

CHILD MALTREATMENT, EMOTION REGULATION, AND POSTTRAUMATIC STRESS:
EXAMINING THE CONTRIBUTION OF CHILDHOOD EMOTIONAL ABUSE

by

ERIN E. HARTZELL

(Under the Direction of Joan Jackson)

ABSTRACT

The present study examined the relationship of emotion regulation to multiple forms of child abuse and subsequent posttraumatic stress. Particular consideration was given to the potential impact of childhood emotional abuse, which has received less attention in the literature. Participants were 912 predominately white female students who completed a questionnaire packet pertaining to the constructs of interest. Results provide preliminary support for greater emotion regulation difficulties among women endorsing a history of sexual, physical, and emotional abuse (compared to women reporting none-minimal abuse). Notably, findings revealed that a history of emotional abuse was the most powerful predictor of emotion dysregulation, accounting for the overwhelming majority of explained variance. Additionally, regression analyses suggested that symptoms of posttraumatic stress endorsed by victims of physical and emotional abuse were partially explained by their resulting emotion regulation difficulties. These findings indicate that targeting emotion dysregulation among survivors of child maltreatment, particularly those with a history of emotional abuse, may decrease posttraumatic stress and prevent subsequent maladjustment.

INDEX WORDS: child maltreatment, emotion regulation, posttraumatic stress

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS	iv
CHAPTER	
1 INTRODUCTION	1
Overview	1
Literature Review of Child Maltreatment	2
Emotion Regulation.....	16
Emotion Regulation and Mental Health.....	20
Effects of Child Maltreatment on Emotion Regulation	23
2 RATIONALE AND HYPOTHESES	35
Purpose and Significance	35
Constructs.....	36
Hypotheses	38
3 METHOD	42
Participants	42
Measures.....	42
Design and Procedure.....	46

4	RESULTS	48
	Maltreatment Characteristics.....	48
	Hypothesis 1	48
	Hypothesis 2.....	52
	Hypothesis 3	54
	Hypothesis 4.....	59
5	DISCUSSION.....	65
	Hypothesis 1	65
	Hypothesis 2.....	65
	Hypothesis 3	66
	Hypothesis 4.....	70
	Limitations.....	71
	Implications and Future Directions	73
	REFERENCES	75

CHAPTER 1

INTRODUCTION

Overview

A history of child abuse has been consistently identified as a potential risk factor for a range of mental health, interpersonal, and sexual problems. Psychological difficulties most frequently associated with child abuse include depression, anxiety, posttraumatic stress disorder, dissociation, substance abuse, low self-esteem, poor adjustment, and personality disorders (Briere & Runtz, 1990; Browne & Finkelhor, 1986; Gross & Keller, 1992; Kent & Waller, 2000; MacMillan, Fleming, & Streiner, 2001; Rosen & Martin, 1998; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997). Given the considerable array of consequences mentioned above, there appear to be multiple pathways comprised of various mediating and moderating factors that more fully explain the relationship between child maltreatment and adult psychopathology (Black, Slep, Heyman, 2001; Kent & Waller, 2000, Malinosky-Rummell & Hansen, 1993; Wyatt & Newcomb, 1990).

Emotion regulation has been proposed as a potentially unifying explanation for diverse symptom presentations and maladaptive behaviors (Gross & Munoz, 1995). More specifically, developmental psychopathologists have suggested that childhood abuse disturbs the acquisition of appropriate emotion regulation and interpersonal skills (e.g. Cicchetti & White, 1990; Shields & Cicchetti, 1998). Difficulties in emotion regulation have been associated with diminished self-control and increased negativity in preschoolers, while reactive aggression, difficulty with peers, and limited social competence have been found among children and adolescents with histories of

abuse (Howes & Eldredge, 1985; Shields, Ryan, & Cicchetti, 2001; Shipman, Zeman, Penza, & Champion, 2000). However, few if any studies have considered the impact of different forms of child abuse (i.e. sexual, physical, and emotional abuse) and their specific and collective influence on emotion regulation.

Therefore, the present study examined the relationship of emotion regulation to multiple forms of child abuse, particularly the potentially unique contribution of childhood emotional abuse, which had yet to be examined within the extant literature. In addition, this paper includes a brief literature review of childhood sexual, physical, and emotional abuse as well as a review of the concept of emotion regulation.

Literature Review of Child Maltreatment

Childhood Sexual Abuse

Child sexual abuse continues to be the most widely studied form of maltreatment (Behl, Conyngham, & May, 2003). Of the 2,090 child maltreatment articles published from 1977-1998, 32.7% of the articles specifically examined the effects of child sexual abuse compared to 20.2% for child physical abuse, and only 4.2% for child emotional abuse (Behl et al, 2003).

Beginning in the mid-to-late 1980s, the immediate effects of childhood sexual abuse exhibited by survivors (i.e. fear, anxiety, depression, anger, aggression, and sexually inappropriate behaviors) were examined in addition to the more frequently reported long-term effects of sexual victimization (Browne & Finkelhor, 1986). Other symptoms impacting sexual abuse survivors in the short-term include physiological responses such as hyperarousal, hypervigilance, and dissociation (Mulvihill, 2005). More long-term or enduring consequences associated with sexual abuse initially identified included: depression and anxiety, self-destructive behaviors, feelings of isolation, shame, low self-esteem, substance abuse, somatization,

revictimization, and sexual problems (Briere & Runtz, 1990; Browne & Finkelhor, 1986; Mullen, Martin, Anderson, Romans, & Herbison, 1995).

In subsequent analyses of the mental health sequelae of self-reported childhood sexual abuse, Saunders and colleagues (1992) found that a history of sexual abuse was associated with a wide range of Axis I psychopathology including posttraumatic stress disorder, depression, obsessive compulsive disorder, phobias, panic disorder, and sexual disorders (Saunders, Villeponteaux, Lipovsky, Kilpatrick, & Veronen, 1992). More recently, Tyler (2002) reviewed 41 articles that examined the social and emotional outcomes of childhood sexual abuse, specifically, suicide and substance use, gang involvement, pregnancy, running away, posttraumatic stress disorder, risky sexual behavior, and behavioral problems and suggested that these outcomes tended to vary by developmental period (Tyler, 2002). Finally, in a recent study of the psychological sequelae of sexual abuse, survivors endorsed symptoms associated with all 10 scales of the Trauma Symptom Inventory including depression, anger-irritability, anxious-arousal, intrusive experiences, defensive avoidance, dissociation, sexual concerns, dysfunctional sexual behavior, impaired self-reference, and tension reduction behavior. These findings remained significant even after controlling for a variety of sociodemographic variables (i.e., sex, age, race, and family income), and they provide additional support for the diverse consequences characteristic of sexual abuse (Briere & Elliott, 2003).

A history of child sexual abuse has also been significantly associated with perceived poorer overall health, including a number of distressing physical symptoms including chronic fatigue syndrome, fibromyalgia, ischemic heart disease, cancer, liver and lung disease, and skeletal fractures (Mulvihill, 2005; Felitti et al, 1998; Perry & Azad, 1999). Although functional disorders may result as a consequence of psychological illness, empirical studies suggest that this

relationship may actually be mediated by cerebral dysfunction (Heem, Ehlert, Hanker, & Hellhammer, 2000; Mulvihill, 2005).

In addition to examining the broad array of outcomes enumerated above, developmental psychopathologists have conceptualized the unique effects of childhood sexual abuse in two domains of self and social functioning (Cole & Putnam, 1992). Cole and Putman (1992) suggest that many of the psychological disturbances often associated with sexual abuse including borderline personality disorder, dissociative disorders, somatoform disorders, eating disorders, and substance abuse disorders result from disruptions in self-development. Specifically, these deviations in self-development can jeopardize a child's physical and phenomenological sense of self as well as their ability to engage in emotion regulation and impulse control (Cole & Putnam, 1992; Shields & Cicchetti, 1998).

Finkelhor and Browne (1986) have also proposed explanations for the diverse symptom presentations of sexual abuse survivors, particularly seemingly opposing outcomes such as aversion to sex versus sexual promiscuity. They suggest that some sexual abuse survivors endure a process of traumatic sexualization where a child's sexuality is shaped through a series of interpersonally dysfunctional or inappropriate interactions (Finkelhor & Browne, 1986). Specifically, if the child's sexual experiences generate fear and revulsion, he or she may be conditioned to associated sex with negative emotions and generalize these feelings across non-abusive sexual experiences in adulthood. However in other situations, a child may learn to associate the abuse experience with attention, affection, or reward especially if the child is otherwise neglected. As a result, adults sexually abused as children may use sex to meet nonsexual needs which may lead to promiscuity (Finkelhor & Browne, 1985).

Although a history of sexual abuse has been firmly established within the literature as a risk factor for several adverse outcomes, it is important to recognize that many sexual abuse survivors deny serious symptoms and maintain their mental health. Studies have shown that 44% of girls (Spaccarelli & Kim, 1995) and between 20% to 30% of women (Lynskey & Fergusson, 1997) with sexual abuse histories do not develop significant psychopathology (Katerndahl, Burge, & Kellogg, 2005). Ongoing research investigating the specific characteristics of abuse experiences (i.e. duration, frequency, age of onset, relationship to perpetrator) in addition to other potentially moderating factors such as social support suggests that these factors may account for the considerable diversity in presentation of sexual abuse survivors and provide theoretical support for the above statistics (Katerndahl et al., 2005; Lange et al., 1999). It should also be noted that some survivors describe positive outcomes, changes that have been shown to emerge within two weeks after a sexual assault experience and continue throughout the post-assault year (Frazier, Conlon, & Glaser, 2001). Increasingly referred to within the literature as post-traumatic growth, these perceived benefits have been organized into four domains: self-protection, increased knowledge of sexual abuse, protecting children from abuse, and having a strong personality (McMillen, Zuravin, & Rideout, 1995). Together these domains of perceived growth begin to acknowledge the remarkable resiliency common to many survivors of sexual abuse.

Childhood Physical Abuse

Although articles examining the effects of CSA are more prevalent than those exclusively investigating childhood physical abuse, the study of physical abuse during the late 1970s to the early 1980s preceded research pertaining to all other forms of child maltreatment (Behl et al., 2003). Even though the annual percentage of articles examining physical abuse has recently

declined (Behl et al., 2003), there is sufficient evidence to suggest that a history of physical abuse remains a widespread problem associated with significant early and long-term consequences (Malinosky-Rummell & Hansen, 1993).

Initially termed “the battered child syndrome” by Kempe and colleagues (1962), the majority of empirical studies investigating the effects of physical abuse initially focused on the short-term effects on childhood behavior (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962; Malinosky-Rummell & Hansen, 1993). Immediate consequences of childhood physical abuse identified within the literature include perceptual-motor deficits, lower IQ scores, poorer academic performance, increased aggression toward adults and peers, as well as an increase in feelings of hopelessness, depression, and low self-worth (Ammerman, Cassisi, Hersen, & Van Hasselt, 1986; Briere & Runtz, 1988; Conaway & Hansen, 1989; Lamphear, 1985).

