

EMOTION REGULATION AS A PREDICTOR OF ACADEMIC RESILIENCE AMONG
MALTREATED CHILDREN

By

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Abstract of Thesis Presented to the Graduate School
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Maltreated children frequently experience academic difficulties. In the past, this has been attributed to placement instability, length of involvement with the child welfare system, and numerous other factors that disproportionately affect maltreated children. Maltreated children are also prone to emotion regulation (ER) difficulties. Resilience (i.e., normative functioning despite having experienced maltreatment) among maltreated children is rare, particularly across multiple domains. ER has been found to predict academic performance in non-maltreated samples. In this study, the relationship between ER and academic performance was analyzed in a sample already at risk for academic difficulties (maltreated children). Measures of ER and academic performance were analyzed in a sample of maltreated children (n=168). Logistic regression analysis indicated that ER was a significant predictor of academic resilience. Late adolescence and race also significantly predicted academic performance. Placement stability and length of involvement in the child welfare system failed to predict academic resilience.

CHAPTER 1 STATEMENT OF THE PROBLEM

Introduction

In 2005, approximately 899,000 children in the United States and Puerto Rico were abused or neglected (U.S. Department of Health and Human Services, 2007). The negative impact of childhood maltreatment is evidenced by the higher rates of unemployment, teenage pregnancy, homelessness, alcohol and drug use, and mental health problems among maltreated children compared to their non-maltreated peers (Jackson & Martin, 1998; Thornberry, Ireland, & Smith, 2001). Child maltreatment is defined as, “any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child” (U.S. Department of Health and Human Services, 2007). This includes physical, sexual, and psychological abuse, as well as neglect and failure to supervise (U.S. Department of Health and Human Services, 2007).

Secondary only to the immediate goal of providing a safe environment for maltreated children, the most important function of child welfare agencies is to enable maltreated children to live functional, healthy lives. The construct of resilience is useful in considering how to assess and improve the lives of maltreated children. Resilience is defined as children’s ability to function normatively, despite having experienced maltreatment (Jaffee & Gallop, 2007). Resilience is not an automatic result of removing children from unhealthy or abusive environments—in fact, many children with histories of maltreatment do not demonstrate resilience. Similarly, children who demonstrate resilience in one area of functioning may not demonstrate resilience in other areas. In a longitudinal study of a nationally representative sample of maltreated children followed over three years, Jaffee and Gallop (2007) found that

although the majority of children were resilient in at least one domain, only 11% to 14% were resilient across all three domains [mental health, academic achievement, and social competence] at any point in time and only 2% of children were consistently resilient across domains and waves [time periods] (p. 763).

Resilience in the social competence domain was more common than resilience in the mental health or academic achievement domains (during each of the four data collection periods, at least 46% of children demonstrated resilience in the social competence domain). Even though the majority of children in Jaffee and Gallop's sample were categorized as resilient in at least one domain during each data collection period, "80% failed to show consistently positive adaptation at all three time points at any given wave [time period] just over 1 in 10 children lacked clinically significant mental health problems, had average or above-average achievement test scores, and were at least moderately socially competent" (p. 763). Jaffee and Gallop's findings indicate the complexity of examining resilience among maltreated children, as well as the importance of ensuring that maltreated children are thoroughly screened for mental health problems, emotional instability, educational difficulties, and social competence, regardless of their success in one area (Jaffee & Gallop, 2007). The paucity of resilience among the participants in Jaffee and Gallop's study is a serious concern, and indicative of the need for further research on the factors impacting resilience to childhood maltreatment.

The purpose of this study was to examine a possible factor in the development of academic resilience among maltreated children: emotion regulation. Specifically, this study focused on the relationship between emotion regulation and academic achievement. Impaired emotional functioning is a risk associated with childhood maltreatment (Bagley & Mallick, 2000). Even harsh parenting not severe enough to rise to the level of maltreatment is associated with deficits

in emotion regulation (Chang, Schwartz, Dodge, & McBride-Chang, 2003). Previous researchers have expressed concerns regarding the lack of research on the relationship between emotionality and academic performance (Gumora & Arsenio, 2002). Because maltreated children are at a higher risk for impaired emotion regulation and impaired academic performance, an exploration of the relationship between these variables is necessary.

