

IMPACT OF ABUSE ON EXTERNALIZING SYMPTOMS IN CHILDREN: FINDINGS
FROM A RURAL SCHOOL SAMPLE

By

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To my parents who are my haven, my reality check, and my stability. Thank you for challenging and encouraging me, and most of all for love.

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Child abuse continues to be a pressing concern, as abuse places children at risk for a number of adverse outcomes, including behavioral problems. In this study, data on abuse history and abuse type (physical, sexual, and neglect) were extracted from charts of children and adolescents who were referred for counseling by their schools in order to test the relationship between a history of abuse and externalizing behaviors as rated by teachers, as well as school behavioral referrals. This population consisted of 261 children, ages 3 to 19, from a rural county in North-central Florida. Approximately 39.5% of the sample endorsed experiencing one or more types of abuse; 15.3% of the sample was physically abused, 13.4% were sexually abused, and 26.1% were neglected. The relationship between abuse and externalizing problems (attention problems, aggression, and hyperactivity) was then assessed using the corresponding scales from the teacher version of the Behavior Assessment System for Children and the total school behavioral referrals received in the year following assessment. There were significant sex, minority, and age effects, in that males, minorities, and younger children, were rated as having more externalizing problems. Furthermore, results demonstrated that physically abused children were rated as having more aggression problems. Overall results for attention

problems, hyperactivity, and school behavioral referrals were not significant.

Implications for school functioning and treatment are discussed.

CHAPTER 1 INTRODUCTION

Approximately 3.5 million children were subjects of abuse (i.e., maltreatment) investigations by child protective services in 2007, with over 750,000 children having indicated findings of abuse (US Department of Health and Human Services, 2007). These statistics exclude unreported abuse, thus the overall number of children experiencing abuse is probably greater. The high rates of victims pose a significant problem as child abuse impacts a child's development. Previous research has linked a childhood history of abuse to behavioral sequelae, including increased occurrence of psychological disorders later in life (Becker-Blease & Freyd, 2008; Fergusson, Boden, Horwood, 2008). In addition, abuse type (i.e., physical, sexual, neglect) may have an impact on expressed behaviors with overlapping and varying consequences between types. However, all three subtypes (physical, sexual, and neglect) have been linked with increased school dropout (Crozier & Barth, 2005), anxiety disorders (Herrenkohl & Herrenkohl, 2007), conduct/antisocial personality disorder (Ford et al., 2000; Lansford et al., 2007), attention deficit/hyperactivity disorder (Becker-Blease & Freyd, 2008; Ford et al., 2000), major depression (Herrenkohl & Herrenkohl, 2007), posttraumatic stress disorder (Herrenkohl & Herrenkohl, 2007), substance dependence (Fergusson, Horwood, & Lynskey, 1996), and suicidal ideation (Fergusson et al., 2008). Abused children will more often meet criteria for these disorders than non-abused children.

Abuse can lead to increased mental health problems by impacting multiple domains, such as social functioning, emotional regulation, and cognition. Difficulties in these domains can increase the likelihood of externalizing sequelae, which impact a child's educational experience. Externalizing behaviors often interfere with functioning in

school and other environments, and children are frequently referred for psychological services due to acting out in the classroom. Indeed, some of the most common reasons for a child being referred for psychological services within school are for behaviors such as hyperactivity, aggression, and attention problems. In addition, children often receive behavioral referrals due to these acting out behaviors which can result in detentions and/or suspensions. Teachers generally tend to have a unique view of the child's behaviors, as they spend a good portion of their day in school (Thompson & Wyatt, 1999). Understanding how abuse sequelae manifest in the classroom is essential in assisting children who have been and are being abused. This knowledge can assist the clinician in formulating a treatment plan and targeting behaviors to improve functioning, especially in the classroom.

Abuse and Demographic Characteristics

Children ages 0 to 3 are most likely to be victims of abuse, and as children age, abuse rates decrease (Sabol, Coulton, & Polousky, 2004; Scarborough & McCrae, 2008). This difference could be attributed to developmental stages where younger children are more vulnerable and dependent upon others (i.e., parents or caregivers), thus making them more susceptible to abuse as they are less equipped to speak up and advocate for their own rights. Abuse rates tend to decrease as children grow older. Nationally, of the children who were victims of abuse the most common type of abuse was neglect (59%), followed by multiple abuse types (13.1%), physical abuse (10.8%), and then sexual abuse (7.6%) (US Department of Health and Human Services, 2007).

Despite national abuse data indicating a lack of sex disparity in the United States population of abused children (i.e., males and females were victimized relatively equally), these rates were not broken down by abuse types (US Department of Health

and Human Services, 2007). When sex differences in abuse types have been examined, females were more likely to be victims of sexual abuse and males were more likely to be victims of physical abuse (Bolger & Patterson, 2001; Tyler, Johnson, & Brownridge, 2008; US Department of Health and Human Services, 2007). However, some research supports physical abuse rates as being equal for both sexes, as well as neglect (Tyler et al., 2008).

In addition to sex differences in abuse, research has shown that abuse rates differ across cultures, races, and ethnicities. According to national abuse data (US Department of Health and Human Services, 2007) African Americans, American Indian or Alaska Natives, and children of multiple races are more often victims of abuse; Hispanic and Caucasian children have lower rates, but Asian children have the lowest occurrence of abuse. The above data take into account all 50 states, the District of Columbia, and the commonwealth of Puerto Rico (US Department of Health and Human Services, 2007). Researchers have also found high rates of abuse for African American children. Sabol, et al. (2004) found that approximately half of the African American children in their sample were likely to be victims of abuse by the age of 10.