After determining several short-term consequences and establishing a foundation of research linking physical abuse with problematic childhood behavior, research investigating the potentially enduring effects of childhood physical abuse intensified, producing alarming findings (Malinosky-Rummell & Hansen, 1993). The negative outcomes identified most frequently among survivors of physical abuse has be categorized within seven domains: aggressive and violent behavior, nonviolent criminal behavior, substance abuse, self-injurious and suicidal behavior, emotional problems, interpersonal problems, and academic and vocational difficulties (Malinosky-Rummell & Hansen, 1993).

The majority of research addressing the long-term consequences of childhood physical abuse has focused on two related outcomes: aggression and violent behavior. Multiple studies employing diverse methodologies have consistently linked physical abuse to adolescent and adult aggression (Briere & Runtz, 1990; Garbarino & Plantz, 1986; Lane & Davis, 1987).

Adolescents who display aggressive and violent behavior, including extrafamilial and dating violence, report higher rates of maltreatment compared to the general population (Alfaro, 1981; Garbarino & Plantz, 1986). This relationship has also been demonstrated among children receiving mental health treatment as well as with college women. In both populations, those individuals who endorsed a history of physical abuse exhibited more aggression than their non-abused peers (Blount & Chandler, 1979, Briere & Runtz, 1990). Equally disturbing is the finding that approximately one-third of physically abused or neglected children perpetuate the cycle of abuse as adults by physically abusing their own children (Kaufman & Zigler, 1987; Widom, 1989).

In addition to displays of violence and aggression toward others, children with a physical abuse history demonstrate significantly more noncompliance, nonaggressive conduct disorders, and other externalizing behaviors than do non-abused comparison groups (Ammerman et al., 1986; Conaway & Hansen, 1989; Malinosky-Rummell & Hansen, 1993). Similarly, physically abused adolescents have more legal problems than non-abused peers according to research on juvenile delinquency (Alfaro, 1981; Garbarino & Plantz, 1986).

Considering survivors of physical abuse exhibit increased difficulties with conduct and aggression, it is not surprising that some evidence exists to support a link between childhood physical abuse and substance abuse in adolescence and adulthood. Adults who frequently abuse substances not only report a higher rate of physical abuse than reported by the general population, but research also suggests that adults with a history of physical abuse demonstrate more “suicidal drinking” and engage in more problematic drinking behaviors than do non-abused alcoholics (Kroll, Stock, & James, 1985). However, it is important to mention that results from a prospective research study did not confirm this relationship. Instead, McCord (1983) found that

physically abused men did not evidence higher rates of alcoholism than men exposed to a broad range of childhood environments (McCord, 1983).

Although research investigating the relationship between childhood physical abuse and self-injurious and suicidal behavior has reported mixed findings, Briere and Runtz (1988), who focused exclusively on college women endorsing a history of physical abuse, discovered that self-reported maternal physical abuse was specifically associated with increased suicidal ideation. In a more recent study, Gratz and colleagues (2002) found a significant relationship between physical abuse and self-harm among college women as well as a relationship of similar magnitude among college men (although this relationship was not statistically significant) (Gratz, Conrad, & Roemer, 2002). They went on to explain their results by suggesting that the association between childhood physical abuse and self-harm may be moderated by gender (Gratz et al., 2002).

A history of physical abuse has also been associated with a variety of psychological and emotional problems including somatization, anxiety, depression, paranoid ideation, psychosis, and dissociation in female inpatient and community samples (Malinosky-Rummell & Hansen, 1993). More specifically, Chu and Dill (1990) found that physically abused female inpatients obtained higher scores on SCL-90-R subscales of Anxiety, Hostility, Paranoid-Ideation, and Psychoticism, in addition to the Dissociative Experiences Scale (DES), than did non-abused, female inpatients (Chu & Dill, 1990). However, it may be important to control for emotional or psychological maltreatment when considering the independent effects of childhood physical abuse. By controlling for the effects of emotional abuse, Briere and Runtz (1988) discovered that only maternal physical abuse was independently related to dissociation, while paternal psychological maltreatment was related to anxiety, depression, and dissociation.

In addition to the potential effects of physical abuse enumerated above, a history of physical abuse has also been associated with interpersonal problems (Wolf & Mosk, 1983), academic and vocational difficulties including lower IQ scores (Rogeness, Amrunga, Macedo, Harris, & Fisher, 1986; Hjorth & Ostrov, 1982), risky sexual behaviors (Sterk, Klein, & Elifson, 2004), and tactile hallucinations (Shevlin, Dorahy, & Adamson, 2007). Physically abused children also demonstrate facilitated access to representations of anger and well as selective attention to threat-related signals (Pollak & Kistler, 2002; Pollak & Tolley-Schell, 2003).

As seen in survivors of childhood sexual abuse, individuals with physical abuse histories do not always encounter debilitating consequences as a result of their early abuse experiences. Unfortunately, far less research has explored pathways to resilience (Cicchetti & Toth, 2005). However, the studies that have attempted to elucidate the factors that contribute to positive adaptation posit that certain personality characteristics such as high self-esteem and internal locus of control may act as protective factors (Moran & Eckenrode, 1992).

Childhood Emotional Abuse

Historically child maltreatment literature has focused almost entirely on the long-term impacts of childhood sexual and physical abuse often at the exclusion of other forms of maltreatment, such as emotional or psychological abuse. In 1988, Briere and Runtz revealed that only one study had been done on the long-term effects of psychological child abuse. Researchers continue to echo this claim by highlighting the paucity of research in this area (Behl et al., 2003; Kent & Waller, 2000; Messman-Moore & Brown, 2004; Rich, Gidycz, Warkentin, Loh, & Weiland, 2005). Proposed explanations for the lack of research investigating the effects of childhood emotional abuse emanate from the inherent ambiguity surrounding the construct of emotional abuse (Rosenberg, 1987). It has been suggested that initially researchers and clinicians

may have focused on sexual and physical abuse because of the tangible and distinguishable nature of these abuse types in comparison to emotional abuse (Kent & Waller, 2000). In addition to problems regarding the definition of emotional abuse, the discrepancy in research pertaining to emotional abuse compared to other forms of child abuse may have resulted because of the perception that emotional abuse was a far less serious type of abuse in comparison to physical and sexual abuse, even though literature supporting this notion remained absent (Kent & Waller, 2000).

Although the lack of an adequate definition for emotional or psychological abuse continues to impede research in this area, this is certainly not the first time child abuse researchers have faced such a dilemma. The child maltreatment literature suggests that similar problems arose when attempting to arrive at adequate definitions of physical and sexual abuse, yet some have argued that operationalizing emotional abuse has been particularly troublesome (Kent & Waller, 2000; O'Hagan, 1995). This is not surprising considering the existence of several different terms throughout the child maltreatment literature presumably describing the same phenomenon. The term emotional abuse continues to be used synonymously with labels such as emotional maltreatment, psychological battering, verbal abuse, and most frequently psychological abuse (Glaser, 2002; Hart & Brassard, 1987; Kent & Waller, 2000; O'Hagan, 1995). While some researchers use the terms interchangeably, others argue that the terms are not synonymous and propose specific definitions for each term (O'Hagan, 1995). Finally, some researchers avoid the complicated matter of definition altogether and simply fail to concretely define what it is they are attempting to measure (Kent & Waller, 2000).

While a comprehensive review of all of the definitions currently utilized throughout the child maltreatment literature is beyond the scope of this review, some of the more frequently

used definitions are worth mentioning. Emotional abuse has been described as “soul murder” (Garbarino, Guttman, & Seely, 1986), consisting of recurrent parental attacks that serve to devalue, reject, ignore, and undermine a child’s development and emerging identity. More recent conceptualizations have suggested that emotional abuse exists on a continuum, highlighting the repetitive nature of the emotional pain inflicted on the child (e.g., despair, distress, fear, humiliation, dehumanization, etc.) as a crucial component of the definition (Kent & Waller, 2000; O’Hagan, 1995). For the purposes of the present study, emotional abuse will refer to “verbal assaults on a child’s sense of worth and well-being, or any humiliating, demeaning, or threatening behavior directed toward a child by an adult or older person” (CTQ; Bernstein & Fink, 1998, p.2). Since this definition refers exclusively to “active” abuse without accounting for emotional damage resulting from the absence of parental support and responsiveness, the present study will also consider the effects of what Bernstein and Fink (1998) refer to as emotional neglect. Childhood emotional neglect will include environments where a child’s basic psychological and emotional needs, including love, encouragement, and belonging fail to be provided (Bernstein & Fink, 1998, pg.2).

In addition to describing the obstacles associated with defining childhood emotional abuse, early research on psychological and emotional abuse attempted to dispel the myths that emotional abuse is fairly innocuous in comparison to other forms of abuse. Hart and Brassard (1987) argued that emotional abuse is the “core” issue in childhood trauma. Preliminary analysis exploring the long-term effects of psychological abuse revealed that even after controlling for other forms of maltreatment, paternal psychological abuse continued to be associated with later psychological difficulties including depression, anxiety, and dissociation (Briere & Runtz, 1988). A subsequent study conducted by the same researchers revealed a unique association between a

history of psychological abuse and low self-esteem. The authors posited that criticism and psychological attacks by one's parents resulting in low self-evaluation may occur because of a child's internalization of parental statements as a basis for self-perception (Briere & Runtz, 1990).

Even though trends in child maltreatment literature suggest that the percentages of articles examining emotional abuse remain consistently low, the research that has been done confirms what has long been hypothesized about the effects of emotional abuse and neglect (Behl et al., 2003). Emotional abuse in childhood has been identified as a risk factor for significant harm to a child's development, with increasing evidence suggesting that this harm has an enduring effect on adult functioning (Briere & Runtz, 1990; Finzi-Dottan & Karu, 2006; Gibb et al., 2001; Glaser, 2002; Hart, Binggeli, & Brassard, 1998; Messman-Moore & Brown, 2004; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Thompson & Calkins, 1996). However, it should be noted that because research on the long-term effects of emotional abuse remains in its infancy, some argue that much of what is known about the effects of emotional abuse pertain to its immediate consequences (i.e. academic underachievement, emotional instability) rather than its lasting effects (Kent & Waller, 2000).