Measuring Resilience to Maltreatment

Much of the existing research on resilience to maltreatment is fraught with methodological limitations, ranging from small and unrepresentative samples to inconsistent definitions and measures of resilience (Heller, Larrieu, D'Imperio, & Boris, 1999; Stone, 2007). Although problematic, these limitations are understandable in light of the difficulty that is often encountered when attempting to obtain such sensitive data and the variety of research interests held by those who study the maltreated population. Many researchers have defined resilience as simply the absence of a clinical diagnosis, resulting in an overestimate of the number of resilient maltreated children (Jaffee & Gallop, 2007). Jaffee and Gallop improved upon previous definitions of resilience because they included multiple domains (mental health, academic achievement, and social competence) and defined resilience in these domains as functioning “at least as well as the average child” (p. 757). In light of Jaffee and Gallop’s finding of the inconsistency of resilience across mental health, academic achievement, and social competence domains, I limited my definition of resilience to normative academic achievement for the purposes of this study.

Because children spend a large portion of their time in school, which requires demonstration of cognitive abilities, appropriate behavior, and social competence, many researchers have used measures of school achievement as indicators of resilience (Jackson & Martin, 1998; Stone, 2007). In this study, as in the majority of the literature reviewed here, I used

academic achievement as a measure of resilience for several reasons: the history of academic achievement as a measure of resilience among maltreated children, the cognitive, behavioral, and social demands of educational settings, the frequent necessity of using problem-solving skills in various school situations, and the importance of academic achievement for success in adulthood.

Consensus appears to have been reached regarding some factors contributing to the resilience of children who have been maltreated by and removed from their biological parents. Specifically, living in a stable and continuous home environment and receiving familial and extrafamilial support increase resilience to maltreatment (Heller et al. 1999; Jackson & Martin, 1998). These factors are included in several psychological models of well-being, including causal models of social resilience (Dent & Cameron, 2003). Variables associated specifically with academic resilience to maltreatment range from individual regulation strategies to caregiver characteristics. In a study of children in foster care in England that compared participants to matched controls, Jackson and Martin (1998) found that children's perception that their biological parents were interested in their education correlated positively with children's motivation to do well in school, even among children who had been separated from their parents for more than 10 years. Learning to read early, having an internal locus of control, and having caregivers who demonstrated interest in the child's academic achievement were also significantly correlated with academic resilience. Jackson and Martin found that general self-esteem did not correlate with academic achievement, a finding that is consistent with social psychological research on the failure of self-esteem to predict educational success (Crocker & Park, 2004). The discrepancy regarding variables associated with overall resilience compared to the variables associated with specific types of resilience provides further rationale for the need to

investigate the relationship between emotion regulation and academic resilience (Jaffee & Gallop, 2007; Jackson & Martin, 1998).

Foster Care Placement and Academic Achievement

Strong evidence exists for the relationship between placement in foster care (a system that exists almost exclusively for the care of maltreated children) and poor academic achievement. The instability of foster care placement contributes to the academic difficulties maltreated children experience (Stone, 2007). However, placement instability is not the only factor that influences maltreated children's academic success. Fernandez (in press) assessed a sample of Australian children in out-of-home care using the Achenbach Child Behavior Checklist and the Achenbach Teacher Report Form (Achenbach & Ruffle, 2000). Although the sample size was relatively small ($n = 59$), Fernandez's research was longitudinal and included a control sample. Internalizing behaviors (i.e., anxiety, sadness, nervousness, fearfulness, unresponsiveness to affection, underactivity) and externalizing behaviors (i.e., defiance, destructiveness, violence, tantrum-like outbursts) were measured (Fernandez, in press; Achenbach & Ruffle, 2000). Fernandez gathered information from children, caregivers, and teachers. Children in out-of-home care were rated lower by teachers than their control group peers on measures of academic performance, working hard, behaving appropriately, learning, and being happy. Additionally, children in Fernandez's sample reported that they understood that externalizing behaviors were likely to result in their removal from placements. Children also reported that repeated placement changes were detrimental to their education.

Children who are concerned about experiencing placement disruptions may attempt to avoid externalizing behaviors. The children in Fernandez's (in press) sample viewed internalizing behaviors as less detrimental to the stability of their placements than externalizing behaviors. However, if externalizing behaviors were originally the result of poor emotion

regulation, directing emotional reactions inward (i.e., moving from externalizing behaviors to internalizing behaviors) is not likely to solve the underlying problem of poor emotion regulation. Consequently, poor emotion regulation without externalizing behaviors may still have a detrimental effect on other aspects of children's lives, such as academic achievement.