Prevalence rates in children have also been studied in different geographic (e.g., urban, rural) samples, resulting in a range of rates. In one urban, low income sample children ages 6 and younger were found to have an abuse rate of 50.9% (Ayoub et al., 2006). In urban parts of the United States, rates of child abuse range from 39.7% to 71% (Cullerton-Sen et al., 2008; De Sanctis et al., 2008; Hatcher, Maschi, Morgen, & Toldson, 2009; Sabol et al., 2004; Salzinger, Feldman, Ng-Mak, Mojica, & Stockhammer, 2001; Tyler et al., 2008). In suburban areas the rates are not as high,

with one study finding a 35.7% abuse rate (Sabol et al., 2004). These rates demonstrate that children who reside in urban communities are more likely to be victims of abuse. Literature is lacking with regards to abuse rates for rural populations; either studies are done in urban areas, a combination of urban/suburban areas, or statewide where the rural portions of the state are combined with the urban and suburban populations (Bolger & Patterson, 2001; Perlman; Kalish, & Pollak, 2008).

As the current study was conducted in the state of Florida, it is important to understand the rates of abuse for this particular state. With an overall child population estimated at 4 million, over 53,000 children were identified as victims of abuse in 2007. Of those Florida children who were abused, the ethnic breakdown was 51.7% White, 30.3% African American, 14.8% Hispanic, and the rest were other ethnicities (US Department of Health and Human Services, 2007). These rates differ from the national rates, as Caucasians have higher abuse rates than African Americans in Florida, but African Americans have the highest abuse rate nationally. When the overall Florida abuse rates were broken down by type for children, 17% were victims of multiple abuse types, 36% were victims of neglect, 6.5% were victims of physical abuse, 3.4% were victims of sexual abuse, and 36.1% were victims of other types of abuse (US Department of Health and Human Services, 2007).

Impact of Child Abuse

As noted earlier, there is considerable evidence regarding the immediate and long term consequences of abuse, as it can interfere with a child's development and affect their social functioning, emotional regulation, behavior, and cognition. The potential impacts of abuse on areas of child functioning that may be related to child externalizing behavior problems are discussed in further detail below, as the current study aimed to

focus primarily on externalizing problems. Additionally, within these areas potential impacts on school functioning are highlighted, as the current study examined externalizing problems from the perspective of the child's classroom teacher.

Social Functioning

Parental/caregiver relationships are the platform from which children are able to navigate the social world around them and develop relationships. Through this relationship the child learns how society functions and ways in which to manage it. If the child's initial relationship is physically/sexually violent and/or neglectful, then the child's social view and future social interactions may be negatively impacted by the experience, thus resulting in an overarching message received by the abused child that intimate relationships can be cruel and hurtful (Salzinger et al., 2001). This resulting message can impede the development of future relationships, such as peer relationships, as abuse potentially compromises the child's ability appropriately navigate social relationships (Anthonysamy & Zimmer-Gembeck, 2007; Salzinger et al., 2001). Socially, the experience of early victimization may lead a child to perceive threats from peers, misread social cues, and respond to peers with more anger and aggression (Cullerton-Sen, et al. 2008). This misperception of a social event being negative even, though it was not intended to be, may increase the likelihood of an aggressive response, which in turn may lead to the child being socially rejected, thus resulting in low social competence and a negative attribution bias (Ayoub et al., 2006). Therefore, children who experience abuse from those who are their caregivers appear less liked by peers, less accepted, and suffer from increased rejection compared to children with no history of abuse (Anthonysamy & Zimmer-Gembeck, 2007).

With regard to physically abused children, they have been found to be more inclined to view a behavior as negative, more so than the other abuse types, and are more likely to engage in externalizing behaviors and resolve conflicts with aggressive acts, resulting in poorer social support (Shields & Cicchetti, 2001). As compared to children experiencing other types of abuse, physically abused children appear to be at greater risk for lower social abilities due to the acts of aggression and the disruption they cause to their environments when compared to non-abused children (Teisl & Cicchetti, 2008). Anthonysamy and Zimmer-Gembeck (2007) demonstrated that boys were more likely to be rejected than girls and were more aggressive. Not only do physically abused children experience more peer rejection, but peer evaluations of these children are also more negative, resulting in the abused child being less liked, and more rejected, than non-abused children (Anthonysamy & Zimmer-Gembeck, 2007; Salzinger et al., 2001). Peer rejection significantly increases school difficulties due to its association with the development of externalizing behavior problems (Coie, Terry, Lenox, Lochman, & Hyman, 1995). Overall, a history of abuse is associated with children initiating negative interactions and maintaining these interactions with their peers, which can affect classroom functioning, as research supports that peer status and maltreatment are correlated with classroom behaviors (Anthonysamy & Zimmer-Gembeck, 2007).

Emotional Regulation

Abusive parent-child interactions not only negatively impact a child's social functioning but can also lead to child emotional dysregulation (Teisl & Cicchetti, 2008). Some studies identified abused infants expressing anger at 3 to 4 months of age, as compared to non-abused infants who begin to express anger at 7 to 9 months of age

(Gaensbauer & Hiatt, 1984; Sroufe, 1997). Moreover, the abused toddler appeared to be hypervigilant to novel situations due to their negative experiences thus far in life, and tended to ignore the occurrence of positive events (Ayoub et al., 2006).

