997) investigated the
association between the student-teacher relationship and academic adjustment of kindergarteners. They found children who had positive relationships with their teachers, measured by the Student Teacher Relationship Scale (STRS), performed better academically, felt less lonely in school, and had more positive school attitudes than did children with poor relationships with teachers. Interestingly, children rated by their teachers as being more dependent reported that they felt lonelier in schools. Solidifying dependence as a relevant aspect of the relationship between students and teachers, the authors found children rated as less dependent by their teachers scored higher on measures of academic achievement (Birch & Ladd, 1997).

The quality of children’s relationships with their teachers can be especially important for children who are already at-risk academically. In a study examining the importance of the student-teacher relationship quality for children in kindergarten through 5th grade, the quality of children’s relationships with their teachers was found to act as a protective factor against negative academic adjustment for children exhibiting externalizing behavior problems (Baker, 2006). Specifically, externalizing behavior problems moderated the association between student-teacher relationships and academic adjustment (i.e., academic grades, standardized reading scores, classroom adjustment and total school problems). Considering physically abused children tend to exhibit high rates of externalizing behavior (Teisl & Cicchetti, 2008), this finding suggests the quality of the student-teacher relationship could be especially important for this at-risk population. To better serve physically abused children in
schools it is important we understand how abused children are functioning in these critical relationships.

The Current Study

From this literature review it is evident children’s attachment status contributes to the basis of their IWMs; internal working models, in turn, predict how children interact with others and perceive others’ actions towards them. Abused children tend to develop negative IWMs, due at least in part to their insecure attachment status, although clinically-relevant individual differences in IWMs of abused children do appear to exist. As outlined in the literature review, having a negative IWM can hinder a child’s ability to form healthy interpersonal relationships. Furthermore, children’s inability to form healthy relationships, especially with their teachers early in school, can have a negative association with their school performance. Interestingly, my literature search uncovered no information on maltreated children’s relationships with their teachers. This was surprising given their high risk for difficult relationships with teachers by virtue of insecure attachment and IWM of others as unpredictable, harsh, and unsafe—exposing a large research gap this investigation was designed to fill. Within-group differences of abused children are not found in the literature on adjustment of abused children as often as studies that compare maltreated to non-maltreated children, especially in terms of IWMs. Within-group differences of abused children are important aspects to explore to potentially promote and understand resiliency within this population. This study aimed to investigate the association between within-group IWM differences of abused children and the quality of their student-teacher relationship.
Hypotheses

1. The two IWM clusters will differ in their student-teacher relationship quality, as measured by the Student-Teacher Relationship Scale (STRS).
   a. Assessment of the main effect of STRS scores indicating differences in the pattern of scores across the Dependency, Closeness and Conflict variables for the entire sample is exploratory because there is no prior research or theoretical basis for directional hypotheses.
   b. A significant interaction between cluster membership and STRS scores is anticipated. The clusters are expected to differ in their pattern of scores on the STRS variables.
   c. ANCOVAs will reveal the Positive IWM cluster to have a significantly higher mean score than the negative IWM cluster on the Closeness subscale and significantly lower scores on the Conflict and Dependency subscales.

2. The clusters will differ on their overall student-teacher relationship quality.
   Specifically, there will be significant mean differences between clusters on their Total STRS scores such that the Positive IWM cluster will have a significantly higher mean score than the Negative IWM cluster.

3. A significantly greater proportion of children in the Negative IWM cluster will have subscale and Total scores in the clinically significant range compared to the proportion of children in the Positive IWM cluster in the clinical range.
Method

Participants

The sample included a subset of physically-abused children from a larger study containing 94 parent-child dyads. The larger study was a longitudinal design in which children were assessed at preschool, kindergarten and first grade. Criteria for inclusion in the larger study included: (a) a substantiated report of physical abuse within the last 12 months, (b) the absence of child sexual abuse, (c) the families’ primary language was English, (d) confirmation the parent-child dyad resided in the same home at time of enrollment and (e) the absence of untreated parental substance abuse.

The subset for this study was a subset previously established in Hawkins and Haskett (2013). This subset included 74 children who had completed measures of IWMs and teacher reports of children’s adjustment from one time point. Many children were not enrolled in preschool during the first time point, so there were no teacher data for that time point; therefore, only kindergarten or first grade time points were used. The most complete time point for each child was utilized, with the first grade time point taking precedence if both time points were equally complete. Four children who were included in the Hawkins and Haskett sample were not included in the current thesis because of missing student-teacher relationship data. Thus, the subset for the current study includes 18 children in kindergarten and 52 children in first grade (N = 70). The 70 children were between the ages of 5 and 7 (M = 5.94, SD = .54) and were predominately Black (70%) males (66%). The mean family SES
(Hollingshead, 1975) for this sample was 3.67 ($SD = 1.07$) on a scale of 1 (lowest) to 5 (highest).