Emotion Regulation in Maltreated Children

Childhood maltreatment impacts numerous facets of individual and social functioning, including emotion regulation (Maughan & Cicchetti, 2002). Teisl and Cicchetti (2007) examined the emotion regulation abilities of maltreated children in relation to aggressive and disruptive behavior. Children with a history of physical abuse were rated as more aggressive and disruptive by their peers than nonmaltreated children. However, the relationship between a history of physical abuse and being rated as aggressive and disruptive by peers was mediated by poor emotion regulation and the tendency to perceive ambivalent and prosocial situations as hostile. Teisl & Cicchetti provided support for the idea that emotion regulation is necessary for successful social interaction. The abilities to properly interpret and react to social situations and to avoid engaging in disruptive behavior are also necessary for academic achievement. Because maltreated children's emotion regulation abilities may be impaired as evidenced by the research reviewed here, their academic achievement may also suffer.

Several researchers have found evidence of resilience to maltreatment as a function of specific personal and interpersonal characteristics. In a study of maltreated and non-maltreated children attending a summer camp program for children from backgrounds of poverty, Cicchetti, Rogosch, Lynch, and Holt (1993) found that ego-resiliency, ego-control, and self-esteem predicted overall competence. Overall competence was measured using a composite measure of adaptive functioning developed by Rogosch, Lynch, and Holt. Ego resiliency has been defined as "a set of traits reflecting general resourcefulness and sturdiness of character, and flexibility of

functioning in response to varying environmental circumstances” (Luthar, Cicchetti, & Becker, 2000, p. 546). Ego control consists of “children’s ability to modulate their impulses and feelings” (Manly, Kim, Rogosch, & Cicchetti, 2001, p. 767). Although more children in the maltreated group demonstrated low levels of competence, there were no significant differences between groups in the number of children who exhibited high competence. Cicchetti, Rogosch, Lynch, and Holt’s findings provide support for the idea that, although maltreatment affects children’s ability to develop ego resiliency and ego competence, maltreated children who are able to develop these traits may perform comparably to non-maltreated children.

Cicchetti, Rogosch, Lynch, and Holt’s findings on the relationship between self-esteem and resilience differ from the findings of educational researchers on self-esteem, highlighting the differences between different types of resilience (Crocker & Park, 2004; Jackson & Martin, 1998). Unlike Jackson and Martin’s results, self-esteem was a significant predictor in Cicchetti, Rogosch, Lynch, and Holt’s sample. Cicchetti, Rogosch, Lynch, and Holt’s study did not focus on academic outcomes, and their data was derived from interviews and self-reports. The difference between Jackson and Martin’s findings and Cicchetti, Rogosch, Lynch, and Holt’s findings serves as a reminder that resilience is complex, and the presence of a variable that predicts one type of resilience does not guarantee other types of resilience.

Bandura, Caprara, Bararanelli, Gerbino, and Pastorelli (2003) found that perceived self-efficacy to manage positive and negative affect was associated with academic self-efficacy and low engagement in delinquent activities in a sample of adolescents. Successful management of affect and avoidance of delinquent activities are frequently identified as indicators of adequate emotion regulation (Manly, Kim, Rogosch, & Cicchetti, 2001; Jackson & Martin, 1998). Although Bandura, Caprara, Bararanelli, Gerbino, and Pastorelli’s sample did not distinguish

between maltreated and nonmaltreated children, the variables studied have useful research implications for maltreated children due to the higher risk of poor academic achievement and delinquency among maltreated children (Jackson & Martin, 1998). Bandura, Caprara, Bararanelli, Gerbino, and Pastorelli's findings are important in considering the academic and emotion regulation difficulties faced by maltreated children, as well as when considering factors associated with resilience to maltreatment. Successful management of affect is likely to benefit maltreated children across domains of resilience, particularly in social and educational settings.