Research has shown that parents who utilize inconsistent responses to similar situations increase a child's confusion about the appropriateness of responses. Studies have suggested that as children age, having predictable and regular emotional experiences is an important part of the developmental process. Thus, inconsistency can interfere with the child's ability to learn about emotions (Perlman et al., 2008). Abused children more often misunderstand or misinterpret emotions and emotional expressions, resulting in deficits in emotional self-regulation due to lack of appropriate parental modeling of emotional expression (Teisl & Cicchetti, 2008). It has been argued that physical abuse specifically has been associated with disruption in a child's ability to engage in emotional regulation (Dodge, Pettit, Bates, & Valente, 1995; Teisl & Cicchetti, 2008). Difficulties in emotional regulation can in turn be associated with increased child behavioral problems (Teisl & Cicchetti, 2008).

Attention Problems and Cognitive and Academic Functioning

There are many environmental factors that can impact cognitive development that co-occur with abuse, such as poverty. However, there is evidence supporting the negative effect childhood abuse has on cognitive development, which in turn influences classroom behavior. Some research has found that sexual abuse specifically is associated with lower cognitive achievement, especially when externalizing behaviors are involved. External factors that increase the chances of lower cognitive achievement were as follows: abused children were found to be at higher risk of being retained in school, having increased absences, and being more likely to utilize exceptional student

education programs (Friedrick, Einbender, & Leucke, 1994; Leiter & Johnson, 1997). With regard to internal factors, one study found that neglected children had significantly lower intellectual scores when compared to all other abuse types (Buckle, Lancaster, Powell, & Higgins, 2005). Overall, it has been established that an abuse history is associated with increased learning disability deficits; poor school achievement, and delayed or lower cognitive abilities in children (Ayoub et al., 2006; Nolin & Ethier, 2007). In addition, developmental difficulties in language and verbal and nonverbal difficulties which result in poorer performance on intellectual testing have been found (Urquiza, Wirtz, Peterson & Singer, 1994).

The presence of attention problems could exacerbate poor cognitive functioning such that children who are not attending to school tasks may have even more difficulty learning the material. A child could have attention problems for many reasons, and one of those could be due to re-experiencing trauma (Weinstein, Staffelbach, & Biaggio, 2000). A hypervigilant child who attends to threatening cues within their environment may be less likely to focus on a classroom activity or school work and may have more difficulty concentrating (Weinstein et al., 2000). Also, the domains of executive functioning and attention can be affected by PTSD and PTSD symptoms, as abused children with PTSD symptoms have been found to demonstrate deficits in these areas (Beers & Bellis, 2002). In addition, attention problems could stem from an ADHD diagnosis. Research purports that abused girls are more vulnerable to demonstrating attention problems as opposed to impulsivity and hyperactivity and are more likely to be diagnosed with inattentive-type ADHD (Becker-Blease & Freyd, 2008; Loeber et al., 2009). Furthermore, abused children have been found to score higher on inattentive

measures than non-abused children, and were more likely to have ADHD diagnoses as well (Becker-Blease & Freyd, 2008).

Externalizing Symptoms

Literature supports that children who have been abused are more likely to develop behavioral problems during adolescence (Lansford et al., 2002). While abuse also increases the risk for internalizing disorders (i.e., depression, anxiety) (Hankin, 2006; Bolger & Patterson, 2001), externalizing sequelae often lead to more detrimental outcomes, such as juvenile justice involvement and later involvement in the criminal justice system.

There is some evidence for ethnic differences in the impact of abuse on externalizing behaviors. African Americans with a history of abuse were more likely to have involvement with juvenile justice compared to those with no abuse history and other ethnic groups (Lansford, et al., 2007). However, conflicting evidence exists regarding whether ethnicity is actually related to children's externalizing behaviors or not. While some research supports the claim that ethnicity is associated with externalizing behaviors among abused children, there is also support for the argument that ethnicity is not related to behavior among abused children (Hatcher et al., 2009).

Research has also looked at sex differences in behavioral problems and has found that males tend to engage in acts of delinquency more often than females (Maschi, Morgen, Bradley, & Hatcher, 2008). Research has supported a direct relationship between abuse and externalizing symptoms for boys (Maschi et al., 2008). In contrast, girls engage in more relational aggression. However, although relational aggression differs from physical aggression, relational aggression is also associated with externalizing behaviors (Keenan, Coyne, & Lahey, 2008). In addition, while boys may

initially demonstrate acting out behaviors, girls may eventually engage in externalizing behaviors as well if a trauma continues to be unresolved (Briscoe-Smith & Hinshaw, 2006; Hinshaw, 2002; Maschi et al., 2008).

Teacher Ratings

This study examined teacher ratings of externalizing behaviors, as children spend a large portion of their day in school. Although teachers only see children during school hours, teacher reports of externalizing behaviors have been shown to be stable across time, and are linked to hyperactive and aggressive behaviors (Ostrov & Godleski, 2009). Moreover, children who were rated as hyperactive in kindergarten were more likely to be rated as aggressive in early to mid-adolescence (Ostrov & Godleski, 2009). Teacher observations are valuable tools to utilize when clinicians are determining problem areas and assessing for psychological problems. Where parents may be biased regarding knowledge of their child's history, teachers may not always be aware if a child has a history of abuse or not. Also, in the classroom children are required to engage in certain activities throughout the day, as the day is structured. The teacher has a unique insight into the child's ability to engage in structured and unstructured time and their social, emotional, and cognitive functioning. As many psychological services are provided in the school environment, it is important to identify how the child is functioning in this realm. Thus, the teacher's perspective of the child's behavior was the focus of the current study.