**Procedures**

Participants for the larger study were identified by a Child Protective Services staff member who selected eligible families from the child protection registry who had substantiated cases of physical abuse. Parents of the identified children were sent a letter informing them of the study and providing them with the research office contact information. Interested parents called the research office and completed a voluntary interview with a research project staff member to ensure their eligibility for the study. If a family met the criteria for inclusion, the first three-hour data collection session was scheduled. Families were asked to complete one three-hour data collection meeting each year for three years.

To encourage families to participate, parents received $70 compensation for the first time point, $80 for the second time point and $90 for the third time point. Additionally, they were provided transportation to and from the data collection site and child care during data collection. Families were entered into a monthly drawing to win an additional $50 for every session they attended. Parents were given contact information for local family support resources and child participants were given a small toy and educational materials. Precautions were taken to ensure the privacy of participants. Specifically, this included assigning each participant an identification number and keeping files in locked cabinets. A “Certificate of Confidentiality” was maintained to protect information obtained in data collection from being used in court proceedings.
At the start of each data collection session, parents provided informed written consent and children provided verbal assent for participation in the study. Measures were administered to the parents and children at the same time, in separate rooms, by undergraduate research assistants who were blind to the families’ abuse history and study hypotheses. Following the families’ data collection session, teachers were asked to complete measures pertaining to the child’s behavior and quality of the student-teacher relationship to schedule playground observations (data from playground observations will not be included in the current study). Teachers were given $15 for their participation. The university’s Institutional Review Board granted approval for the larger study.

Measures

**Student Teacher Relationship Scale (STRS; Pianta, 2001)**. The STRS is a teacher report measure that was designed to assess the quality of the student-teacher relationship on the basis of three subscales: Closeness, Conflict and Dependency. This measure is based on attachment theory and research linking early school experiences to child outcomes. To complete the 28-item measure, teachers indicate the degree to which each item applies to the child using a 5-point Likert scale ranging from 1 (definitely does not apply) to 5 (definitely does apply).

A total score is derived from the three subscale totals that represent the overall quality of the student-teacher relationship, with higher Total scores indicating lower dependency and conflict and higher closeness (Pianta, 2001). There are subscale scores derived for Closeness (11 items), Conflict (12 items) and Dependency (5 items). All three subscale and Total scores
were used in analyses. Raw scores were converted to percentile scores based on child gender for all three subscales and Total scores. According to the Pianta (2001), percentile scores below 25 on the Total score and Closeness subscale represent an extremely low relationship quality. Percentile scores above 75 on the Conflict and Dependency subscales represent low relationship quality.

Psychometric properties of the STRS are very strong. In terms of reliability, Pianta (2001) examined internal consistency of scales using the large normative sample \((N = 1,535)\) and reported high internal consistency for Conflict (alpha = .92), Closeness (alpha = .86) and Total scores (alpha = .89). The Dependency subscale alpha was lower, at .64. Due to the lower internal consistency of the Dependency subscale, caution will be used when interpreting results from this subscale. Scores are highly stable over time. Based on a subset of 24 kindergarten teachers from the large normative sample, test-retest correlations ranged from .76 to .89 for each subscale and the Total score over a four-week period.

In terms of the concurrent validity of the STRS, Birch and Ladd (1998) reported moderate correlations among STRS scores (all subscales and total score) and scores on a measure of teacher-reported behavior with peers. To support the predictive validity of the STRS, Hamre and Pianta (2001) found a significant correlation between kindergarten STRS scores and future academic outcomes in first through eighth grade. In a validity study of the STRS, Doumen and colleagues (2009) found the child’s view, a peer’s view, and an observer’s view of the teacher-child relationship significantly correlated with the teacher’s view as measured by the Conflict and Closeness subscale on the STRS. In contrast,
convergence was not found for the Dependency subscale. In support for the validity of the Dependency subscale, Hamre and Pianta found moderate but statistically significant correlations among kindergarteners’ Dependency subscale scores and their math and language arts grades, positive work habits ratings, and standardized test scores. Also, Birch and Ladd (1998) reported Dependency scores were positively correlated with subsequent frequency of antisocial behavior in first grade, asocial behavior in kindergarten and first grade, and negatively associated with prosocial behavior in first grade.