Children's emotion regulation ability has been found to predict their social functioning. The established relationship between emotion regulation and social competence should be considered when studying educational settings, where social competence is often necessary for success. The growing body of literature on effortful control bears resemblance to the concept of emotion regulation (Eisenberg et al., 2004). "Effortful control" refers to voluntary regulation of emotions, feelings, and corresponding behaviors (Eisenberg et al.). Effortful control differs from impulse control because of its emphasis on emotions and feelings. Impulse control focuses more on the urge to commit an act, and is defined as "the ability to resist an impulse, desire, or temptation and to regulate its translation into action" (American Psychological Association, 2007, p. 471). For example, a person experiencing difficulty with effortful control might have difficulty suppressing unpleasant emotions that interfere with the ability to perform necessary tasks, but may have no problem resisting the urge to eat a forbidden food. In their study of preschool and elementary-aged children with histories of internalizing and externalizing problems, Eisenberg et al. found that both effortful control and impulse control uniquely predicted resilience. This research is relevant to the current study because effortful control can be conceived of as a component of emotion regulation (Eisenberg et al.). Emotion regulation is

heavily influenced by early parent-child interactions, a finding that is of particular concern for maltreated children, whose parent-child interactions are frequently negative and inconsistent (Cole, Martin, & Dennis, 2004; Teisl & Cicchetti, 2007). Failure to regulate emotions appropriately can result in school dropout and teacher-reported social problems, in addition to both externalizing and internalizing psychological problems (Zeman, Cassano, Perry-Parrish, & Stegall, 2006).

Emotion regulation may also affect academic performance by impacting children's ability to focus their attention. In a study of 139 children aged four to six, Maughan and Cicchetti (2002) found that 80% of maltreated children exhibited dysregulated emotion regulation patterns (EMRPs) while observing a simulated argument between their mothers and a researcher. EMRPs are calculated based on "children's organization of overt emotional behavioral responses and subjective reports in response to angry adult affect" (Maughan and Cicchetti, p. 1527). Only 37.2% of controls (nonmaltreated children) exhibited dysregulated EMRPs. Of the maltreated children who exhibited dysregulated EMRPs, undercontrol was the most common type of dysregulated EMRP. Maughan and Cicchetti defined undercontrol as "an underregulation of emotional behavioral reactivity. . . elevated and prolonged rates of both positive and negative emotionality. . . often described as indecisive, disorganized, and not goal oriented" (p. 1527). All of the characteristics outlined in Maughan and Cicchetti's definition of undercontrol are potentially harmful to successful performance in an educational setting. Although children do not normally experience situations similar to Maughan and Cicchetti's experiment in their classrooms (i.e., adults arguing), a child who exhibits inappropriate and prolonged emotional responses and is perceived by others as disorganized and not goal oriented is likely to encounter problems with peers, teachers, and other authority figures. In a study of 325 kindergarten

students, Graziano, Reavis, Keane, and Calkins (2007) analyzed parents' ratings of their children's emotion regulation. Graziano et al. found that emotion regulation was positively related to reading and math scores and teachers' reports of students' academic success and classroom productivity. Graziano et al. also found that emotion regulation predicted academic performance even after IQ was taken into account.

Emotion regulation has been proposed to independently influence academic achievement due to its effects on goal orientation and focus of attention (Maughan & Cicchetti, 2002; Gumora & Arsenio, 2002). Gumora & Arsenio (2002) used a task orientation scale to measure the emotion regulation of middle school students. They defined emotion regulation as "individual differences in the voluntary ability to focus on tasks for sustained periods" (p. 402). Emotion regulation significantly predicted academic achievement among the participants in Gumora & Arsenio's sample, even after controlling for cognitive variables. These findings are especially relevant to this study because I sought to measure the independent relationship of emotion regulation to academic achievement in a sample of participants who are at risk for poor academic achievement.

To provide sufficient rationale for my hypothesis regarding the effect of emotion regulation on academic achievement, variables previously demonstrated to affect academic achievement were taken into consideration. These variables, many of which disproportionately affect maltreated children, include mental health status, placement stability, race, and socioeconomic status (Berlak, 2005; Bradley & Corwyn, 2002; Eckenrode, Rowe, Laird, & Brathwaite, 1995; Nelson, Benner, Lane, & Smith, 2004). Membership in a racial minority group, residential placement instability, poor mental health, and low socioeconomic status have

independent detrimental effects on academic achievement (Berlak, 2005; Bradley & Corwyn, 2002; Eckenrode et al., 1995; Nelson et al., 2004).