Even though empirical support for the effects childhood emotional abuse on adult functioning continues to emerge, existing evidence suggests that a history of emotional abuse is associated with a range of psychological problems including increased anxiety (Spertus et al., 2003), depression (Gibb et al., 2001; Hankin, 2005; Maciejewski & Mazure, 2006), eating psychopathology (Gerke, Mazzeo, Kliewer, 2006; Kent & Waller, 2000), and personality disorders (Grilo & Masheb, 2002). In addition, a history of emotional abuse has also been linked to low self-esteem (Briere & Runtz, 1990; Finzi-Dottan & Karu, 2006; Mullen et al., 1995),

loneliness and social isolation (Loos & Alexander, 1997); decreased personal control (Finzi-Dottan & Karu, 2006), substance use severity (Hyman, Garcia, Sinha; 2006), lower self-rated health (Irving & Ferraro, 2006), and subsequent victimization (Messman-Moore & Brown, 2004; Rich et al., 2005).

Continued effort to elucidate the long-term effects of emotional abuse motivated Spertus and colleagues (2003) to examine the association between emotional abuse and neglect and present psychological and somatic symptomatology endorsed by 205 women presenting to a primary care practice. Results indicated that a history of emotional abuse and neglect was associated with increased anxiety, depression, posttraumatic stress, and physical symptoms, in addition to lifetime trauma exposure (Spertus et al., 2003). These findings are particularly noteworthy since hierarchical multiple regressions analyses demonstrated that emotional abuse and neglect predicted symptomatology when controlling for other types of abuse and trauma exposure. The authors suggest that this study may provide initial support for the relationship between emotional abuse and neglect and increased health care utilization, as has been previously established for survivors of physical and sexual abuse, and therefore should not be overlooked (Spertus et al., 2003).

Kent and colleagues (1999) provide additional support for the unique impact of childhood emotional abuse on adult functioning in their investigation of the relationship between child abuse and eating psychopathology in a non-clinical sample of women (Kent, Waller, & Dagnan, 1999). With the exception of sexual abuse, all forms of child abuse were independently associated with eating-disordered attitudes and behavior, however, only emotional abuse appeared to reliably predict eating psychopathology (Kent et al., 1999). Furthermore, the relationship between emotional abuse and eating psychopathology appeared to be perfectly

mediated by anxiety and dissociation (Kent et al., 1999). The authors suggest that these findings are not intended to undermine the effects of other forms of abuse, but rather suggest that the impact of other types of child maltreatment will appear most devastating when compounded simultaneously by emotional abuse (Kent et al., 1999).

In addition to research that supports the relationship between childhood emotional abuse and eating psychopathology, several studies suggest that emotional abuse is uniquely associated with depression (Gibb et al., 2001; Hankin, 2005; Kaplan & Klinetob, 2000; Maciejewski & Mazure, 2006; Mendelson, Robins, & Johnson, 2002; Rose & Abramson, 1992). According to Rose and Abramson (1992), emotional abuse, as opposed to other forms of abuse, is a particularly important predictor of the development of cognitive risk for adult depression because the abuser provides repetitive verbal attacks that serve as the foundation for the survivor's negative cognitions that contribute to depression. Although there is evidence that childhood sexual and physical abuse are risk factors for adult depression, it has been hypothesized that the cognitive schemas that may result from these forms of abuse are less likely to be structured by explicit, destructive messages directly supplied by the abuser (Rose & Abramson, 1992). Gibb and colleagues (2001) provided additional support for this theory when they found that childhood emotional, rather than physical or sexual, maltreatment was associated with hopelessness depression (HD) as well as nonendogenous major depression (NE-MD) (Gibb et al., 2001). A similar pattern of results has recently emerged further suggesting that emotionally abusive statements, distinctly characteristic of emotional abuse, supply direct causal explanations to the child regarding his or her self-worth and abilities, whereas children who experience physical or sexual maltreatment can attribute the events to other potential causes (Hankin, 2005; Rose & Abramson, 1992). Significantly greater levels of childhood emotional abuse have also

been shown to distinguish patients with treatment-resistant depression and chronic PTSD from patients with treatment responsive depression (Kaplan & Klinetob, 2000).

Finally, a thorough review of the detrimental effects of emotional abuse must include a discussion of neurodevelopment. Clinical studies provide evidence that a history of emotional abuse may significantly alter the neurobiology of stress response systems, with the potential to negatively influence other aspects of neurodevelopment and adaptation (e.g., synaptic pruning, dendritic branching, and neuronal demise; Sapolsky, 1996). The mammalian stress response is comprised of two primary systems: the limbic-hypothalamic-pituitary-adrenal (L-HPA) axis which is associated with slower acting stress response and the acute stress response system known as the norepinephrine-sympathetic-adrenal-medullary (NE-SAM) system (Gunnar & Cheatham, 2003; Lopez, Akil, & Watson, 1999). Empirical studies provide preliminary evidence that “recurrent patterns of hostile, indifferent, degrading, and unpredictable emotional exchanges in the caregiving milieu, as may typify instances of emotional abuse, will have negative and enduring effects on emerging stress response systems and adaptations” (Yates, 2007, p.9). Of the relatively few studies that have included childhood emotional abuse in investigations of stress responsivity, Bugental and colleagues (2003) reported that young children reared in emotionally abusive environments during their first year of life, displayed atypical elevations in basal levels of cortisol consistent with L-HPA axis dysregulation (Bugental, Martorell, & Barazza, 2003). Further support for the association between emotional abuse and increased L-HPA activity was provided by Yehuda and colleagues (2001) in their investigation of childhood trauma and PTSD in adult children of Holocaust survivors (Yehuda et al., 2001). In addition to evidencing significantly higher levels of childhood trauma, particularly emotional abuse and neglect, relative to comparison subjects, the descendents of Holocaust survivors exhibited significantly low

cortisol (Yehuda et al., 2001). In fact, PTSD and depression without co-occurring emotional abuse history was not related to decreased cortisol, suggesting that CEA is independently associated with cortisol (Yehuda et al., 2001). Low levels of cortisol in the immediate aftermath of trauma place trauma survivors at increased risk for developing PTSD (Yehuda et al., 2001, 2007; Yehuda, McFarlane, & Shalev, 1998).

Summary of the Effects of Child Maltreatment

The above literature review enumerating empirically supported consequences of childhood emotional abuse provides substantial evidence for the importance of including emotional abuse and neglect in studies aimed at elucidating the devastating effects of child maltreatment. As demonstrated by the review of outcomes associated with childhood sexual and physical abuse, a history of emotional abuse may initiate a diverse array of potentially harmful consequences even when controlling for the effects of other forms of maltreatment. With a range of psychological difficulties associated with multiple forms of child abuse, there remains a growing need to identify intervening variables that may better explain the relationship between child abuse and adult psychopathology.

Emotion Regulation

Definitional Considerations

Burgeoning support for emotion regulation, also referred to as emotion dysregulation, as a potential explanation for widespread maladjustment can be found throughout the extant literature. However, several researchers operating from diverse orientations continue to debate the viability of emotion regulation as a scientific construct, and therefore ambiguity still plagues its definition (Cicchetti, Ackerman, & Izard, 1995; Cole, Martin, & Dennis, 2004; Gross, 1998; Putnam & Silk, 2005). In an attempt to resolve definitional issues, a number of models of

emotion regulation have been proposed (Campos, Frankel, & Camras, 2004; Gross, 1998; Thompson, 1994). Before describing the core features proposed in various models of emotion regulation, the construct of emotion regulation must be distinguished from that of emotion (Cole et al., 2004). Again there is no consensus regarding the definition of emotion, however, most emotion theories describe emotions as necessary tools utilized in the appraisal of situations that serve to motivate our actions or responses (Cole et al., 2004). Furthermore, emotions are multifaceted, generally involving cognitive, behavioral, and physiological components (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). Gross and Thompson (2007) proposed a modal model of emotion that highlights the interaction between situation, attention, appraisal, and response (Gross & Thompson, 2007). It has been posited that emotions are inherently regulatory (Campos et al., 2004; Izard & Ackerman, 2000), yet others have suggested that emotions have different effects depending on how they are regulated (Cole et al., 2004).

Theoretical Conceptualizations of Emotion Regulation

Similar to definitions of emotion, conceptualizations of emotion regulation differ to some extent as evidenced by contrasting models depicted within the literature. Although a comprehensive analysis of competing models of emotion regulation is beyond the scope of this review, the central differences between theories of emotion regulation will be highlighted. Some conceptualizations of emotion regulation underscore the control of emotional experiences and expression, especially negative emotions (Cortez & Bugental, 1994, Garner & Spears, 2000), while other conceptualizations emphasize the distinction between emotion regulation and emotional control, by suggesting that the two terms are not synonymous (Cole, Michel, & Teti, 1994; Thompson, 1994). In fact, mounting empirical evidence suggests that reduced capacity to experience and differentiate between different emotion states is inherently dysregulating, thereby

indicating that adaptive emotion regulation strategies must involve attending to and evaluating emotional experiences in addition to modulating the intensity of the emotion (Cole et al., 2004; Gross & Munoz, 1995; Thompson & Calkins, 1996). Furthermore, it appears that attempts to control emotional expression may actually increase physiological arousal (Notarius & Levenson, 1979; Gross & Levenson, 1997), which in turn may increase risk for emotion dysregulation, as higher levels of arousal are believed to be harder to regulate (Eisenberg, Cumberland, & Spinrad, 1998; Flett, Blankstein, Obertynski, 1996).

In response to the detrimental effects associated with controlling emotions, some conceptualizations emphasize the importance of emotional acceptance (Cole et al., 1994; Linehan, 1993). Research has provided support for accepting and valuing emotional responses by indicating that the inclination to respond negatively to one's emotional reactions may be associated with greater difficulties in emotion regulation (Cole et al., 1994; Hayes, Strosahl, & Wilson, 1999; Linehan, 1993; Paivio & Greenberg, 1998).

In addition to the emphasis on awareness, understanding, and acceptance of emotions as integral components of adaptive emotion regulation, consideration of the demands of the environment with respect to individual goals must also be included in a comprehensive analysis of emotion regulation (Gross & Thompson, 2007; Thompson, 1994; Thompson & Calkins, 1996). Understanding the specific emotion regulation strategies employed by individuals requires additional information about the context with which the strategies are implemented. Without considering the environmental factors and individual goals that likely moderate successful emotion regulation, little is known about the effectiveness of individual regulatory strategies (Cole et al., 1994; Gratz & Roemer, 2004; Thompson, 1994).

Finally, a thorough understanding of the conceptualizations of emotion regulation must reference the modulating of emotions, a central component of effective emotion regulation strategies. Specifically, adaptive emotion regulation involves modifying the duration or intensity of the emotion so that the experience of the emotion (positive or negative) is more easily managed or regulated (Gross & Thompson, 2007; Thompson, 1994). Successful modulation, rather than elimination, of the emotion increases an individual's ability to control his or her own behavior, rather than controlling the emotion itself (Gratz & Roemer, 2004). The ability to inhibit destructive or impulsive behavior in response to intense emotions by instead engaging in behavior consistent with desired goals remains an important element of adaptive emotion regulation (Gratz & Roemer, 2004; Linehan, 1993; Melnick & Hinshaw, 2000).