**MacArthur Story Stem Battery** (MSSB; Bretherton, Oppenheim, Buschbaum, & Emde, 1990). The MSSB is a story-stem completion task designed to measure children’s representations of relationships and other aspects of internal working models. The MSSB includes several story stems that investigators can choose to administer to meet their own research goals. The six stories chosen for the larger study (and therefore the current investigation) were family-related and designed to be relevant to young children; they were the same or very similar story stems used by investigators in prior studies of working models of maltreated children (Toth, Cicchetti, Macfie, Maughan & Vanmeenen, 2000; Toth, Cicchetti, Macfie, Rogosch & Maughan, 2000). Content areas of the stories included: (a) child accident, (b) child injury, (c) parental conflict, (d) child fear and family interaction, (e) parent-child separation and (f) parent-child reunion. Prior to administration of the six stories, an example exercise utilizing a birthday party story was used to ensure the child’s familiarity with the procedures.
Children were administered the stories individually by trained research assistants who instructed the children to “Listen to the beginning of the story, then finish it the way you would like to.” At the conclusion of the researchers’ story introduction, the children were instructed to “show me and tell me what happens now.” Children used gender- and ethnicity-matched dolls (Mother, Father, Grandmother and two same-sex child dolls) in addition to their own words to finish each story the researchers began for them. Children’s responses were videotaped for later coding.

Undergraduate research assistants coded children’s responses to the six stories using the Rochester Narrative Coding Manual (1996). Coding of the MSSB task was an intensive process that first involved determining the absence or presence of various themes and types of representations within each individual story. Themes coded included: affection, affiliation, compliance, empathy, reparation/guilt, aggression, verbal conflict and escalation of conflict. The raw score for each theme was calculated by summing the total number of stories (0-6) in which the theme was found present. Then, following procedures established in Toth, Cicchetti, Macfie, Rogosch and Maughan (2000), the theme scores were added together to form two separate composite scores: Moral-Affiliative and Conflictual. The Moral-Affiliative composite score was composed of raw scores from affection, affiliation, compliance, empathy and reparation/guilt then divided by 5 to derive a composite score. The Conflictual composite score was composed of raw scores from aggression, verbal conflict, and escalation of conflict then divided by 3 to derive a composite score.
Self representations and parent representations from all six stories were coded. Self representations coded included: positive, negative and false. The Positive self representations score was the total number of stories that included positive representations (ranging from 0 to 6). The negative self representations score was the total number of stories in which negative self representations were present. The false representations score was the total number of stories in which false self representations were present. Negative and false self representations were combined to create a Negative self representations composite score. The Negative self representations composite score was calculated as the sum of negative and false self representations divided by 2 (range of 0 to 6). Parent representations coded included: positive, negative, controlling or incongruent. Parent representations were then separated into two composite scores: Positive and Negative. The Positive parent representations composite score consisted of the total number of stories in which positive representations were found (a range from 0 to 6). Negative, controlling and incongruent parent representations were scored separately for their presence or absence in each of the six stories (range of 0 to 6 for each of the 3 scores). Then, the Negative parent representations composite was determined by adding the scores from negative, controlling and incongruent parent representations then dividing by 3 (ranged from 0 to 6). Diagrams depicting how the theme and representation variables were condensed can be found in Appendix A.

Supporting the validity of the MSSB and Rochester coding procedure, many studies utilizing the MSSB and Rochester coding system have reported results revealing significant differences in the story stems of maltreated and non-maltreated children (Stronach et al.,
2011; Toth et al., 1997; Toth, Cicchetti, Macfie, Maughan & Vanmeenen, 2000; Toth, Cicchetti, Macfie, Rogosch & Maughan, 2000). For example, Toth, Cicchetti, Macfie, Rogosch and Maughan (2000) reported maltreated children demonstrated significantly fewer moral-affiliative themes and significantly more conflict themes. The same study reported correlations between narrative representations and teacher-rated internalizing and externalizing behavior problems. Additionally, the association between maltreatment and externalizing behavior problems was mediated by conflict themes found in children’s story narratives. Toth, Cicchetti, Macfie, Rogosch and Maughan (2000) found relations between children’s attachment status and representations in the MSSB. Specifically, children with disorganized attachment had the highest amount of conflict representations and children classified as secure had more discipline themes than did avoidant children. Also, the authors found children’s conflict themes predicted levels of externalizing behaviors and total problem behaviors even after controlling for variance explained by gender and disorganized attachment status. In summation, several researchers have validated the use of the MSSB with maltreated children.

In a review of research using the MSSB, Holmberg, Robinson, Corbitt-Price, and Wiener (2007) reported moderate to high inter-observer agreement found across studies (kappa ranges from .64 to 1.0). Although most reports of inter-rater agreement are in the moderate to high range, these statistics should be interpreted with caution due to the potential differences in coding procedures. The authors utilized the Rochester Narrative Coding Manual (1996) and found high inter-rater agreement ranging from kappa ranges .71 to 1.0 for
parent and self-representations (Toth, Cicchetti, Macfie, Maughan, & Vanmeenen, 2000). Also, they reported percent agreement ranging from 88% to 100%. For Moral-affiliative and Conflictual composite scores, kappa ranged from .73 to .95 (Toth, Cicchetti, Macfie, Rogosch & Maughan, 2000). Moss et al., (2009) reported similar kappa values ranging from .76 to 1.0. Hawkins and Haskett (2013) calculated percent agreement for the variables that will be used in the current study and found values ranging from 78% to 100% between coders (median = .83); inter-rater reliability was assessed for approximately 25% of the participants.