Despite what is known about the impact of maltreatment on emotion regulation, the importance of emotion regulation to social competence, and the importance of social competence to academic achievement, the strength of the direct relationship between emotion regulation and academic achievement in maltreated children remains unclear. Maltreated children are at higher risk for deficits in emotion regulation than nonmaltreated children (Maughan & Cicchetti, 2002). Previous researchers have found that the relationship between maltreatment and other maladaptive behaviors is mediated by the capacity for emotion regulation (Bandura et al., 2003). Successful emotion regulation is likely to benefit maltreated children across domains of resilience. An understanding of the effect of emotion regulation on one domain of resilience is an important first step in examining the relationship between emotion regulation and overall resilience.

CHAPTER 2 PURPOSE OF THE STUDY

The goal of the study was to determine whether emotion regulation predicted academic resilience in maltreated children. The variables previously hypothesized to affect children's resilience to adverse circumstances are numerous and diverse. If it can be determined that emotion regulation predicts academic performance among maltreated children, researchers may be better able to pinpoint the factors associated with resilience to maltreatment. I propose that emotion regulation is a crucial factor in the development of resilience to maltreatment. Consequently, I predicted that emotion regulation would predict academic achievement in a sample of maltreated children.

Significance of the Study for Theory

The literature on maltreatment and resilience is scattered among various disciplines, including social work, developmental psychology, social psychology, and educational psychology. The cross-disciplinary research on maltreatment has resulted in valuable explanations regarding factors affecting resilience to maltreatment. I hope to add to our knowledge of the factors affecting resilience through my examination of the relationship between emotion regulation and academic resilience.

Significance of the Study for Practice

It is my hope that accomplishment of the goals described in the previous section will result in significant changes in the way maltreated children are assessed and treated. Although the measurement tool to be used in the proposed research contains an educational component, child protection agencies typically do not list educational progress as a critical indicator of well-being (Stone, 2007). By focusing on academic achievement as a measure of resilience, child protection professionals may gain a greater understanding of why some children achieve well,

and others do not. By assessing children's emotion regulation, child protection professionals may be able to predict and improve resilience among maltreated children before major academic problems arise.

CHAPTER 3 METHOD

A data set provided by a Florida community based care organization was used in the analysis. The data set included demographic, academic, disability, and residential placement information. Due to the lack of variability in socioeconomic status among children in the sample, this variable was not included in the analysis. Children with disabilities likely to impact their academic achievement were excluded from the sample. The data set also included Child and Adolescent Functional Assessment Scale (CAFAS) scores, which were obtained by child welfare professionals for every child in this sample. CAFAS scores are calculated based on interviews with maltreated children, their caregivers, and teachers, as well as through review of child welfare files (Hodges, 1990/1994). Scores on the School/Work performance subscale of the CAFAS were used as measures of academic performance.

The relationship between emotion regulation and academic performance was analyzed. Emotion regulation was examined using CAFAS Mood/Emotions subscale scores. Participants included 177 children ages 6 to 18 who had open child welfare services cases during the 12 months prior to data collection. Logistic regression analysis was used to examine the following variables: age, race, gender, number of residential placement changes in the past 12 months, academic performance, number of months the child's child welfare case has been open, score on the Moods/Emotions subscale of the CAFAS, and score on the School/Work subscale of the CAFAS.

Emotion Regulation

The Moods/Emotions subscale of the CAFAS (Hodges, 1990/1994) was used as the measure of emotion regulation. The CAFAS consists of 160 items on eight subscales (School/Work, Home, Community, Behavior Towards Others, Moods/Emotions, Self-Harmful

Behavior, Substance Use, and Thinking). Previous analysis of children's scores on the Moods/Emotions subscale of the CAFAS has yielded inter-rater reliability of .74 to .88 for inexperienced raters (undergraduate and graduate students), and inter-rater reliability of .94 for experienced raters (Hodges & Wong, 1996). The CAFAS data used for this study was collected by experienced raters (agency staff). Hodges and Wong's analysis of children's total CAFAS scores produced a test-retest reliability coefficient of .78 and internal consistency ratings ranging from .73 to .78. However, test-retest reliability and internal consistency ratings are not available for individual subscales. Moderate positive construct validity correlations (ranging from .36 to .62) between the CAFAS and four other global functioning measures were found (Hodges & Wong, 1996). Using regression analysis to assess criterion-related validity, Hodges and Wong found that total CAFAS scores were significantly predictive of problem behaviors, including involvement with juvenile justice, school-related problem behaviors, problems in social behaviors, and risk behaviors (i.e., threatening to harm oneself or others). Criterion-related validity scores for individual subscales are not available.