To summarize, emotion regulation involves (a) the awareness and understanding of a range of emotions, (b) the acceptance of emotions regardless of their association, (c) the ability to inhibit impulsive behaviors when experiencing a negative emotions so as to behave in congruence with desired goals, and (d) the ability to apply situationally appropriate emotion regulation strategies to modulate emotional responses in accordance with environmental demands or individual goals (Gratz & Roemer, 2004; Saarni, 1999). Similar to Saarni's (1999) definition of "emotional competence," the inability to successfully employ one or more of the above strategies would suggest difficulties in emotion regulation, or emotion dysregulation (Gratz & Roemer, 2004).

Although the discussion of current conceptualizations of emotion regulation might insinuate that emotion regulation is always a deliberate and conscious process, it is important to acknowledge that emotion regulatory processes that are initiated intentionally have the potential to later occur without conscious awareness (Gross & Thompson, 2007; Masters, 1991). Gross

and Thompson (2007) prefer to conceptualize emotion regulation strategies as part of a continuum, with conscious, effortful, and controlled regulation on one end and unconscious, effortless, automatic regulation on the other (Gross & Thompson, 2007). Moreover, helping individuals become more aware of their potentially unconscious emotion regulation strategies may be an integral part of treatment.

Emotion Regulation and Mental Health

Even though debates continue regarding the construct of emotion regulation, Gross and Munoz (1995) argue that emotion regulation is an essential ingredient of mental health that has traditionally received little attention. Given that effective emotion regulation is associated with positive mental health, it is not surprising that initial research has linked emotion dysregulation with anxiety and mood disorders in general (Campbell-Sills & Barlow, 2007), and generalized anxiety disorder (Mennin, Heimberg, Turk, & Fresco, 2002), complex posttraumatic stress disorder (Cloitre, 1998), and major depression (Gibb et., al, 2001; Hankin, 2005; Maciejewski & Mazure, 2006) specifically. Difficulties in emotion regulation have also been associated with substance abuse (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996), dissociative symptoms (Briere, 2006), deliberate self-harm (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006, Gratz, & Chapman, 2007), eating disorders (Sim & Zeman, 2006; Whiteside et al., 2007), and borderline personality disorder (Linehan, 1993; Gratz, et al., 2006). Although emotion-related problems are discussed in the context of numerous clinical disorders, the most comprehensive investigation of the relationship between emotion dysregulation and psychopathology has been Linehan's theoretical work on the development of borderline personality disorder (BPD; Linehan, 1993). Linehan suggests that the "affective instability" characteristic of BPD results from ineffective regulation of emotions, particularly anger, depression, and hopelessness.

Linehan (1993) describes the self-harm and parasuicidal behavior typical of borderline patients as attempts at emotion regulation, a notion that has received theoretical and empirical support (see Briere & Gil, 1998; Gratz et al., 2006). In an attempt to investigate emotion dysregulation in individuals with BPD, Gratz and colleagues (2006) examined two aspects of emotion dysregulation: (a) the unwillingness to experience emotional distress in order to engage in goal-directed behavior and (b) the inability to pursue goal-directed behavior when distressed. Results indicated that participants were less inclined to tolerate distress in order to pursue goal-related behavior. However, contrary to expectations, BPD participants did not demonstrate increased difficulty in goal-directed behavior when experiencing negative emotions, although refusal to accept emotions was marginally related to poorer performance on one of the goal directed tasks (Gratz et al., 2006).

The most recent study to examine the relationship of specific dimensions of emotion dysregulation (also using Gratz and Roemer's (2004) comprehensive conceptualization of emotion dysregulation), to psychological difficulties, investigated posttraumatic stress (PTS) symptoms among trauma-exposed undergraduate students. Several emotion regulation difficulties were associated with PTS symptom severity, including emotional nonacceptance, difficulty engaging in goal-directed behavior when upset, impulse-control difficulties, diminished access to effective emotion regulation strategies, and decreased emotional clarity (Tull, Barrett, McMillan, & Roemer, 2007). Although after controlling for negative affect, only difficulties in impulse-control, diminished access to effective emotion regulation strategies, and lack of emotional clarity remained significant predictors of PTS symptom severity. These findings provide support for the notion that difficulties in emotion regulation may indirectly influence the maintenance of trauma symptoms because trauma-exposed individuals, faced with

emotionally evocative events and their associated memories, experience difficulties in emotion regulation which serve to exacerbate their symptoms. Increased posttraumatic symptomatology results in increased physiological arousal, perpetuating the cycle of dysregulation since increased arousal is harder to regulate (Tull et al, 2007).

More recently, difficulties in emotion regulation have been applied to child psychopathology. Facilitated by a developmental psychology perspective in which normal and abnormal development of emotion regulation trajectories are studied simultaneously, studies have discovered a link between emotion regulation deficits and a range of externalizing behaviors (Mullin & Hinshaw, 2007). Poor emotion regulation, especially emotional reactivity, has been associated with conduct problems and aggression (Caspi, 2000; Eisenberg et al., 2001; Hubbard et al., 2002; Shields & Cicchetti, 1998). However a noteworthy distinction between proactive and reactive aggression has been made within the literature, suggesting that high levels of negative reactivity and emotion dysregulation are associated with reactive rather than proactive aggression (Hubbard et al., 2002, Shields & Cicchetti, 1998). More specifically, children with reactive aggression evidence sociocognitive biases that are believed to diminish their capacity to attend to or correctly interpret social cues, decreasing their emotion awareness, a central component of emotion regulation (Dodge, Pettit, & Bates, 1994). In addition to the empirically supported relationship between aggression and emotion dysregulation, there is emerging evidence that poor emotion regulation may be associated with the disinhibitory problems characteristic of attention-deficit/hyperactivity disorder (ADHD) and well as types of antisocial behavior (Barkley, 1997; Olson et al., 2005; Silk, Steinberg, & Morris, 2003).

Effects of Child Maltreatment on Emotion Regulation

With growing empirical support for the existence of emotion regulation difficulties underlying several clinical disorders common to both children and adults, it appears necessary to question the processes by which emotion regulation deficits develop. Although there may be several convergent pathways resulting in emotion dysregulation, child maltreatment has recently been suggested as one potential pathway.

Developmental Psychopathology Perspective

A handful of related theories have been proposed to support the relationship between child abuse and emotion regulation, many of which reference the developmental psychopathology literature. While traditional viewpoints often depict psychopathology and mental illness as inherent deviations within the individual, developmental psychopathologists focus on the interplay between the individual and his or her internal and external environment to understand maladjustment (Cicchetti & Toth, 2005; Sameroff, 2000). Furthermore, individual development is thought to be best informed by considering both normative processes and its aberrations (Cicchetti & Stroufe, 2000).

Ecological-Transactional Model.

Cicchetti and Lynch (1993) developed an ecological-transactional model as a framework to examine the processes present at each level of what they term the “social ecology” (i.e., culture, community, and family) that influences development (Cicchetti & Lynch, 1993). When the risk factors associated with maltreatment overwhelm existing protective factors, maltreated children deviate from normal developmental trajectories and increase their likelihood for subsequent psychopathology (Cicchetti & Stroufe, 2000). Abuse at any age has the potential to prohibit the acquisition of important developmental milestones. However, because each

developmental stage incorporates the skills acquired during the previous stage by means of hierarchical integration, child abuse has enduring and cumulative effects on subsequent adjustment (Cicchetti, 1993; Sroufe & Rutter, 1984). Although a comprehensive review of each developmental stage believed to influence emotion regulation is beyond the scope of this review, the development of attachment relationships and self-system processes appear to be particularly salient in the development of emotion regulation skills.

Attachment Theory

According to Bowlby's attachment theory, the "internal working model" refers to cognitive representations of the self and the caregiver that manifest through repeated early interactions between parent and child (Bowlby 1982, Calkins & Hill, 2007). These early interactions determine the child's expectations regarding his or her emotional responding and the likelihood that the parent will successfully intervene to manage affective responses. Sensitive caregiving in combination with a child's own self-regulatory abilities facilitate secure attachment. However when this normative process is disrupted by an abusive environment, insecure attachment often results. In fact, empirical studies suggest that maltreated infants evidence insecure attachment at rates as high as 95% (Carlson et al., 1989). The open and safe expression of both positive and negative emotions communicated to securely attached children is absent from environments characterized by abuse and neglect. Consequently, the abused child learns to amplify his or her distress in an effort to receive attention. However, if this exaggerated behavior also fails to elicit attention, the child may respond by inhibiting his or her emotional expression altogether (Calkins & Hill, 2007). As previously mentioned, emotional inhibition, a key component of emotion dysregulation has been shown to increase physiological arousal, which may compromise effective emotion regulation.

Self-System Processes

Following the formation of attachment relationships, children endure the next crucial developmental stage which involves the separation of the child (often referred to as the self) from the caregiver. Nurturing environments promote disconnection by facilitating the establishment of the child's independent sense of self capable of autonomous functioning (Sroufe, 1979). Consequently a maltreated child, whose need for autonomy is not respected by sensitive caregivers, is at heightened risk for maladaptive self-development (Cicchetti & Lynch, 1993). Although there is no evidence that maltreated toddlers have difficulty recognizing themselves (Schneider-Rosen & Cicchetti, 1991), maltreated toddlers have demonstrated neutral or negative affect upon seeing themselves in the mirror, believed to be a potential precursor for low self-esteem (Cicchetti & Lynch, 1993). Delays in the self system of maltreated children are evident in additional ways, including limited access to adjectives to describe the feelings of self and other, and increased reference to negative representations of self and caregivers when storytelling (Cicchetti, 1993; Toth et al., 1997, 2000). A child with low self-esteem who appears overwhelmed with negative emotions is likely to evidence increased difficulty implementing successful emotion regulation strategies.

As suggested above, disturbed attachment and self-system processes characteristic of maltreated children appear to greatly impact the development of appropriate emotion regulation skills. Many maltreated children display considerable deficits in the recognition, expression, and understanding of emotions all considered integral parts of emotion regulation (for a review, see Camras et al., 1996; Cicchetti & Lynch, 1993).