Externalizing behaviors as reported by teachers were the focus of the current study due to the level of disruption they cause in the classroom environment. Furthermore, in addition to classroom disruption, they are most often the cause of school behavior referrals, which were also examined for the current study. Children

spend a large portion of their day in the educational environment. If a child engages in externalizing acts, they are likely to impact school functioning. Externalizing behaviors are the main reason children are referred for treatment by teachers and guidance counselors, and why children receive behavioral referrals, as these behaviors are disruptive to the classroom, peers, and to school personnel (i.e., teachers). Students being referred for conduct problems in school often have a history of abuse (Thompson & Wyatt, 1999). Oftentimes the externalizing behaviors exhibited in the classroom are aggression, hyperactivity, and attention problems. These behaviors not only affect the classroom and all within, they also disrupt the child's academic experience. Children can engage in the above behaviors for a multitude of reasons; however, if a child has been the victim of abuse, these externalizing behaviors could be associated with that experience.

Study Aims

Due to the lack of research focusing on abuse in rural populations and its impact on current classroom functioning, this study examined if a history of abuse (physical, sexual, or neglect) predicted teacher-rated behavior problems in the areas of hyperactivity, attention problems, and aggression in a rural sample of children referred for psychological evaluations by their schools. It was hypothesized that a history of abuse would significantly predict teacher ratings of attention problems, aggression, and hyperactivity, such that children with a history of abuse would have higher ratings of these problems. In addition, the second aim of this study was to determine if a history of abuse would predict the number of behavioral referrals a child received in school. It was hypothesized that a history of abuse would significantly predict the number of behavioral

referrals at school, such that children with a history of abuse would receive more referrals.

CHAPTER 2 METHODS

Participants

Participants were comprised of 261 children (62.5% males and 37.5% females) from a rural county in North-central Florida who ranged in age from 3 to 18 years ($M = 11.38$, $SD = 3.24$). The children were all referred for counseling services and had a completed teacher version of the Behavior Assessment System for Children (BASC). Eighty-one percent were Caucasian, 15% were African American, and 4% were other ethnicities, which includes Hispanic, Native American, Asian, and Bi-racial. When the caregivers were questioned regarding socioeconomic status, 56.4% endorsed an income of 30,000 and under. Forty-four percent of the caregivers were married, 28.4% were divorced, 10.3% were single, and 7.7% endorsed other. Complete sample demographics are presented in Table 2-1.

Measures

Demographics

Demographic information was obtained via a demographic form that was completed by all families during the intake process. Data extracted for this study included child age, child sex, child ethnicity, family income, and family structure (e.g., married, divorced). For the ethnicity variable, Caucasians were coded as non-minority, and all other minority groups were coded as minorities.

Abuse Type

A history of childhood abuse was measured as part of the intake assessment interview with families. Both caregivers and children were asked whether the child had experienced abuse. For the current study, a history of abuse was coded as present if

there had been involvement by the Department of Children and Families (DCF) (e.g., an abuse report had been made to DCF, DCF had conducted an investigation) or child removal from the home environment. The three types of abuse coded for this study were physical abuse, sexual abuse, and neglect. Due to the difficulty in classifying emotional abuse, this type was not coded for the current study.

Child Externalizing Behavior Symptoms

As part of the intake process teachers were provided with one or two measures to complete for each referred child. It was not possible to determine whether the teachers had knowledge of the abuse history when completing the measures. The measure utilized in this study was the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992), and the child's classroom teacher completed the BASC-Teacher version. The BASC-Teacher version is comprised of items rated on a 4-point scale from *never* to *almost always*, and has three forms for different age groups (ages 2 ½ -5, 6-11, and 12-18). This study focused on three of the subscales: Hyperactivity, Attention Problems, and Aggression. These three subscales have Cronbach's alphas ranging from .84-.94 and test-retest reliabilities ranging from .83-.92. Example items for the Hyperactivity scale include "cannot wait to take turn and climbs on things"; items for the Aggression scale include "threatens to hurt others, hits other children"; and items from the Attention Problems scale include "easily distracted and listens to directions". The BASC generates T-scores; T-scores between 60 and 69 are in the At-Risk range, and any score of 70 or above is considered in the Clinically Significant range. Means and standard deviations for the current sample are presented in Table 3-4 and are presented for the overall sample, as well as for only those children experiencing different types of abuse.

Behavioral Referrals at School

In order to measure the child's school adjustment post intake date, school behavioral referrals were gathered from the school district computerized record system. In this school district there are 61 possible referral reasons; the most common referrals were for bus misconduct, insubordination, and hitting. A behavioral referral is a form the teacher writes on, and/or checks a box describing the child's reason for being sent to the office. The referral is placed in the child's permanent school record, which allows referrals to be tracked over time. The total number of school referrals (across all referral codes) for the 12 month period following the intake assessment was used in analyses for the current study.

Procedure

The data used in this study were previously collected as part of a larger study, Project Columbia Acting Together for Children (CATCh). Approval for all study procedures was granted by the Institutional Review Board-01. The children and their families were referred to Project CATCh for an intake assessment by their school guidance counselors or teachers due to concerns about emotional, behavioral, or academic functioning in the school or home environment. Referrals were processed by Project CATCh school district staff, who scheduled intake appointments with the child's family. Intakes were conducted by post-doctoral clinicians, interns, and graduate students from the University of Florida under the supervision of faculty from the Department of Clinical and Health Psychology. The assigned intake clinician obtained family consent and child assent to proceed with the intake assessment, and additionally gathered emotional and behavioral information via a clinical interview and parent and child self-report measures, which included the BASC or Achenbach scales as well as

other measures relevant to the referral concerns. Caregivers were also provided with IRB-01 approved informed consent forms in order for the data collected to be used for research purposes. From this initial data set, information regarding abuse history and type, behavioral referrals at school, and Teacher BASC T-scores were extracted from the files of the children whose parents gave consent for the data to be used in research.