Items on the CAFAS Moods/Emotions subscale reflect the severity of emotions' effect on the child's life. Sample items from the Moods/Emotions subscale include "marked changes in moods that are generally intense and abrupt" and "easily distressed if makes mistakes" (Hodges, p. 7, 1990/1994). Raters review a list of behaviors and indicate which behaviors the child they are rating has exhibited in the past six months. The score of each item is dependent upon the severity of the behavior it describes: 0 = No Impairment, 10 = Mild Impairment, 20 = Moderate Impairment, and 30 = Severe Impairment. For example, the item, "Has a clear plan to hurt self, or a genuine desire to die" corresponds to a score of 30, and the item, "Feels normal distress, but daily life is not disrupted" corresponds to a score of zero (Hodges, 1990/1994). Subscale scores

are determined by the most severe behavior the child has exhibited during the time period being scored. For example, a child who exhibits two behaviors in the Moderate Impairment category, and one behavior in the Severe Impairment category would be classified as Severely Impaired for the corresponding subscale. Although the CAFAS is considered a scale, individual subscales are scored categorically (i.e., whether or not a child has exhibited a behavior determines the severity of impairment, regardless of the number of behaviors in any category). Because there is no quantitative difference between a classification of 0, 10, 20, or 30 on any subscale, the data was treated as categorical for the analysis. For this reason, logistic regression analysis was used to examine the relationship between the School/Work subscale, the Moods/Emotions subscale, and demographic variables. Logistic regression was appropriate for this data because this type of regression allows both the outcome and predictor variables to be categorical (Field, 2005). In other words, logistic regression allowed me to examine the probability of a participant exhibiting academic resilience while also exhibiting sufficient emotion regulation, despite the fact that neither academic resilience nor emotion regulation had quantitatively different levels in this data set.

Children whose Moods/Emotions CAFAS score indicated mild impairment (10) or minimal to no impairment (0) were categorized as having sufficient emotion regulation abilities. Children whose School/Work CAFAS score indicated moderate (20) to severe (30) impairment were categorized as having insufficient emotion regulation abilities.

Academic Performance

Scores on the School/Work Performance subscale of the CAFAS were used to determine academic resilience. Sample items from the School/Work subscale include “grade average is lower than C and is not due to lack of ability or any physical disabilities” and “receiving a reprimand or equivalent” (Hodges, p. 3, 1990/1994). Children whose School/Work CAFAS

score indicated mild impairment (10) or minimal to no impairment (0) were categorized as academically resilient. Children whose School/Work CAFAS score indicated moderate (20) to severe (30) impairment were categorized as not academically resilient.

Placement Stability

Child welfare case files were reviewed to determine the number of residential placement changes over the past 18 months. Children who experienced less than four placement changes during the 18 month period reviewed were categorized as stable. Children who experienced four or more placement changes were categorized as unstable. I chose to measure placement stability as a dichotomous variable for several reasons. First, the initial home or facility children are placed in is often categorized as an “emergency placement.” An emergency placement is temporary, and its purpose is to allow child protection workers to remove children from the immediate dangers in their homes of origin and move them to safe environments until a more permanent placement can be found. Consequently, many foster children move within the first 30 days of removal from their families of origin. Because this initial move is often expected, it does not fall into the same category as other placement disruptions. Second, measurement of placement stability has not been consistent throughout the literature. By using a dichotomous measure, I have made a distinction between children who are likely to have spent a significant portion of the school year in the same place, and children whose school year has likely been disrupted by multiple moves.

Months Involved with the Child Welfare System

The Florida Department of Children and Families attempts to reunify children with their families of origin within 12 months of removal (Florida Department of Children and Families, 2006). All the children in this sample were in out of home care at the time of data collection (foster care or residential group settings). The following categories were used to distinguish the

length children's involvement with the child welfare system: less than 12 months (i.e., within the desired time period for reunification), between 13 and 24 months (beyond the desired time period), and 25 months or more (far beyond the desired time period).