Resource Loss Model of Childhood Trauma

Grounded in developmental theory, Cloitre and colleagues (2006) propose a resource loss model of childhood trauma (Cloitre, Cohen, & Koenen, 2006). The potential short and long-term resource losses characteristic of child abuse can be organized into three categories including, loss of healthy attachment, loss of effective guidance in the development of emotional and social competencies, and loss of support and connection to the larger social community (Cloitre et al., 2006). The psychological trauma that results from childhood sexual and physical abuse overwhelms a child's capacity to protect his or her wellbeing. Childhood trauma is particularly devastating because resources available to children in general are limited by their life stage. However in the presence of abuse, a cascade of lost resources is created in the context of an already vulnerable developmental period. Moreover, the resource loss is further compounded by abuse that takes place within the home. If the child's home is a source of injury, as opposed to a necessary safe haven, the child is forced to depend on the very individuals committing violence. Consequently, the abused child is rendered helpless when confronted with repeated sexual and physical abuse. Based on the conceptualization of the resource loss model, Cloitre and colleagues developed a treatment guided by the concept of the "interrupted life" of child abuse survivors which focuses on replacing the resources never internalized in childhood. A major focus of the treatment centers on cultivating emotional competency, achieved through emotional awareness, acceptance, and modulation of both positive and negative feelings in an effort to attain emotionally engaged living (i.e. emotion regulation) (Cloitre et al., 2006). Although the *Resource Loss Model* specifically refers to the consequences associated with childhood physical and sexual trauma, intuitively the model can be applied to survivors of emotional abuse and neglect given its equally devastating effects as previously reviewed.

Invalidating Environment Perspective

Finally, a review of commonly cited theoretical models utilized to support the relationship between early abuse and emotion dysregulation is not complete without reference to Linehan's conceptualization of BPD and the role of the *invalidating environment*. Linehan (1993) describes the invalidating environment as an environment where private experiences (i.e. emotional experiences) are not appropriately validated and are instead disregarded, trivialized, or punished. Invalidation serves to undermine the individual's attempt to describe and interpret his or her emotional experience and ability to identify the source of distress. This causes the individual to not only question his or her ability to accurately identify emotions, but also teaches the individual to attribute his or her emotional experience to socially unacceptable characteristics or deficient personality traits (Linehan, 1993). For example, the individual receives feedback from the surrounding environment in any number of the following ways, that the individual, (a) does not feel what he or she describes (e.g. "You're not angry"), (b) should not feel the way he or she does (e.g. "Don't be sad"), (c) feels what he or she does not endorse ("You are angry, but you won't admit it"), and/or (d) likes or prefers what he or she does not (When he or she says no, he or she means yes"). Furthermore, invalidating environments frequently communicate the attitude that "you can pull yourself up by your bootstraps" promoting the idea that failure of any kind, emotional or otherwise, reflects inadequacy on the part of the individual rather than a result of the environment. Because invalidating environments are often intolerant of negative affect, individuals learn to suppress or inhibit their negative emotions which, as previously mentioned, results in increased physiological reactivity and subsequent difficulties in emotion regulation.

In an effort to further portray the invalidating environment, Linehan (1993) exemplifies sexual abuse (as well as physical abuse because of the positive correlation between the two types of abuse) as a prototypical invalidating environment. Although no explicit reference is made to

the invalidating nature of emotional abuse, it appears that the very definition of an invalidating environment is remarkably similar to the defining features of emotional abuse (i.e. verbally attacks of a threatening, humiliating, and/or demeaning nature). Therefore it seems appropriate to extend Linehan's theory of the emotionally invalidating environment to CEA and its consequences.

Biological Perspective

In addition to the environmentally based models outlined above, it is important to reiterate the influence of biologically-based theories of emotion regulation. Continuous trauma may produce enduring psychological vulnerability by adversely affecting the brain's stress response systems. As a result, child abuse survivors may experience increased arousal and emotional sensitivity rendering them increasingly vulnerable to emotion dysregulation (Bugental et al., 2003). For a more thorough review of brain alterations that may result from childhood trauma and adversely effect emotion regulation, refer to the discussion of neurodevelopment previously described.

Emotion Regulation Difficulties in Maltreated Children

Recent research has demonstrated that maltreated children display greater emotion regulation difficulties than non-maltreated peers. In a multi-method study examining the socialization of children's emotion regulation in physically maltreating and non-maltreating mother-child dyads, results confirmed that maltreated children between the ages of six and twelve displayed fewer adaptive emotion regulation skills resulting in increased emotion dysregulation compared to same age children without physical abuse histories (Shipman, Schneider, Fitzgerald, Sims, Swisher, & Edwards, 2007). Specifically, maltreated children

demonstrated less situationally appropriate emotional displays, decreased empathy and emotional self-awareness, and greater emotional lability and negativity (Shipman et al., 2007).

These recent findings confirm past research identifying emotional and behavioral difficulties associated with maltreated children as the result of underlying emotion regulation difficulties (Kolko, Brown, & Berliner, 2002; Shipman, Schneider, & Brown, 2004). For example, in a study examining regulatory problems in impoverished inner-city children (mean age= 8 years, 8 months) exposed to multiple forms of child maltreatment (i.e. childhood sexual, physical, and emotional abuse and neglect), results revealed that maltreated children were more likely to exhibit aggression, while physical abuse survivors in particular evidenced increased risk for reactive aggression, an association that was mediated by emotion dysregulation (Shields & Cicchetti, 1998). In addition, children classified by Child and Family Services (CFS) as physically abused and neglected exhibit dysregulated emotional patterns that have been shown to mediate the relationship between abuse and symptoms of anxiety and depression (Maughan & Cicchetti, 2002).

Research investigating emotion dysregulation among sexually maltreated children in particular (as opposed to children exposed to other forms of maltreatment), has produced similar results. It has been hypothesized that sexual abuse experiences inhibit children's expression of certain emotions, particularly those that may be unacceptable within the abusive environment (Cole et al., 1994). Providing empirical support for this hypothesis, Shipman and colleagues (2000) compared twenty-one sexually maltreated girls between the ages of six and twelve years recruited from CPS to nonmaltreated peers on dimensions of emotional regulation. Sexually abused girls exhibited limited emotional awareness and decreased capacity to regulate their emotions appropriately when compared to nonmaltreated peers (Shipman, Zeman, Penza, &

Champion, 2000). Specifically, maltreated girls displayed higher levels of affective lability and negativity, fewer situationally appropriate emotional displays, and reported inhibiting the expression of anger to a greater degree than nonmaltreated peers (Shipman et al., 2000). As stated previously, there is considerable evidence that emotional suppression or inhibition is often counterproductive and results in a paradoxical increase in physiological arousal and emotional intensity (Gross & Levenson, 1997; Krause, Mendelson, & Lynch, 2003).

Supported by the above mentioned studies emanating from the developmental literature, research examining emotion regulation difficulties among adult survivors of child abuse has generated similar findings. Adults endorsing a history of maltreatment demonstrate experiential avoidance (i.e. attempts to avoid unwanted internal experiences; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). In an effort to avoiding unwanted emotions, many adult abuse survivors engage in numerous destructive behaviors in attempt to regulate their emotions, including substance abuse, sexual promiscuity, deliberate self-harm, dissociation, disordered eating, and parasuicidal behaviors in an effort to alleviate or avoid overwhelming psychological distress (Briere, 2003; Gratz & Chapman, 2007; Linehan, 1993). Support for the use of self-harm as a regulatory process is provided by a recent study of male undergraduate students which demonstrated that childhood physical abuse and emotion dysregulation reliably distinguish men who frequently engage in deliberate self harm (DSH) from men without DSH (Gratz & Chapman, 2007). Although these avoidant coping strategies provide initial relief from overwhelming negative affectivity, these strategies ultimately serve to increase the intensity of negative affect and heighten physiological arousal (Marx, Heidt, & Gold, 2005).

However, despite considerable theoretical evidence for the role of experiential avoidance as risk factor for abuse-related psychopathology (Walser & Hayes, 1998), until recently, few

studies have provided empirical support for this relationship (Gratz, Bornova, Delany-Brumsey, Nick, & Lejuez, 2007). Moreover, what factors or mechanisms increase experiential avoidance? Researchers have recently identified emotional nonacceptance (one potential facet of emotion dysregulation; Gratz & Roemer, 2004), conceptualized as negative reactions to one's own emotions, to explain the association between child maltreatment and experiential avoidance. Specifically, utilizing 76 inpatient residents in a drug and alcohol abuse treatment center (selected for presumed heightened levels of child maltreatment and related psychopathology), results indicate that participants with moderate-severe sexual, physical, and emotional abuse evidenced increased levels of experiential avoidance (measured as unwillingness to persist on two psychologically distressing laboratory tasks) than participants endorsing low or no childhood abuse history (Gratz et al., 2007). Findings also suggest a relationship between childhood abuse and emotional nonacceptance. Individuals with moderate-severe childhood sexual, physical, and emotional abuse evidenced increased emotional nonacceptance (compared to individuals reporting none-low abuse). However, only sexual and emotional abuse were uniquely associated with emotional nonacceptance after controlling for major depression. Although the authors of the study hypothesized that both sexual and emotional abuse would increase the experiential avoidance through their associations with emotional nonacceptance, the mediational model only proved significant for emotional abuse. In an effort to interpret this finding, it was hypothesized that emotional abuse, characterized by invalidation, shame, and invalidation of one's emotional experiences, may be a specific risk factor for emotional nonacceptance since explicit instruction and modeling of nonacceptance embodies this form of abuse (Gratz et al., 2007).

Cloitre and colleagues (2005) have also provided empirical support for the association between childhood abuse and emotion dysregulation. Specifically, they sought to extend the

association between childhood sexual and physical abuse and emotion dysregulation in adulthood by investigating the relative contribution of emotion regulation and interpersonal functioning in predicting functional impairment. In a sample of treatment-seeking women, hierarchical regression analyses revealed that emotion regulation and interpersonal functioning predicted functional impairment beyond the effects of PTSD symptom severity (Cloitre et al., 2005).

Certainly, studies investigating the effects of sexual and physical maltreatment on emotion regulation are far more prevalent than studies considering the effects of emotional abuse on emotion regulation. Yet as indicated above, emotional abuse was the only form of childhood abuse that was significantly associated with experiential avoidance by way of emotional nonacceptance. Furthermore, within the developmental literature where child participants are examined exclusively, of the studies that have attempted to examine other forms of maltreatment in addition to sexual and physical abuse, many have limited their investigation to verbal threats, or have decided to group emotional maltreatment with all abuse types. For example, violent victimization, which was comprised of physically abused and verbally threatened children, was associated with negative social outcomes through the mediation of emotion dysregulation (Schwartz & Proctor, 2000). In another study where child maltreatment included sexual and physical abuse, emotional maltreatment, and neglect, maltreated children showed increased propensity toward bullying and victimization, an association that was once again mediated by emotion dysregulation (Shields & Cicchetti, 2001).

Although few studies have investigated the specific contribution of childhood emotional abuse to emotion dysregulation, a weak, but significant relationship between emotional abuse, in particular, and disordered eating appears to be mediated by alexithymia and general distress

(Hund & Espelage, 2006). Alexithymia, a term used to describe individuals who demonstrate deficiencies in understanding, processing, or describing their emotions, may be subsumed under the broader construct of emotion regulation since emotional awareness and clarity are integral parts of emotion regulation. Additionally, Paivio and Chantal (2004) found support for the mediating influence of alexithymia on the relationship between a history of child maltreatment and self-injurious behavior.