**Clustering**

In the previous study based on the subsample for the current study (Hawkins & Haskett, 2013) children’s scores for positive child representations, negative child representations, positive parent representations, negative parent representations, moral affiliative themes, and conflictual themes were used in a clustering procedure to form subgroups of the sample of children. A hierarchical agglomerative clustering method was used due to the relatively small sample size and exploratory nature of the study (Everitt, Landau & Leese, 2001). Squared Euclidian Distance was used to determine the distance between cases because variables were continuous (Everitt, Landau, Leese & Stahl, 2010). First, Ward’s minimum variance method was used to fuse clusters. This method defines distance between clusters as the increase in sums of squares; that is, the procedure subgroups individuals by trying to minimize the increase in total within-cluster error sum of squares variance (Everitt et al., 2010). Support for a two-cluster solution was found using two
methods—change in agglomeration coefficients and visual inspection of the dendogram. Second, to confirm the cluster structure found via Ward’s method, the average-linkage method was used. This method defines the distance between clusters as the average of the distance between pairs of all individuals that are made up of one individual from each group (Everitt et al., 2010). Everitt et al. (2001) suggest it is best practice to use multiple cluster distance measures to confirm the cluster solution. All methods used by Hawkins and Haskett (2013) were consistent with a two-cluster solution. The authors confirmed the validity of the clusters by demonstrating that the clusters differed significantly on behavioral and emotional functioning in school. The current study, with a slightly smaller overall sample size than Hawkins and Haskett, included 44 children in the Positive IWM cluster and 26 children in the Negative IWM cluster.

Results

Preliminary Analyses

To thoroughly describe the data, means, standard deviations, skewness and kurtosis were computed for each of the dependent variables (STRS closeness, dependency, conflict and total scores) for the full sample and separately by IWM cluster (see Tables 1 and 2). Variables were plotted using histograms and no outliers were detected. It was concluded that there were no individual cases having undue influence on the data, therefore, no cases were excluded. The significance of skew and kurtosis values were computed by dividing the skew and kurtosis values by the standard error (Tabachnik & Fidell, 2001). Dividing the skew values by the standard error to create z-scores revealed no significant skew values for the data set as a whole. However, when separated by cluster, the Negative IWM cluster’s total
scores were significantly positively skewed and the Positive IWM cluster’s conflict scores were significantly positively skewed. As a whole, the distribution of the data was flat, indicating a wide range of scores and resulting in several significant kurtosis values. Considering MANOVA analyses are robust enough to withstand these deviations from normality (Field, 2009), it was decided no transformations of the data were necessary to continue.

For this sample of physically abused children ($N = 70$, 23 girls, 47 boys), the Positive IWM cluster included 44 children (20 girls, 24 boys) and the Negative IWM cluster included 26 children (3 girls, 23 boys). A Chi Square analysis confirmed there was a significantly greater proportion of girls than boys in the Positive IWM cluster ($\chi^2 [1, 70] = 8.52, p < .004, \phi = .35$). It was necessary, therefore, to include gender as a covariate in future analyses. To prepare for the MANCOVA analysis, gender was recoded (male = 1; female = 0) to act as a correlational covariate. By including gender as a covariate, systematic and within-group error was reduced by equalizing groups being compared (Dattalo, 2013).

To check that the variables were fit for MANCOVA analysis, correlations (see Table 1) between all of the STRS variables were completed. Although some degree of correlation among dependent variables is necessary for MANOVA analyses, highly correlated dependent variables could increase likelihood of type 1 or 2 error (Tabachnik & Fidell, 2001). Pallant (2010) suggested any correlations above .80 warrant removal from MANCOVA analyses. As expected, the only significant correlation above .80 existed between the Total score and Conflict scores; therefore, the Total score was analyzed in a separate ANCOVA.
Primary Hypotheses

To address the primary hypothesis of the study (hypothesis 1b), a Repeated Measures MANCOVA, controlling for gender, was completed. Before interpreting the results of the MANCOVA, assumptions were checked. Box’s $M$ test was insignificant ($p = .92$) meaning the assumption of homogeneity of variance-covariance was not violated. The interaction effect between the covariate (gender) and STRS scores was insignificant ($F[2, 66] = .91, p = .41$, partial $\eta^2 = .03$) indicating the homogeneity of regression slopes assumption was not violated. The two levels of cluster membership (Positive and Negative) served as the independent variable (between subjects) and the three STRS subscale variables (Closeness, Conflict and Dependency) served as the dependent (within-subjects) variables for the RM-MANCOVA. As hypothesized, a significant interaction effect between cluster membership and STRS scores indicated the clusters did significantly differ in their pattern of scores on the STRS variables ($F[2, 66] = 5.29, p = .007$, partial $\eta^2 = .14$). There was not a significant main effect for STRS scores (hypothesis 1a) ($F[2, 66] = .098, p = .91$, partial $\eta^2 < .01$) meaning that there were no differences in mean STRS subscale scores for the full sample.