Over the course of Project CATCh, 495 students were referred for intakes. Of those 495, 359 (72.5%) students completed intakes. Reasons for not completing intakes included the family being unreachable by Project CATCh staff, families not rescheduling missed intake appointments, and families not being interested in receiving an intake for their child. Of the 359 students who completed intakes, 324 (90.3%) had signed informed consent forms for research. Out of the 324 cases with research consent, the current study focused on 261 of these students who had BASC and/or school behavioral referral data available for analyses.

Table 2-1. Sample demographic characteristics

Variable	Percent of sample (N=261)	Percent of abused sample (N=103)
Sex		
Males	62.5	48.5
Females	37.5	51.5
Minority		
Non-minority(Caucasian)	81.2	86.5
Minority	18.7	13.6
Family Income Per Year		
<6,000	7.9	8.1
6,000-10,000	11.5	12.8
11,000-20,000	23.3	23.3
21,000-30,000	22.0	22.1
31,000-40,000	11.9	10.5
41,000-50,000	10.6	14.0
51,000-60,000	4.8	3.5
>60,000	7.9	5.8
Marital Status		
Married	44.1	41.1
Divorced/Separated	28.4	41.1
Single	10.3	7.4
Other	7.7	10.5
Who Child Lives With		
Mother	48.0	41.7
Father	14.7	20.4
Both bio parents	15.1	5.8
Relative	13.1	19.4
Non-family member	6.6	12.6

CHAPTER 3 RESULTS

Descriptive Analyses

Descriptive analyses were conducted on abuse types to determine the prevalence of abuse in the sample. Overall, 39.5% of the 261 children had a history of some type of abuse. Out of the 261 children, 15.3% were victims of physical abuse, 13.4% were victims of sexual abuse, and 26.1% had a history of neglect. Examining only the subset of the sample with a history of childhood abuse, 36.9% were physically abused, 33.0% experienced sexual abuse, and 63.1% were the victims of neglect. These numbers totaled more than 100% as some children experienced more than one type of abuse. Overall, neglect was the most common type of abuse in this sample. See Table 3-1 for the breakdown of percentages of single and multiple abuse types for the overall sample.

Chi-square tests were conducted to examine sex and minority differences in abuse types. All Chi-square analyses are presented in Table 3-2 and 3-3. These analyses revealed significant sex differences for the sexual abuse type ($\chi^2 = 16.05, p < .001$); more females were sexually abused than males. For the chi square analyses examining minority differences, significant differences were found for the neglect abuse type ($\chi^2 = 4.42, p < .05$); Caucasians were more likely to have a history of neglect than minorities.

Presented in Table 3-4 are the mean Teacher BASC T-scores for the overall sample, as well as mean T-scores for the abuse subsamples. While the mean T-scores did not fall in the Clinical range (70 or higher), the ranges indicate that some individual scores did exceed the clinically significant range. Only one mean exceeded the cutoff for the At-Risk range (60; Aggression scale for children with a history of physical abuse). For school behavioral referrals, the overall sample mean was 3.77 ($SD = 5.73$).

Main Regression Analyses

Aim One

For the first aim three hierarchical regression analyses were carried out to test whether a history of abuse was predictive of teacher ratings on each of the three BASC scales (Hyperactivity, Attention Problems, and Aggression). Block one of each regression consisted of the demographic variables: age, sex, and minority status. Income was considered as a possible demographic predictor; however, it was not included as it was not significantly related to the outcome variables. The abuse type variables, sexual, neglect, and physical, were entered in block two. All regression analyses statistics for Aim 1 are presented in Tables 3-5 (Hyperactivity scale), 3-6 (Attention Problems scale), and 3-7 (Aggression scale).

Table 3-5 presents the regression statistics for the Hyperactivity scale. For this scale, age, sex, and minority status were significant predictors for block one. Younger children were rated by their teachers as being more hyperactive than older children ($p < .001$), males were rated as being more hyperactive than females ($p < .001$), and minorities were rated as having more hyperactive behaviors than Caucasians ($p < .05$). The addition of abuse type predictor variables in block two was not significant ($p = .10$). Thus, the abuse type variables did not explain additional variance. Despite this lack of significance for the overall model, it was noted that neglect was negatively related to hyperactivity; children who suffered from neglect appeared less likely to be rated as hyperactive by their teachers.

Presented in Table 3-6 are the regression statistics for the Attention Problems scale. Again, younger children ($p < .001$) and males ($p < .05$) were rated as having more attention problems. Minority status was not significant ($p = .08$). The addition of

the abuse type variables did not add significance to the overall model, as block two was not significant ($p = .06$). Although the overall model was not significant, it should be noted that neglect was negatively related to attention problems, such that those who were victims of neglect were rated as having fewer attention problems.

Table 3-7 presents the regression statistics for the Aggression scale. Again, age, sex, and minority status were significant predictors for block one such that younger children ($p < .01$), males ($p < .05$), and minorities ($p < .01$) were more likely to be rated as aggressive. Block two of the model was also significant ($p < .05$), resulting in 14% of the variance being explained. Beta-weights indicated that the only abuse type variable significantly associated with aggression was physical abuse ($p < .05$), implying that physically abused children were rated as more aggressive. Notably, block two resulted in a minimal change in the R^2 value (.04); however, this change made enough of a difference to cause the model to be significant.