One of the few studies to date that has included variations of the three variables of interest in the current study was conducted by Krause, Mendelson, and Lynch (2003). More specifically, they examined one component of emotion dysregulation, emotional inhibition, to see if it mediates the relationship between emotional invalidation (comprised of negative emotion socialization and psychological abuse) and adult psychological distress (i.e., symptoms of depression and anxiety). Using structural equation modeling, support was found for a model in which emotional inhibition mediates the relationship between retrospective self-reported emotional invalidation and acute psychological distress in adulthood (Krause, Mendelson, & Lynch, 2003). Although it is important to note that the variables of interest (i.e., emotional invalidation, emotional inhibition, and psychological distress) are slightly different than those proposed in the current study, this study provided preliminary support for the emotion dysregulation as a mediator between child maltreatment and adult psychopathology.

Empirical support for the association between child maltreatment and emotion dysregulation continues to grow, yet studies investigating this relationship among adult survivors appears considerably further behind the developmental literature utilizing maltreated children as participants. Furthermore, research examining the contribution of multiple forms of childhood abuse, particularly emotional abuse, remains limited when compared to studies involving sexual

abuse survivors in particular. Finally, no studies to date have included a comprehensive measure of emotion regulation as mediator between child maltreatment and posttraumatic stress.

CHAPTER 2

RATIONALE AND HYPOTHESES

Purpose and Significance

The purpose of this project was to determine the unique and collective impact of multiple forms of abuse on emotion regulation. In addition to investigating the relationship between child maltreatment and emotion regulation, this study examined whether emotion regulation mediated the relationship between child maltreatment and posttraumatic symptomatology.

This study is important for several reasons. First and foremost, more than three million children are reported abused and neglected each year in the United States (Fromm, 2001). This number is alarming itself, yet it is likely that many acts of violence against children remain unreported and therefore the number of maltreated children may be even higher than estimated. Abused and neglected children are at increased risk for a range of adjustment difficulties and potentially serious psychological disorders in adulthood. Consequently, there remains an imminent need to increase our understanding of the multitude of pathways that result in maladjustment in an effort to illuminate potential areas for intervention. By establishing viable intervention points, the course from abuse and neglect to subsequent maladjustment may be interrupted before severe consequences result. In situations where psychological difficulties have already been firmly established, understanding the course of abuse and the developmental processes that may be affected will inform treatment decisions and increase our ability to effectively treat child abuse survivors.

Given that emotion regulation has been recently proposed within the literature as a potential explanation for various forms of psychopathology, it is important to examine the effects of multiple forms of child abuse on emotion regulation. Of particular importance is the relationship between emotional abuse and emotion regulation, since few studies to date have investigated this association. Because initial research on the immediate and long-term effects of emotional maltreatment suggest that this form of abuse may have equally negative consequences as those associated with a history of sexual and physical abuse, it remains important to consider the unique contribution of emotional abuse when examining the sequelae of abuse.

Although both men and women suffer with the enduring effects of child abuse, this study investigated the relationship between child maltreatment, emotion regulation, and symptoms of posttraumatic stress in a sample of female undergraduates exclusively. The rationale for selecting only female participants was in part based on the higher prevalence rates of abuse among women, particularly childhood sexual abuse, and based on previous research that suggests that men may underreport abuse experiences. If hypothesized relationships are supported, follow-up studies should investigate similar relationships among men.

Constructs

The constructs relevant to this study included childhood sexual abuse, childhood physical abuse and neglect, childhood emotional abuse and neglect, emotion regulation, and posttraumatic stress. They were operationalized based on existing theory and research in order to test specific hypotheses.

Childhood Sexual Abuse

Childhood sexual abuse was defined as sexual activities occurring before age 18 that were perceived as unwanted, coercive, or that involved an individual that was significantly older.

Sexual activities included kissing, fondling, exposure, oral intercourse, vaginal intercourse, and/or anal intercourse.

Childhood Physical Abuse & Neglect

Childhood physical abuse was defined as bodily assaults or attacks directed toward a child under the age of 18 by an adult that posed a risk of, or resulted in, injury or harm.

Childhood physical neglect referred to a parent or caregiver's failure to provide a child with basic physical needs including food, shelter, safety, and health.

Childhood Emotional Abuse & Neglect

Childhood emotional abuse was defined as humiliating, demeaning, or threatening verbal attacks directed toward a child under the age of 18 by an adult. The emotionally abusive behavior committed by an adult serves to undermine a child's sense of worth or well-being.

Since the definition for emotional abuse was limited to the more active components of emotional maltreatment, emotional neglect was also examined. Emotional neglect included the inadequate provision of a child's basic psychological and emotional needs (e.g. love, support, encouragement, and belonging) by an adult or caregiver.

Emotion Regulation

An integrative conceptualization of emotion regulation involving not only the modulation of emotions, but also the awareness, understanding, and acceptance of a range of emotions (Gratz & Roemer, 2004) was assessed. In addition, effective emotion regulation also included the ability to act in accordance with goals regardless of emotional state.

Posttraumatic Stress

Since child maltreatment has been associated with a range of trauma symptoms and associated psychopathology, including anxiety, depression, PTSD, eating disorders, substance

abuse, and dissociative disorders (for a review see Mulvihill, 2005), a more general measure of trauma symptoms was utilized to assess a range of psychological impacts.

Hypotheses

Based on existing research and theory, four hypotheses were examined in this study.

Hypothesis 1

It was hypothesized that participants reporting low, moderate, or severe child abuse would evidence greater emotion dysregulation compared to participants reporting none-minimal abuse. Based on theoretical models previously outlined, including the *Ecological-Transactional Model*, the *Resource Loss Model of Childhood Trauma*, and Linehan's *invalidating environment*, there appears to be a connection between child maltreatment and emotion regulation. Broadly conceptualized, child abuse represents a traumatic life experience that disrupts normal child development by forcing a child to cope with extreme circumstances that overwhelm a child's existing resources or protective factors. Since children, especially younger children, already possess limited resources because of their life stage, abused children are further handicapped by the inadequacies of their environment. Since important developmental milestones include the acquisition of emotion regulation skills, children subjected to abuse often miss the opportunity to develop these skills or instead develop ineffective strategies. Furthermore, since abused children are exposed to traumatic events that elicit a range of intense emotions, these children are highly dependent on their ability to engage in emotion regulation as a means to cope with their abuse. Unfortunately for the reasons enumerated above, abused children learn and develop in environments lacking appropriate role models who demonstrate effective emotion regulation. Instead maltreated children are exposed to adults who themselves are often emotionally dysregulated. Therefore, it was hypothesized that maltreated children would have greater

emotion regulation difficulties than children who are raised in nurturing environments where effective emotion regulation was modeled and supported.

Hypothesis 2

It was hypothesized that each type of maltreatment (i.e. Childhood Sexual Abuse, Childhood Physical Abuse and Neglect, and Childhood Emotional Abuse and Neglect) would be significantly associated with difficulties in emotion regulation. Similar to the rationale for the above hypothesis, child maltreatment would be significantly related to difficulties in emotion regulation because the abuse experience interrupts the acquisition of important development milestones, particularly emotion regulation. Based on previous research which has confirmed that sexual and physical abuse survivors, in particular, exhibit a decreased capacity to regulate their emotions appropriately, it was hypothesized that this study would replicate past findings. However, because this study utilized a more comprehensive conceptualization of emotion regulation than previous studies have employed, it was important to further test this relationship. Given the possibility that certain aspects of emotion regulation (i.e. emotional awareness, nonacceptance of emotions, etc.) could have been more strongly related to particular types of abuse, no specific hypotheses were made regarding the association between different forms of abuse and the six domains of emotion regulation.

Although previous research had connected childhood emotional abuse to limited emotional awareness and clarity, no previous study had examined the association between emotional abuse and a more comprehensive conceptualization of emotion regulation (as measured by the DERS). However as suggested above, a history of emotional abuse may be conceptualized as a distal risk factor that like other forms of abuse described in the above models, jeopardizes a child's ability to acquire appropriate emotion regulation strategies.

Therefore, it was hypothesized that emotional abuse would be significantly associated with difficulties in emotion regulation.

Hypothesis 3

It was hypothesized that a history of emotional abuse would be the strongest predictor of difficulties in emotion regulation. It was predicted that emotional abuse would explain the most variance in emotion dysregulation over and above the impact of other forms of maltreatment. The rationale for this hypothesis was supported by the assertion that emotionally abusive statements, distinctly characteristic of emotional abuse, supply direct causal explanations to the child regarding his or her self-worth and abilities, whereas children who experience physical or sexual maltreatment could attribute the events to other potential causes (Hankin, 2005; Rose & Abramson, 1992). Emotionally damaging statements, often products of environments deficient in protective factors such as love and support, are internalized by these children and result in low self-evaluation. A child who defines his or her self-worth in terms of the feedback he or she receives from the surrounding environment, especially from parents or caregivers who are supposed to provide unconditional love, is likely to believe that he or she is incapable of managing his or her emotions and engaging in successful emotion regulation.

Furthermore, since emotional abuse, as opposed to sexual and physical abuse, has only recently been recognized as a significant form of child maltreatment with potentially devastating consequences, individuals with emotional abuse histories may not realize the seriousness of their abuse and therefore may be more likely to attribute their psychological distress to personal deficiencies rather than consequences of their environment. By attributing emotionally abusive experiences to internal causes, emotional abuse survivors may never seek help, tolerating more subtle abuse that may undermine the development of appropriate emotion regulation strategies.

Hypothesis 4

The relationship between child maltreatment and posttraumatic stress would be *partially* mediated by emotion regulation difficulties. It was hypothesized that childhood sexual, physical, and emotional abuse are each significantly associated with emotion regulation difficulties. Since a strong correlation was necessary to test mediation, emotion regulation was hypothesized to play a mediating role in the relationship between child maltreatment and posttraumatic symptomatology as measured by the Trauma Symptom Inventory (Briere, 1995). As previously discussed, each form of child maltreatment has been associated with an array of adult psychopathology and it is believed that the diversity in symptom presentation may be a result of underlying emotion regulation difficulties that manifest in a number of psychological disorders.

CHAPTER 3

METHOD

Participants

Participants were 912 female students recruited from introductory psychology classes through the research pool. Participation in the current study partially fulfilled a research requirement; however, students were also given the opportunity to participate in library research to fulfill their research requirement. The mean age for participants was 19.0 years ($SD=1.63$, range = 18-42). With regard to racial/ethnic background, the majority of the women self-identified as White (79%). Of the remaining women, 9.8% identified as African-American, 8.5% as Asian or Pacific Islander, and 2.3% as Hispanic or Latino. Most of the women (98.6%) had never been married. Yet, 52.8% endorsed current involvement in a romantic relationship. In regards to religious affiliation, 59.1% of the participants endorsed being Protestant, 14.3% Catholic, and 13.8% nonaffiliated. Of the participants, 97.3% reported being exclusively or mostly heterosexual, and 2.7% reported being mostly or exclusively homosexual.