To follow up on the significant interaction effect, a series of ANCOVA’s, controlling for gender, were conducted (hypothesis 1c). The Positive IWM cluster had significantly lower mean Conflict ($F[1, 67] = 15.91, p < .00$, partial $\eta^2 = .19$) and Dependency ($F[1, 67] = 6.22, p = .02$, partial $\eta^2 = .09$) scores than the Negative IWM cluster. Interestingly, the clusters did not significantly differ in terms of mean Closeness scores ($F[1, 67] = 1.81, p = .18$, partial $\eta^2 = .03$). In terms of overall student-teacher relationship quality (hypothesis 2),
an ANCOVA revealed the Negative IWM cluster had a significantly lower mean Total score than the Positive IWM cluster ($F \ [1, 67] = 10.70, \ p = .002$, partial $\eta^2 = .14$).

**Clinical Hypotheses**

To investigate the clinical meaning of the findings (hypothesis 3), new dichotomous variables were created for each of the STRS variable scores to identify individuals as either (a) at or above the clinically significant range (below 25% on the Total score and Closeness subscale; above 75% on the Conflict and Dependency subscales) or (b) not in the clinical range. A series of Chi Square 2 X 2 tests for independence were used to determine if one cluster included a greater proportion of children falling in the clinically significant range for each of the STRS variables. The results aligned well with the results of the ANCOVA’s—there was a significantly greater proportion of children in the Negative IWM cluster falling in the clinically significant range for Dependency ($\chi^2 \ [1, 70] = 3.87, \ p = .049, \ phi = .27$), Conflict ($\chi^2 \ [1, 70] = 12.84, \ p < .000, \ phi = .46$) and Total ($\chi^2 \ [1, 70] = 6.11, \ p = .01, \ phi = .33$) scales. There were no clinical differences found in the proportion of children in each cluster in the clinically significant range in terms of Closeness scores ($\chi^2 \ [1, 70] = .50, \ p = .48, \ phi = .33$).

**Discussion**

Children who have experienced physical abuse, when compared to non-maltreated children, are at an increased risk for school failure (Eckenrode, Laird, & Doris, 1993; Lansford et al., 2007; Mersky & Topitzes, 2010; Zolotor et al., 1999) and tend to have more negative relationships with others. (Bolger & Patterson, 2001; Shields et al., 2001). However,
all children who experience abuse are not subject to these negative outcomes. Notably, within-group differences in children’s internal working models of relationships have been found (Hawkins & Haskett, 2013). Children’s working models are shaped by their early interactions with primary caregivers and are theorized to be the foundation on which they base all social interactions, including their teacher relationships. The quality of the student-teacher relationship is of particular importance because previous research found that children with higher-quality teacher relationships also performed better in school (Baker, 2006; Birch & Ladd, 1997; Hamre & Pianta, 2001; Pianta et al., 1997). The purpose of this study was two-fold—to determine how physically abused children were functioning in their relationships with teachers and to investigate if individual differences in children’s IWM (Positive or Negative) predicted the quality of their relationships with teachers.

**Abused children’s teacher relationship quality**

One aim of this study was to describe how this sample of young abused children was functioning in their student-teacher relationships because this information was lacking in the existing literature. As an entire sample, these abused children were functioning very similarly to the general population in their teacher relationships. This sample’s average scores were similar to what Pianta (2001) reported for the normative STRS sample. This finding suggests that despite a history of physical abuse these children could be considered *resilient* in terms of the quality of their relationships with their early teachers. This promising finding is intriguing considering most research investigating abused children’s interpersonal relationships does not indicate they are functioning as well as the general population, at least
with respect to peer relationships (Bolger & Patterson, 2001; Shields et al., 2001; Toth, Cicchetti, Macfie & Emde, 1997). Perhaps abuse has a more devastating impact on children’s peer relationships than on their relationships with teachers. Future studies should investigate quality of peer and teacher relationships of abused children for the same sample of children. It is also possible the positive relationships between children and teachers in this sample are unique to this particular sample of abused children. Examining the inclusion criteria for the present study might provide some insight into this finding. Although all children included in this study had a substantiated case of physical abuse within the last year, they also had to have been residing with their parent(s) (i.e., the perpetrator of abuse) in order to be considered for inclusion in the study. Child abuse cases where children are able to remain in their homes with their abusers are likely to differ from those who are removed; abuse leading to separation of the child from the parent tends to be more severe and/or chronic. It is possible that children who experience more severe abuse might have more dysfunctional relationships with their teachers.