Aim Two

For the second aim a hierarchical regression was conducted to determine if an abuse history was predictive of the number of behavioral referrals a child received for the one year period post intake session; results are presented in Table 3-8. Block one consisted of the demographic variables (sex, age, and minority status) and was significant for age ($p < .05$) and sex ($p < .05$), but not minority status ($p = .29$). Older children and males received more behavioral referrals. With the addition of the abuse type variables in block two significance was not obtained ($p = .09$). Although the overall model was not significant, physical abuse was positively related to behavioral referrals, such that those with a history of physical abuse were more likely to receive behavioral referrals in school.

Table 3-1. Percent of sample experiencing different abuse types

Variable	Abuse % N=261
Any Abuse	39.5
Physical Abuse only	15.3
Sexual Abuse only	13.4
Neglect only	26.1
Physical and sexual	2.7
Physical and neglect	5.0
Sexual and neglect	3.1
All three abuse types	1.5

Table 3-2. Chi-square analyses examining differences in abuse type by sex

Variables	Boys %	Girls %	χ^2
Physical Abuse	13.9	18.6	.98
Sexual Abuse	7.0	24.7	16.05***
Neglect	23.4	32.0	2.24

*** $p < .001$

Table 3-3. Chi-square analyses examining differences in abuse type by minority status

Variables	Caucasian%	Minority %	χ^2
Physical Abuse	15.5	16.7	.04
Sexual Abuse	15.5	6.3	2.79
Neglect	29.5	14.6	4.42*

* $p < .05$

Table 3-4. Means and standard deviations of BASC T-scores for the total sample compared to abused children by abuse type

Variable	<i>M</i>	<i>SD</i>	Range	
Hyperactivity Scale				
Total sample		57.01	12.95	38-98
Physical abuse	57.29	11.88		38-79
Sexual abuse	54.18	11.31		38-77
Neglect	53.31	11.77		38-80
Aggression Scale				
Total sample		58.41	14.07	38-98
Physical abuse	61.68	12.30		41-79
Sexual abuse	55.32	12.53		41-92
Neglect	55.67	13.06		38-90
Attention Problems Scale				
Total sample		59.91	10.25	36-83
Physical abuse	59.97	8.08		46-79
Sexual abuse	56.93	9.40		41-75
Neglect	57.06	9.65		36-79

Table 3-5. Summary of regression statistics for aim one – Hyperactivity scale

Variable	<i>B</i>	<i>SE</i>	<i>Beta</i>	<i>R</i> ²	<i>R</i> ² change
Block 1					
				.171***	.171***
Age	-1.01	.27	-.26***		
Sex	-6.92	1.80	-.26***		
Minority	5.11	2.22	.16*		
				.20	.03
Block 2					
Age	-1.13	.27	-.29***		
Sex	-6.40	1.87	-.24**		
Minority	3.95	2.27	.12		
Physical Abuse	4.05	2.42	.12		
Sexual Abuse	-.79	2.53	-.02		
Neglect	-4.26	2.00	-.15*		

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3-6. Summary of regression statistics for aim one – Attention Problems scale

Variable	B	SE	Beta	R ²	R ² change
Block 1				.10***	.10***
Age	-.74	.22	-.24**		
Sex	-3.10	1.48	-.15*		
Minority	3.25	1.83	.13		
				.14	.04
Block 2					
Age	-.83	.22	-.27***		
Sex	-2.22	1.52	-.11		
Minority	2.00	1.86	.08		
Physical Abuse	2.84	1.96	.11		
Sexual Abuse	-2.74	2.04	-.10		
Neglect	-3.74	1.64	-.16		

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3-7. Summary of regression statistics for aim one – Aggression scale

Variable	B	SE	Beta	R ²	R ² change
Block 1				.10***	.10***
Age	-.834	.30	-.20**		
Sex	-4.05	2.05	-.14		
Minority	6.72	2.55	.19**		
				.14*	.04*
Block 2					
Age	-1.01	.30	-.24**		
Sex	-3.50	2.11	-.12		
Minority	5.42	2.60	.15*		
Physical Abuse	7.13	2.73	.19*		
Sexual Abuse	-2.51	2.85	-.06		
Neglect	-3.32	2.26	-.11		

* $p < .05$

** $p < .01$

*** $p < .001$

Table 3-8. Summary of regression statistics for aim two – School behavior referrals

Variable	<i>B</i>	SE	Beta	<i>R</i> ²	<i>R</i> ² change
Block 1				.06*	.06*
Age	.32	.13	.18*		
Sex	-2.11	.87	-.18*		
Minority	1.17	1.09	.08		
				.10	.04
Block 2					
Age	.28	.13	.16*		
Sex	-2.03	.90	-.17*		
Minority	.83	1.11	.06		
Physical Abuse	2.89	1.26	.18*		
Sexual Abuse	.53	1.36	.03		
Neglect	-.79	.94	-.06		

* $p < .05$

CHAPTER 4 DISCUSSION

Overall, the results of the current study demonstrated that abuse is prevalent in this rural sample, as 39.5% of children had a history of abuse. This rate is comparable to urban and suburban rates described within the literature. Consistent with the national and Florida abuse statistics from the US Department of Health and Human Services (2007), neglect (26.1%) was the most frequent abuse type within this sample, with physical abuse (15.3%) occurring more often than sexual abuse (13.4%). Where this study differed was in the rates of multiple abuse type experiences; in this sample physical abuse (15.3%) was slightly more common than experiencing multiple types of abuse (12.3%), whereas national abuse statistics show that multiple abuse types had a higher occurrence rate than physical abuse (US Department of Health and Human Services, 2007). Differences between the current sample and national and state statistics are likely due to the fact that the current sample had been referred for clinical services, as opposed to being an overall population sample.