Measures

Child Maltreatment

Childhood Trauma Questionnaire.

The Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998) is a 28-item retrospective self-report questionnaire designed to assess five types of childhood maltreatment in the following areas: sexual abuse, physical abuse and neglect, and emotional abuse and neglect. The sexual abuse subscale assesses “sexual contact or conduct between a child younger than 18

years of age and an adult or older person” and reflects respondents’ experiences of coercive sexual contact (e.g., “Someone threatened me unless I did something sexual,” “Someone molested me”). The physical abuse subscale is based on the definition of physical abuse as “bodily assaults on a child by an adult or older person that posed a risk of or resulted in injury” (e.g., “I was punished with a belt, a board, a cord, or some other hard object” and “I got hit so hard that I had to see a doctor or go to the hospital”). The physical neglect subscale is based on the definition of physical neglect as “the failure of caretakers to provide for a child’s basic physical needs, including food, shelter, clothing, safety, and health care”(e.g., “I didn’t have enough to eat” or “I had to wear dirty clothes”). Emotional abuse is defined as “verbal assaults on a child’s sense of worth and well-being or any humiliating or demeaning behavior directed toward a child by an adult or older person” (e.g., “People in my family called me things like stupid, lazy, or ugly”). Lastly, emotional neglect is defined as “the failure of caretakers to meet children’s basic emotional and psychological needs, including love, belonging, nurturance, and support (e.g. “I didn’t feel loved”).

Each of the CTQ subscales is comprised of five items, beginning with the phrase, “When I was growing up,” and rated on a five-point Likert scale ranging from “Never true” to “Very often true.” Thus, scores range from 5 to 25 for each abuse type. In addition, the CTQ includes a three-item Minimization/Denial validity scale developed to detect the underreporting of maltreatment. The CTQ has demonstrated reliability including moderate to high internal consistency reliability coefficients ranging from $\alpha = .66$ to $\alpha = .92$ across a range of samples, and test-retest reliability coefficients ranging from .79 to .86 over an average of 4 months (Bernstein et al., 2003; Scher, Stein, Asmundson, McCreary, & Forde, 2001). The CTQ’s validity has been supported by demonstrating convergent validity with ratings of childhood maltreatment of both

clinicians and therapists, and a consistent five-factor structure (Bernstein & Fink, 1998; Bernstein et al., 2003; Fink et al., 1995; Scher Stein, Asmundson, McCreary, & Forde, 2001). Internal consistency for the abuse subscales within the current sample ranged from acceptable to good (α s = .60, .84, and .94 for physical, emotional, and sexual abuse, respectively). Internal consistency for the neglect subscales within the current sample ranged from poor to good (α s = .44 and .87, for physical and emotional neglect, respectively).

The sexual, physical, and emotional abuse subscales of the CTQ were used to categorize participants as victims of child abuse (i.e., participants reporting low, moderate, or severe abuse) or as non-victims (i.e., participants reporting none or minimal abuse) in an effort to examine group mean differences in emotion regulation. Specifically, this study used established clinical cutoff points for each abuse type ($\geq 9, 8, 6$ for emotional, physical, and sexual abuse, respectively) to determine the presence or absence of abuse. These guidelines for classification of the CTQ subscale total scores were developed within two large independent samples, including a community sample of 1,225 women and a sample of 378 treatment-seeking substance abusers. The scale developers established these clinical cutoff scores by comparing scores on the CTQ to independent, interview-based ratings of childhood trauma severity used as the criterion for computing sensitivity and specificity (in order to both maximize sensitivity and ensure specificity of at least 80%; Bernstein & Fink, 1998).

Emotion Regulation

Difficulties in Emotion Regulation Scale.

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report measure developed to comprehensively assess individuals' levels of emotion regulation across six domains, including (1) lack of emotional awareness, (2) lack of emotional

clarity, (3) nonacceptance of negative emotions, (4) limited access to emotion regulation strategies perceived to be effective, (5) difficulties controlling impulsive behavior when experiencing negative emotions, and (6) inability to engage in goal-directed behavior when experiencing negative emotions. Participants are asked to rate each item on a five-point Likert scale ranging from “almost never” to “almost always.” The DERS has demonstrated high internal consistency ($\alpha = .93$), as well as good test-retest reliability over a period ranging from four to eight weeks with subscale coefficients ranging from .57 to .89 (Gratz & Roemer, 2004). The DERS has also shown adequate construct and predictive validity, as it has been shown to be correlated with frequency of deliberate self-harm and frequency of intimate partner abuse, two clinically important behavioral outcomes thought to be associated with emotion dysregulation (Gratz & Roemer, 2004). Furthermore, the DERS has been shown to be strongly correlated with an experiential measure of emotion regulation among patients with borderline personality disorder ($r = -.63$; see Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006). Internal consistency in the current sample was good ($\alpha = .95$).

Posttraumatic Stress

Trauma Symptom Inventory.

The Trauma Symptom Inventory (TSI; Briere, 1995) is a 100-item self-report measure designed to measure posttraumatic symptomatology. The inventory is comprised of ten clinical scales assessing a range of psychological impacts. Scales include Anxious Arousal, Depression, Anger/Irritability, Intrusive Experiences, Defensive Avoidance, Dissociation, Sexual Concerns, Deviant Sexual Behavior, Impaired Self-reference, and Tension Reduction Behavior. Each symptom item is rated according to its frequency of occurrence over the prior six months, using a four point scale ranging from 0 (“never”) to 3 (“often”). The TSI does not generate DSM-IV

diagnoses; instead, it is intended to evaluate the severity of posttraumatic distress. Three validity scales assess response style: the atypical response scale (ATR) reflecting endorsement of unusual symptoms, the Response Level scale assessing tendency to deny symptoms, and the Inconsistent Response scale. The TSI has demonstrated good internal consistency with mean α ranging from 0.84 to 0.87 in a variety of both clinical and nonclinical samples. The TSI has been shown to exhibit good convergent, predictive, and incremental validity. Internal consistency in the current sample was good ($\alpha = .97$).

Design and Procedure

As previously indicated, participants were recruited through the research pool. The researcher began each data collection session with a thorough review of the consent form. In an effort to maximize honest disclosure regarding sensitive information, students were guaranteed anonymity. After obtaining informed consent and reinforcing participants' anonymity and right to withdraw from the study at any time without penalty, the researcher provided an opportunity for students to ask any additional questions. After all remaining questions were adequately answered, surveys were administered.

Once the questionnaire packet was returned to the researcher, the participants were asked to read a debriefing form explaining the purpose of the study in more detail. Any additional questions or concerns were addressed at this time. Participants were also given a list of referrals in the event of future difficulties or distress associated with participation in the current study. Participants were also encouraged to contact the researcher with additional questions should they arise in the future.

To ensure anonymity, signed consent forms were separated from completed surveys upon collection and stored in a separate room. The completed surveys did not contain any identifying

information. Lastly, students were granted research credit using the information provided on the consent form regardless of survey completion.

CHAPTER 4

RESULTS

Maltreatment Characteristics

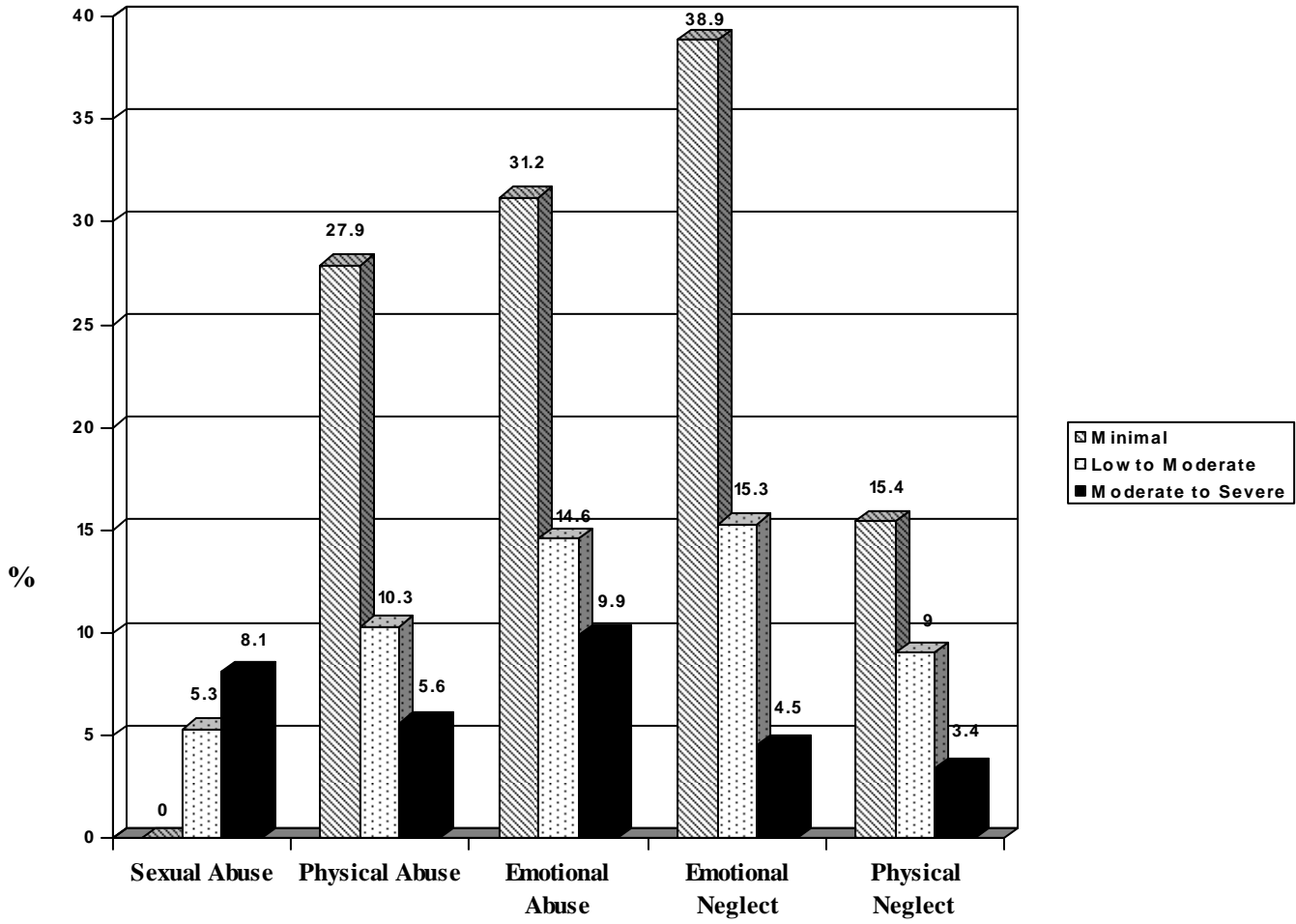
Regarding maltreatment history, 122 (13.4%) women were categorized as victims of childhood sexual abuse, while 145 (15.9 %) women were categorized as victims of childhood physical abuse. Childhood emotional abuse was the most commonly endorsed abuse type with 224 (24.6 %) women reporting abuse. Regarding neglect experiences, 180 (19.7%) women were victims of emotional neglect, while 113 (12.4%) women were characterized as victims of physical neglect. See Figure 1 for more information regarding maltreatment characteristics for the sample. Maltreatment victims did not differ significantly from non-victims on any demographic variables, including age, race/ethnicity, sexual orientation, marital status, family's religious affiliation, current religious affiliation, and current involvement in a romantic relationship.