**Relation between IWM status and teacher-student relationship quality.**

As expected, physically abused children’s working models predicted within-group differences in their teacher relationship quality. Children with relatively positive working models had significantly less conflict with their teachers, less dependency on their teachers, and a better overall relationship with their teachers. Further, children with healthier working models were more likely to have an overall more positive relationship and fewer negative relationship qualities than children with less healthy working models. These findings are
consistent with the literature on attachment, indicating that children’s IWM’s serve as a lens by which they view the world, impacting their relationships with others on a daily basis as Bowlby (1973) initially described.

Interestingly, the working models of abused children did not predict how close they were to their teachers. Teachers reported they felt just as close to children with relatively adaptive and maladaptive working models, despite differences reported in the conflict and dependency aspects of the relationship. Considering the negative trajectory children with a history of abuse often experience in school adjustment, this closeness regardless of high conflict and dependency could be especially beneficial to these children and could act as a protective factor. In fact, Baker (2006) reported that having a positive teacher relationship acted as a protective factor against poor academic adjustment for children who were academically at-risk. Whether having a close relationship with their teacher, despite higher levels of conflict and dependency, is beneficial to abused children with relatively maladaptive working models is an important direction for future research.

This trend of high closeness despite high levels of conflict and dependency is explained by Pianta (2001) as unusual but possible. For abused children this pattern might not be unusual considering previous research that reported maltreated children longed to be psychologically close to their teachers (Lynch & Cicchetti, 1992). Lynch and Cicchetti (1992) investigated maltreated children and a matched sample of non-maltreated children at a summer camp who self-reported on their relatedness to their teachers. The children were interviewed using questions from two domains (psychological proximity seeking and
emotional quality) of the Rochester Assessment Package for Schools. They found maltreated children, compared to non-maltreated children, reported significantly more psychological proximity seeking. Maltreated and non-maltreated children reported similar levels of teacher-related emotion. This high degree of psychological proximity seeking could be influencing the teachers’ ratings of closeness to these abused children. It is also the case that heightened psychological proximity seeking could be influencing the teachers’ ratings of dependency, as psychological proximity seeking could relate to both STRS subscales (closeness and dependency).

**Clinical significance of cluster differences**

The group of children with relatively maladaptive working models, compared to the group with relatively adaptive working models, included a greater proportion of children exhibiting clinically significant levels of conflict and dependency in their relationships with teachers. This indicates that teachers saw a clear difference in their relationship quality between these two groups of children. Teachers viewed more children with relatively maladaptive working models as overly reliant on them and as having severely conflicted relationships with them. Additionally, the group of children with relatively maladaptive working models included a greater proportion of children in the clinically significant range in terms of overall relationship quality with their teachers. This affirms the findings already discussed and speaks to the strong nature of the differences between subgroups of abused children with different internal working models of relationships. Because these findings are clinically relevant, it is very likely teachers are observing differences between these groups
of children who have relatively adaptive or maladaptive working models in the classroom setting. These findings suggest children with relatively negative working models could benefit from interventions aimed at increasing the quality of the student-teacher relationship, such as Banking Time (Pianta, 1999).

Pianta (1999) describes Banking Time as an intervention that is designed to promote non-directed, child centered activity time as a means of increasing the relationship quality between students and teachers. Essentially, Banking Time is a metaphor for “saving up” positive experiences so that the relationship can withstand conflict and tension when those difficulties arise between students and teachers. Including this non-directed, child-centered play time during the school day is especially important for children who exhibit frequent conflict or behavioral problems because it is often the case that adult-child activity is controlled and dominated by the adult as an effort to decrease conflict and child problem behaviors. Because many maltreated children exhibit externalizing behaviors (Teisl & Cicchetti, 2008) and conflict with peers (Bolger & Patterson, 2001), this intervention could be especially beneficial to children who have experienced abuse. When child-adult interactions are dominated or controlled by the adult it does not give the child or adult a chance to engage in a positive, non-stressful interaction. It is very important these one-on-one or small group, 5 to 20 minute child-directed play sessions are not contingent on the child’s good behavior; instead this time should be encompassed into an everyday schedule that remains consistent (Pianta, 1999). It is especially important for children with a relatively maladaptive working model to form positive relationships via Banking Time with their
teachers because of the increased negative relationship attributes (high conflict and dependency) and less positive overall relationship they tend to experience with their teachers.

Limitations and future directions

Although this study makes an important contribution to the literature, it is not without limitations. This sample was predominantly male and African American and although that is expected given that a higher proportion of African American children experience physical abuse (Annie E. Casey Foundation, 2011) it makes it difficult to generalize these findings to females and other races. This lack of diversity in the sample could have impacted the results in a few ways. First, boys, when compared to girls, tend to exhibit more externalizing behaviors which can impede boys’ ability to form healthy interpersonal relationships. Second, ethnicity and more specifically teacher-child ethnicity match, has been found to be associated the quality of the teacher relationship (Saft & Pianta, 2001). Saft and Pianta (2001) reported children who shared the same ethnicity as their teacher had more positive relationships with their teachers. However, ethnicity match only accounted for 4% of the variance in their relationships. Even though the effect was small, the finding is important and the match in ethnicity between teachers and students might be even more important for students who already have a negative relationship with their teachers. Future research could focus on gathering a more diverse sample with equal proportions of girls and boys and children from a variety of racial and ethnic backgrounds.