CHAPTER 4 RESULTS

Demographic Variables

The initial analysis was conducted using a sample of 177 children. Nine children were excluded due to disabilities with the potential to impact school achievement (mental retardation and learning disabilities). The remaining 168 children ranged from ages 6 to 18. For the analysis, ages were grouped into middle childhood (ages 6-9, n = 27), early adolescence (ages 10-14, n = 60), and late adolescence (ages 15-18, n = 81). White children comprised 56% of the sample (n = 94). Approximately 44% of the children in the sample were black. The database containing race information for this sample treats “Hispanic” as an ethnicity, rather than a race, resulting in Hispanic children being classified as white. However, less than 1% of children in the sample were Hispanic, so further analysis was not completed to reclassify Hispanic children. The sample was 61% male (n = 103). The number of months each child had been involved with the child welfare system ranged from 1 to 215. Forty-nine participants’ child welfare cases had been open for 12 months or less, 51 cases had been open for 13 to 24 months, and 68 cases had been open for 25 months or more. An overwhelming majority of children in this sample had experienced four or more placements in the past 18 months: 130 children (77%) had lived in at least four placements. The number of placements for the 18 month data collection period ranged from 1 to 44. Table 4-1 summarizes the demographic variables for all participants who were included in the analysis.

Academic Resilience and Emotion Regulation

CAFAS scores for measures of emotion regulation and academic resilience were dichotomized. Forty-one percent of participants scored in the mild to no impairment range on the School/Work subscale of the CAFAS, indicating academic resilience. Sixty-two percent of

participants scored in the mild to no impairment range on the Emotion Regulation subscale of the CAFAS, indicating sufficient emotion regulation ability. Table 4-2 outlines participants' scores on these measures.

Logistic Regression

All variables from Table 4-1 and Table 4-2 were included in the regression analysis. Race ($B = 1.612, p < .001$), late adolescence ($B = -1.23, p = .024$), and emotion regulation ($B = -1.237, p = .002$) significantly predicted academic resilience. Table 4-3 provides logistic regression results for all independent variables included in the analysis.

Table 4-1. Demographic variables

Variable	N	%
n=168		
Gender		
Male	103	61.3
Female	65	38.7
Race		
Black	74	44.0
White	94	56.0
Age Group (years)		
6-9	27	16.1
10-14	60	35.7
15-18	81	48.2
Months in system		
12 or less	49	29.1
13 to 24	51	30.4
25 or more	68	40.5
Placements in past 18 months		
Less than four	38	22.6
Four or more	130	77.4

Table 4-2. Academic resilience and emotion regulation

Variable	N	%
n = 168		
Academic Resilience		
Yes (0 or 10 on CAFAS)	69	41.0
No (20 or 30 on CAFAS)	99	59.0
Emotion Regulation		
Yes (0 or 10 on CAFAS)	105	62.5
No (20 or 30 on CAFAS)	63	37.5

Table 4-3. Logistic regression of variables predicting academic resilience

Variable	<i>B</i>	<i>SE</i>	<i>P</i>
Gender	.462	.383	.229
Race	1.612	.390	.000**
Early Adolescence	-.591	.549	.282
Late Adolescence	-1.23	.546	.024*
13-24 months in system	-.490	.477	.304
25+ months in system	.103	.450	.819
4 or more placements	-.855	.474	.071
Emotion regulation	-1.237	.408	.002**
Constant	1.749	.844	.038

* $p < .05$

** $p < .005$

CHAPTER 5 DISCUSSION

The prevalence of academic difficulties among maltreated children is an urgent problem. Maltreated children who exhibit academic resilience may be able to overcome the numerous difficulties associated with maltreatment. The purpose of this study was to determine whether emotion regulation significantly predicted academic resilience among maltreated children. Results from the logistic regression analysis supported this hypothesis.

Numerous other factors have been found to impact academic achievement among maltreated children. These factors were included in the analysis, and with one exception, were unable to significantly predict academic resilience. The inability of placement stability to predict academic resilience ($B = -.855, p = .071$) is an especially interesting finding because this variable has been shown to predict academic performance in the past (Stone, 2007; Fernandez, in press). One possible explanation for this finding is that emotion regulation serves as a mediator for the relationship between placement stability and academic resilience. If the children in this sample share the beliefs of the children in Fernandez's (in press) sample regarding the relationship between externalizing behaviors and placement disruptions, it is possible that some children with poor emotion regulation abilities are able to direct their emotions inward in order to avoid disrupting their placements. However, if these children are unable to prevent their emotion regulation problems from impacting their academics, this would explain the inability of placement stability to predict academic resilience. Further research is needed to explore this possibility.