Chi-square analyses revealed significant differences between males and females for a history of sexual abuse. The identification of females as being more likely to have a history of sexual abuse was similar to other findings within the literature (Tyler et al., 2008). Caucasians had a higher abuse occurrence than minority groups in the current sample. While this is inconsistent with national statistics it was consistent with the ethnic abuse breakdown for Florida, which is meaningful as the current sample was from a Florida county. Minority differences were also found for neglect, where Caucasians were more likely to be victims of neglect than minorities in this rural sample. This disparity is not reflected in urban areas where African Americans appear to have higher

prevalence rates of abuse in general than Caucasians (Sabol et al., 2004). This could be due to the unique characteristics of the current sample.

Examining descriptive statistics for the Teacher BASC scales, no mean T-scores exceeded the Clinical range cutoff of 70, and only one mean exceeded the cutoff for the At-Risk range (60; Aggression scale for children with a history of physical abuse). Despite the fact that the children in this sample were being referred for behavioral problems in school, on average the majority of children were not rated as demonstrating clinically significant behavior problems by their teachers. Notably, the scores did range from 36 to 98, and some children were rated in the clinically significant range for all 3 BASC scales.

The first aim of this study was to examine whether children with an abuse history were rated as more severe by teachers on the BASC Hyperactivity, Aggression, and Attention Problems scales. Furthermore, the second aim of the study examined if children with a prior abuse history were more likely to receive school behavioral referrals than those children with no abuse history. It was hypothesized that children with a previous abuse history would be more likely to be rated as having hyperactive, aggressive, and attention problems than children with no prior abuse history. Moreover, it was hypothesized that children who were abused would be more likely to receive school behavioral referrals than those children who were not abused.

The results of this study only partially supported the hypothesis that abuse would be related to higher teacher ratings on the BASC Hyperactivity, Aggression, and Attention Problems scales. Specifically, for the Aggression scale the hypothesis was supported, as the abuse variables were related to higher ratings of aggression. In

particular, physical abuse appeared to be the main abuse variable that was predictive of higher teacher ratings on the Aggression scale. Research supports such a link between child abuse and externalizing behaviors (Maschi et al., 2008), and there is substantial evidence supporting associations between physical abuse and increased child aggression, similar to the present findings (Cullerton-Sen et al., 2008; Teisl & Cicchetti, 2008). In contrast to the Aggression scale, for the Hyperactivity and Attention Problems scales the abuse variables were not significant predictors. It seemed that the demographic variables were the strongest predictors of hyperactivity and attention problems, as younger children and males were more likely to be rated as hyperactive and having attention problems, while minorities were also more likely to be rated as hyperactive. One possible reason for the lack of significant findings for Hyperactivity and Attention Problems is that the current sample consisted of children being referred for psychological services. Thus, all the children in this sample had some kind of behavioral or emotional difficulties, regardless of whether or not they had a history of abuse. Because of this, differences in behavior between children with and without a history of abuse may have been small and thus less likely to be significant.

An interesting result occurred in that age was a significant predictor in the regression analyses when the BASC norms already control for age. When the BASC was standardized, it was found that the age groups with the largest differences were the younger children, thus the BASC subdivided the age ranges on scales where there was a significant difference between the age groups (Reynolds & Kamphaus, 1992). These age differences resulted in the BASC creating four separate age groups for scoring: 6-7 year olds, 8-11 year olds, 12-14 year olds, and 15-18 year olds. Each child who took the

BASC was compared, not to other children their age, but to the overall age group in which they fit. This could help explain why age continued to contribute significant variance in the current results, as age was entered as a continuous variable in the regression analyses.

For aim two examining school behavioral referrals, the hypothesis was not supported by the results of the study, as the abuse variables did not significantly predict the number of behavioral referrals received. However, the beta weight for physical abuse was significant, such that receiving more behavioral referrals was associated with a history of physical abuse. The significant demographic variables showed that older children were more likely to receive behavior referrals, and males were more likely to receive behavior referrals than females.

Implications

By identifying and understanding abuse and its long term consequences, clinicians can assist in diminishing the negative outcomes, as abuse impedes a child's functioning across domains and can be associated with increased behavioral expression of externalizing symptoms. The current study found that an abuse history was associated with increased aggressive behaviors, with physical abuse in particular being significantly related to increased aggression. This difference was found despite the fact that the current sample was comprised of children who were all being referred for psychological services due to behavioral and emotional concerns. Engaging in aggression in the school setting may lead to poorer academic functioning as externalizing behaviors put stress on the teacher, classroom, the learning experience, and the student engaging in these acts. Teachers are in a unique position to observe these symptoms in the classroom, as children engage in social interactions with peers and teachers, utilize

emotional regulation, and carry out cognitive tasks. Thus, they can provide useful information to clinicians.

With regards to treatment, treating the child with an abuse history who is engaging in acting out behaviors may require a different treatment approach than the child with no abuse history, as the history of abuse needs to be explored in relation to the development of aggression and other behavioral concerns. Knowing that childhood abuse is associated with more aggressive behaviors should prompt clinicians to consider targeting prosocial behaviors to promote positive functioning, which may in turn improve overall school functioning and providing the child with the tools to implement self-regulation of their emotions (Anthonyamy & Zimmer-Gembeck, 2007).