In the present study, participants were required to have a substantiated case of physical abuse within the last year but the researchers were unaware of the children’s full
abuse history or if the abuse continued during their participation in the study. Additionally, children who participated were still residing with their parent (abuser) which could mean they were experiencing less severe or chronic abuse than children who were removed from their homes and therefore not included in the study. Some studies have found significant differences in adjustment of children who experience different types and levels of severity and chronicity of maltreatment (Manly, Kim, Rogosch & Cicchetti, 2001), although not every study has supported that finding (Stronach et al., 2011). The age of first abusive incident also can be associated with differences in adjustment of children (Fantuzzo, Pearlman, & Dobbins, 2011; Manly, Kim, Rogosch & Cicchetti, 2001). In summary, important information relating to the child’s history of abuse was unavailable for this study. Future studies could provide additional information related to individual differences in adjustment of abused children by attaining a more comprehensive history of abuse.

The data for this investigation were cross sectional; longitudinal data could provide insight into how internal working models relate to the quality of student-teacher relationships and other outcomes later in life. For example, how does having a relatively negative IWM in first grade relate to children’s academic performance in high school? Knowing the long-term significance of these clinically-relevant IWM differences could entice policy makers to fund interventions designed to promote abused children’s early interpersonal relationship skills.

This study established that having a relatively adaptive internal working model is associated with overall more positive teacher relationships, but a bigger question remains pertaining to the directionality or likely cyclical nature of this relationship. Establishing a
directional causal link between children’s working models and quality of relationships with teachers was not feasible in the current study. Future research could be directed to longitudinal studies that continually measure working models over time to determine their malleability and the degree to which IWM and relationships with teachers shift and change over time. Previous research suggests children who have undergone extreme trauma (i.e., physical abuse from a family member), compared to children who have not, could be more likely to change attachment classifications across their lifespan, suggesting their working models are more malleable. For example, Waters, Merrick, Treboux, Crowell and Albershein (2000) reported that 74% of children maintained the same attachment classification from the age 12 months (measured by the Strange Situation paradigm) to the age of 21 years (measured by the Adult Attachment Interview). However, among children who experienced trauma prior to 12 months of age, 44% had changed classification status by age 21 years. Comparatively, only 22% of children who did not report significant trauma by 12 months changed attachment classifications. This suggests that abused children’s working models could be more malleable than those of the general population. If abused children’s working models are more malleable this could mean teacher relationships could play a role in modifying their working models. For example, if an abused child had a positive relationship with their teacher in first grade, this relationship could provide the child with a positive expectation of future relationships, potentially influencing and adapting their internal working model.
The current study investigated the quality of the student-teacher relationship from the teacher’s perspective. In the future, collecting multi-method, multi-informant information could provide a clearer picture of this relationship—as the two perspectives of the same relationship have been found to differ in the existent literature. For example, Hughes (2013), using two subscales (warmth and conflict) from The Network of Relationships Inventory, found that teacher reports of warmth and conflict in the student-relationship were negatively correlated, but student reports of warmth and conflict were not correlated. This suggests that the child can view the relationship as being equally high in conflict and warmth while the teacher has a more difficult time reporting high warmth when there is high conflict. In addition, teachers and students agreed about the level of conflict in the relationship, but they disagreed about the amount of warmth. Because students may perceive warmth differently than teachers, having the students’ report of the relationship could have impacted the results of this study.

A larger question remains as to what resulted in some children having a relatively positive IWM and higher quality student-teacher relationships. Demographic characteristics explored in this study did not provide an answer. The two clusters did not differ in terms of intelligence, ruling out intellectual functioning as a possible explanation. However, the clusters did differ in terms of gender, with significantly fewer girls exhibiting relatively negative working models. Perhaps girls who have experienced physical abuse are less likely to develop negative IWMs. Past research has shown that girls are more likely than boys to display positive themes such as affection/affiliation in their narratives (Moss et al., 2009).
which may result in girls having a more positive IWM as assessed by narrative stories. More
information is needed regarding MSSB normative scores by gender, which are not available,
to fully interpret the meaning of this gender difference. This gender difference could also be
the result of boys being more likely to have a disorganized attachment status (Carlson, 1989).