Emotion regulation may predict the ability of maltreated children to function normatively. Despite the clear relationship between emotion regulation and academic resilience in this sample, the results should be interpreted with caution. As noted by Jaffee and Gallop

(2007), resilience to maltreatment across categories of resilience is very rare. For this reason, academic resilience cannot be assumed to perfectly predict other types of resilience. Additional analysis is necessary to determine whether normative functioning in other areas is also predicted by emotion regulation ability.

The number of children who exhibited academic resilience in this sample is an important finding. Forty-one percent of the children in this sample exhibited academic resilience (mild to no impairment on the School/Work subscale of the CAFAS). Specifically, this serves as a reminder that maltreatment does not always lead to universally impaired functioning, even in a sample of children who were maltreated severely enough to be removed from their families of origin. As predicted, emotion regulation was related to academic resilience. This finding may prove valuable to educators and child welfare professionals working with maltreated children. Preventing learning problems and academic difficulties is much more effective than attempting to manage them once they begin to hinder students (Slavin, 1994). If emotion regulation predicts academic resilience, implementing interventions aimed at improving emotion regulation in early childhood may prevent academic difficulties. For children whose academic abilities have already been impaired by poor emotion regulation, emerging research indicates that temporary emotional disengagement in school settings may be a more effective strategy than previously thought (Rice, Levine, & Pizarro, 2007). Emotional disengagement involves “attempting to eliminate subjective feelings and outward signs of emotion” (Rice, Levine, & Pizarro, p. 813). Rice, Levine, and Pizarro proposed that teaching children to eliminate negative emotions may help them focus on more appropriate thoughts and goals in educational settings.

Maughan and Cicchetti (2002) suggested that maltreated children’s emotion regulation may be related to their ability to focus their attention. It may be the case that the ability to focus

attention predicts both emotion regulation and academic resilience. If future research supports this hypothesis, interventions for maltreated children could focus on the broader goal of focusing attention and potentially impact numerous areas of functioning.

One disturbing finding of the current research was the strength of the relationship between race and academic resilience. Black children were significantly less likely than white children to exhibit academic resilience ($B = 1.612, p < .001$). Socioeconomic status is not a possible mediator in this sample, as nearly 100% of the sample experienced extreme poverty in their families of origin.

Older children (ages 15-18) were significantly less likely to exhibit academic resilience than the other age groups ($B = -1.23, p = .024$). This could be due to a number of factors more likely to impact older children, such as truancy, delinquency, teen pregnancy, and drug use. Additional data would be necessary to determine the specific factors associated with a lack of academic resilience among the children in this age group.

Limitations

Although the sample size was sufficient for the statistical methods used, a larger sample would have allowed for greater predictive ability. The significance of race and age as predictors of academic resilience is problematic, and further analysis is needed to investigate these relationships. Because the study design was not experimental, causal links cannot be established. No previous studies have examined CAFAS subscales individually. The CAFAS has moderate positive correlations with other measures of global functioning, but further research is needed to investigate the validity of individual subscales (Hodges & Wong, 1996). Finally, only one measure of emotion regulation and one measure of academic resilience were utilized. A study design with multiple measures of these variables would enable more confident predictions about their relationships.

Conclusion

In this study, I found a significant relationship between emotion regulation and academic resilience in a sample of 168 maltreated children. These results contribute to the literature on the impact of childhood maltreatment by demonstrating that emotion regulation was a greater predictor of academic resilience in this sample than other factors commonly thought to negatively impact foster children's academic performance, such as placement stability and length of involvement in the child welfare system. Even in a sample of children who are more likely to experience emotion regulation problems and academic difficulties (maltreated children), notable percentages of participants exhibited sufficient emotion regulation skills (62.5%) and academic resilience (41%). Although these results are encouraging, an alternative view is that less than half of the children in the sample exhibited academic resilience, and over a third of the sample are unable to sufficiently regulate their emotions. Additional research is needed in order to isolate the variables associated with academic resilience even further, to develop interventions for children with emotion regulation difficulties, and to find ways to prevent emotion regulation difficulties from interfering with academic work.

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BIOGRAPHICAL SKETCH

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