The current study focused on a rural sample, as there appears to be a dearth of research looking at abuse in rural populations. Findings suggest that rates of abuse in this rural sample were similar to national rates, highlighting the importance of examining child abuse and its outcomes in both rural and urban populations. The finding of an association between physical abuse and aggressive behaviors in this rural sample is similar to findings from studies conducted with other samples (Dodge, Price, Bachorowski, & Newman, 1990; Feldman et al., 1995).

Limitations

There are several limitations that should be taken into account when interpreting these findings. First, ethnicities were grouped together such that all ethnicities other than Caucasians were classified as minorities. Notably, this classification does not imply that these ethnicities are considered equal, as they are diverse groups; however, ethnicity was dichotomized in this way due to the low rates of these diverse groups in the study sample. An associated limitation is that minority status and socioeconomic

status may be confounded, such that any ethnic differences found could be due to economic differences and not ethnic differences. However, in the current study income was not related to the outcome variables. In terms of defining abuse, dichotomous abuse variables were used, which did not take into account abuse severity (e.g., if the child was abused one time, two times, or experienced chronic abuse). Severity of abuse is important to measure, as severity appears to be related to the preponderance of negative outcomes and is important for treatment considerations. Unfortunately, information regarding severity was not reliably present in the current data set. Another limitation is that some abuse may not have been reported during the clinical interview, thus the true prevalence may be higher than what is reflected in this study. Notably, emotional abuse was excluded from this study due to the difficulty of quantifying its presence/absence and lack of specific questions regarding this type of abuse during the intake process. Also, this study is retrospective in the sense that the abuse occurred prior to the child's intake assessment. Thus, recall of abuse history may not always have been accurate. Additionally, it is not possible to know definitively whether there was a causal relationship between abuse and externalizing problems.

Another limitation is that the teacher's knowledge of the child's abuse history was not measured. This awareness may have impacted how they rated the child's behaviors. For example, teacher beliefs regarding the seriousness of different types of abuse could have influenced teacher ratings of behavior. In previous research, teachers were found to minimize the effects of neglect and rate sexual abuse as the most severe form of abuse, perceiving sexual abuse to have the most severe consequences (Reyome & Gaeddert, 1998). Also, the children in this study were all referred for

psychological services; thus, the findings may not necessarily be generalizable to other rural populations in Florida or other parts of the country. Finally, there were several limitations in regards to the use of the BASC in this study. For middle and high school students that had multiple teachers, the BASC was completed by just one teacher. As such, results of the BASC may have varied depending on the teacher who filled it out. Secondly, the scales from the BASC used in the current study may not have included a wide enough range of items to capture differences between abused and non-abused children within a clinically referred sample. Thus, it is possible that findings may have differed if other measures were used, such as measures that focus specifically on aggression or hyperactivity and attention problems. Relatedly, internalizing symptoms were not examined in the current study, although these symptoms may also be increased by abuse (Hatcher, Maschi, Morgen, & Toldson, 2009).

Future Directions

The current study did not examine the impact of frequency or chronicity of abuse. More research needs to focus on determining how frequency and chronicity of exposure is associated with the adverse outcomes of abuse, as this has not been thoroughly studied. Understanding how the chronicity of exposure affects the association between abuse and behavior could guide treatment interventions. Another area of needed work is developing methods to provide awareness to teachers and parents about the short and long term consequences of abuse, and what behaviors to watch for that may be related to difficulties in school adjustment. Furthermore, once an abuse event has occurred providing timely treatment to the child, instead of waiting for symptoms to develop, may potentially prevent further negative outcomes later on. Further research

on the impact of time of treatment on later child functioning would be helpful in determining optimal times for intervention.

Additionally, potential school-based interventions for abuse should be further studied, as the school environment may be an opportune location to intervene for abuse sequelae that impact school functioning. Children spend a large part of their day in school where they interact with peers and teachers to develop their social skills, utilize emotional regulation techniques, and develop cognitive abilities. Providing in school therapy is an efficient way to target vulnerable populations. For low-income populations caregivers may not be able to commute to a different location due to transportation difficulties or they may not be able to monetarily afford treatment. Thus, providing intervention and treatment in the school decreases some of the treatment barriers. However, further research is needed to determine if school interventions for abuse result in improved behavioral and academic outcomes.

Lastly, rural populations need to be included in more research studies on abuse, as abuse is prevalent in these geographical locations. In addition, utilizing non-clinical populations could provide a more accurate estimate of the prevalence rates in these populations and a clearer picture of abuse outcomes. Moreover, rural communities are less likely to have access to treatment services when compared to urban/suburban communities. Implementing school-based interventions in rural areas may be an important way to provide the community with resources while eliminating some of the treatment barriers.

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BIOGRAPHICAL SKETCH

Jennifer E. Rosado was born in Orlando, Florida, and is the younger of two children. She earned her Bachelor of Arts in psychology at Walla Walla University in 2002, with a minor in Biology, and went on to earn a Masters of Arts in counseling psychology at Walla Walla University in 2005. Upon graduating with the Dean's Scholastic Achievement Award in 2005, Jennifer took a full time position as a therapist in a rural children's multi-treatment residential facility in Pendleton, Oregon. She then took a position at Lakeside Behavioral Healthcare in Orlando, Florida as a full time children's outpatient therapist.

Jennifer relocated to Gainesville, Florida in August of 2008 to begin her graduate career in clinical psychology. She is currently completing her second year in the clinical psychology doctoral program at the University of Florida, where she will be receiving her second master's degree in May of 2010.