There were significantly fewer girls with relatively maladaptive working models than
there were boys with maladaptive working models in this study. In an effort to understand
this gender difference in IWMs, literature on resilience was reviewed with hopes of
understanding why girls may have a greater likelihood of having adaptive working models.
Some of those studies support the notion that girls may be more resilient than boys. For
example, in a large study of 676 adults who had experienced abuse or neglect as children, it
was found that a larger proportion of girls than boys met the criteria for resilience (McGloin
& Widom, 2001), though, not all studies support that finding (Klika & Herrenkohl, 2013).
Future investigations could be designed to examine additional factors that create a positive or
negative IWM such as extra-familial support, child temperament/personality or other
relationships that prepare the child to have positive expectations of relationships. Isolating
what led to some children to have a relatively more adaptive IWM is an important task that
could inform intervention efforts with this population.

In closing, as a whole, physically abused children in this sample were functioning
well in their teacher relationships, but when separated on the basis of their internal working
models, children with relatively maladaptive working models were experiencing a more
conflictual, dependent and negative overall teacher relationship. Despite these differences,
the children in both clusters were equally close to their teachers, which is promising for this at-risk population of students. Based on these results, children with more negative IWMs might benefit from interventions designed to improve their interpersonal relationships, especially with teachers. It is hoped the information gathered from this study can direct researchers to thoroughly investigate within-group differences that may lead to the ability to promote resilience for this population.
Table 1

*Descriptive Statistics and Correlations for Dependent Variables (N=70)*

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
<th>M</th>
<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Closeness</td>
<td>3-99</td>
<td>46.63</td>
<td>27.52</td>
<td>.20</td>
<td>-1.23*</td>
<td>__</td>
<td>-.36**</td>
<td>.03</td>
</tr>
<tr>
<td>2. Conflict</td>
<td>5-99</td>
<td>45.41</td>
<td>29.59</td>
<td>.29</td>
<td>-1.25*</td>
<td>-.36**</td>
<td>__</td>
<td>.59**</td>
</tr>
<tr>
<td>3. Dependency</td>
<td>1-99</td>
<td>53.07</td>
<td>30.11</td>
<td>-.15</td>
<td>-1.23*</td>
<td>.03</td>
<td>.59**</td>
<td>__</td>
</tr>
<tr>
<td>Total</td>
<td>1-99</td>
<td>49.77</td>
<td>30.14</td>
<td>.00</td>
<td>-1.29*</td>
<td>.63**</td>
<td>-.85**</td>
<td>__</td>
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*p < .05; **p < .01 (2-tailed)
Table 2

*Descriptive Statistics, by Cluster*

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<tr>
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<th>Range</th>
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<th>SD</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
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<td>27.10</td>
<td>.12</td>
<td>-1.24*</td>
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<td>34.93</td>
<td>24.41</td>
<td>.75*</td>
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<td>28.76</td>
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<td>-1.01</td>
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<td>Total</td>
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<td>59.05</td>
<td>27.72</td>
<td>-.41</td>
<td>-.90</td>
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<tr>
<td><strong>Negative Cluster (n=26)</strong></td>
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<tr>
<td>Closeness</td>
<td>5-92</td>
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<td>27.79</td>
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<tr>
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<td>29.51</td>
<td>-.65</td>
<td>-.93</td>
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<tr>
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<td>63.58</td>
<td>29.93</td>
<td>-.71</td>
<td>-.88</td>
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<tr>
<td>Total</td>
<td>1-99</td>
<td>34.08</td>
<td>27.89</td>
<td>.84*</td>
<td>-.30</td>
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</tbody>
</table>

*p < .05
Table 3

Percentage of children falling in the clinically significant range

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<thead>
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<th></th>
<th>Positive Cluster (N= 44)</th>
<th>Negative Cluster (N= 26)</th>
<th>(\chi^2)</th>
<th>phi</th>
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<td>Not</td>
<td>Clinically Significant</td>
<td>Not</td>
<td>Clinically Significant</td>
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<tr>
<td>Closeness</td>
<td>72.7%</td>
<td>27.3%</td>
<td>61.5%</td>
<td>38.5%</td>
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<tr>
<td>Conflict</td>
<td>88.6%</td>
<td>11.4%</td>
<td>46.2%</td>
<td>53.8%</td>
</tr>
<tr>
<td>Dependency</td>
<td>72.7%</td>
<td>27.3%</td>
<td>46.2%</td>
<td>53.8%</td>
</tr>
<tr>
<td>Total</td>
<td>85%</td>
<td>15%</td>
<td>66.7%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

*p < .05
REFERENCES


Appendix A

Flow Chart for Narrative Story Stems Coding

Representations

1. Positive Representations of Child

2. Negative Representations of Child
   - Negative Representations
   - False Representations

3. Positive Representations of Parent

4. Negative Representations of Parent
   - Negative Representations
   - Controlling Representations
   - Incongruent Representations
Attachment Themes

5. Moral/Affiliative Themes

- Affection
- Affiliation
- Compliance
- Empathy
- Reparation/guilt

6. Conflictual Themes

- Aggression
- Verbal Conflict
- Escalation of Conflict