Hypothesis 1

Group Means Differences

The first hypothesis of this study was that child abuse victims (i.e., participants reporting low, moderate, or severe sexual, physical, or emotional abuse using established clinical cutoff points) would evidence greater emotion dysregulation compared to participants reporting no or minimal abuse. Results of t-tests indicated that sexual abuse victims scored significantly higher on emotion dysregulation than did non-victims (victims: $M=83.82$, non-victims: $M=76.85$; $t(906) = 3.539$, $p < .001$, $d=.33$). In addition, physical abuse victims endorsed difficulties in emotion dysregulation significantly more than non-victims (victims: $M=84.00$, non-victims: $M=76.53$;

$t(906) = 4.307, p < .001, d=.38$). Finally, emotional abuse victims compared to non-victims evidenced greater emotion regulation difficulties (victims: $M=89.33$, non-victims: $M=74.00$; $t(906) = 4.12, p < .001, d=.76$). See Table 1 for results of t-tests, including means, standard deviations, and range of emotion dysregulation by abuse type.



Maltreatment Type (types are not mutually exclusive)

Figure 1. Bar graph representing the percentage of childhood maltreatment by type present in sample.

Table 1:
Means, standard deviations, and t values assessing differences in emotion
dsyregulation across abuse type and severity (N=908)

Abuse Type	<u>n</u>	<u>M</u>	<u>SD</u>	<u>t (906)</u>
Sexual Abuse				3.539**
None-Minimal (non-victim)	786	76.85	20.01	
Low-Severe (victim)	122	83.82	21.77	
Physical Abuse				4.307**
None-Minimal (non-victim)	763	76.53	19.93	
Low-Severe (victim)	145	84.40	21.96	
Emotional Abuse				10.32**
None-Minimal (non-victim)	684	74.00	18.30	
Low-Severe (victim)	224	89.33	22.04	

** p< .001

Hypothesis 2

Zero-order correlations

In an effort to further explore the relationship between child maltreatment and difficulties in emotion regulation, zero-order correlations were conducted with the overall CTQ score and each of the five subscale scores as well as the total DERS scores and each of the six subscale scores (see Table 2). The CTQ total score, as well as four of the five maltreatment subtypes were significantly positively associated with the overall DERS score. More specifically, no significant relationships were found between the sexual abuse subscale and any of the emotion dysregulation subscales or overall score. The emotional abuse and neglect subscales evidenced the strongest relationships with emotion regulation difficulties. The emotional abuse subscale was most strongly related to four of the six DERS subscales (i.e., Clarity, Nonacceptance, Goals, and Impulses), while a history of emotional neglect was more strongly associated with the overall DERS score and the Awareness and Strategies subscales. Notably, both physical abuse and neglect were significantly associated with each DERS subscale and the overall DERS score, although not as strongly as were emotional abuse and neglect.

Table 2:
Correlations between Childhood Maltreatment (CTQ) subscales and total score and Difficulties in Emotion Regulation (DERS) subscales and total score

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Sexual Abuse	--	.26 (N=912)	.31 (N=912)	.24 (N=912)	.23 (N=912)	.58 (N=912)	.01 (N=912)	.03 (N=911)	.01 (N=912)	.05 (N=911)	.03 (N=910)	.05 (N=912)	.04 (N=908)
2. Physical Abuse		--	.53 (N=912)	.39 (N=912)	.30 (N=912)	.65 (N=912)	.08 (N=912)	.12 (N=911)	.08 (N=912)	.14 (N=911)	.11 (N=910)	.14 (N=912)	.16 (N=908)
3. Emotional Abuse			--	.69 (N=912)	.41 (N=912)	.87 (N=912)	.16 (N=912)	.29 (N=911)	.21 (N=912)	.27 (N=911)	.22 (N=910)	.33 (N=912)	.36 (N=908)
4. Emot. Neglect				--	.51 (N=912)	.82 (N=912)	.14 (N=912)	.26 (N=911)	.18 (N=912)	.26 (N=911)	.29 (N=910)	.34 (N=912)	.36 (N=908)
5. Physical Neglect					--	.62 (N=912)	.08 (N=912)	.16 (N=911)	.08 (N=912)	.16 (N=911)	.16 (N=910)	.18 (N=912)	.20 (N=908)
6. CTQ: Total						--	.14 (N=912)	.26 (N=911)	.17 (N=912)	.26 (N=911)	.24 (N=910)	.30 (N=912)	.33 (N=908)
7. CLARITY							--	.37 (N=911)	.26 (N=912)	.35 (N=911)	.22 (N=910)	.35 (N=912)	.47 (N=908)
8. NONACCEPT								--	.44 (N=911)	.55 (N=910)	.37 (N=909)	.63 (N=911)	.81 (N=908)
9. GOALS									--	.46 (N=911)	.13 (N=910)	.59 (N=912)	.69 (N=908)
10. IMPULSES										--	.27 (N=909)	.70 (N=911)	.78 (N=908)
11. AWARENESS											--	.32 (N=910)	.53 (N=908)
12. STRATEGIES												--	.88 (N=908)
13. DERS: Total													--

Correlation is significant at the 0.05 level if $r \geq .08$
Correlation is significant at the 0.01 level if $r \geq .11$

Hypothesis 3

Relative and Unique Contributions of Emotional Abuse to Emotion Dysregulation

Hierarchical regression analysis was performed to test the hypothesis that emotional abuse contributes significantly to difficulties in emotion regulation over and above the effects of other forms of child maltreatment (i.e., sexual and physical abuse). Sexual abuse was entered as a predictor variable in step one, physical abuse was added in step two, and emotional abuse was added in the third and final step. While sexual abuse explained .2% of the variance in emotion regulation as assessed by the DERS total score ($R^2 = .002$), sexual abuse did not significantly predict emotion dysregulation in step one ($\beta = .042, p = .21$). In step two, physical abuse emerged as significant predictor of emotion regulation difficulties ($\beta = .157, p < .001$), while sexual abuse remained a nonsignificant predictor. Adding physical abuse at step two resulted in an additional 2.3% of variance in emotion dysregulation ($R^2_{\text{change}} = .023, p < .001, R^2 = .025$) being explained. With the addition of emotional abuse in the final step of the model, results confirmed that emotional abuse significantly predicted emotion dysregulation ($\beta = .395, p < .001$) over and above the effects of sexual and physical abuse. This step accounted for an additional 10.8% of the variance in emotion regulation difficulties ($R^2_{\text{change}} = .108$) over step two. At this third step, sexual abuse emerged as a significant predictor of emotion dysregulation ($\beta = -.073, p = .042$), while physical abuse no longer significantly predicted emotion regulation difficulties ($\beta = -.031, p = .392$). Notably, although sexual abuse emerged as significant predictor of emotion dysregulation in the final model, the association was opposite the expected direction, suggesting that higher levels of sexual abuse were related to *less* emotion dysregulation. This finding should be interpreted with

caution given the association is close to zero (i.e., no relationship) and in light of previous findings that sexual abuse was not significantly associated with emotion regulation difficulties at the zero order correlation level (see Table 2). The final model explained 13.2 % of variance in emotion regulation difficulties ($R^2 = .132, p < .001$) (See Table 3 for summary of results).

Although the preceding regression analyses revealed that emotional abuse contributes uniquely to emotion regulation difficulties beyond the contribution of sexual and physical abuse, a second hierarchical regression (Table 4) was conducted to determine the contribution of emotion abuse independent of other forms of maltreatment. Therefore, in the second hierarchical regression model emotional abuse was entered in step one, physical abuse in step two, and sexual abuse was added in the third and final step. In step one, emotional abuse significantly predicted emotion dysregulation ($\beta = .355, p < .001$) and accounted for significant variance ($R^2 = .126, p < .001$). In step two, physical abuse did not significantly predict emotion dysregulation over and above the contribution of emotional abuse, while emotional abuse remained a significant predictor ($\beta = .355, p < .001$). The addition of physical abuse at step two resulted in only a minimal and nonsignificant increase in variance accounted for ($R^2_{\text{change}} = .001, ns$). As the third and final step of this analysis is identical to the first regression analysis, reported above, the statistics for this step are not repeated here (See Table 4 for statistics). Noteworthy, however, is the fact that the variance accounted for when all three abuse variables are included in the model exceeds only very slightly the variance accounted for by emotional abuse alone revealed in step one.

Together, findings from the two hierarchical regression analyses indicate that, in a college sample of women, the distal environmental variable of emotional abuse was the strongest predictor of emotion dysregulation. Emotional abuse accounted for the majority of explained variance, while sexual abuse appears to contribute a small percentage of unique variance in emotion regulation.

Table 3:
Hierarchical multiple regression analysis, with emotion regulation (DERS)
servicing as the dependent variable (N=908)

Variables	B	β	R^2 (Adj. R^2)	ΔR^2
Step 1			.002 (.001)	
Sexual Abuse	.298	.042		
Step 2			.025 (.023)	.023***
Sexual Abuse	.007	.001		
Physical Abuse	1.642	.157***		
Step 3			.132 (.129)	.108***
Sexual Abuse	-.521	-.073*		
Physical Abuse	-.329	-.031		
Emotional Abuse	2.24	.395***		

$p < .05$, ** $p < .01$, *** $p < .001$

Note: B = unstandardized regression coefficient, β = standardized regression coefficient

Table 4:
Hierarchical multiple regression analysis, with emotion regulation (DERS)
servicing as the dependent variable (N=908)

Variables	B	β	R^2 (Adj. R^2)	ΔR^2
Step 1			.126 (.125)***	
Emotional Abuse	2.02	.355***		
Step 2			.128 (.126)***	.001
Emotional Abuse	2.143	.377***		
Physical Abuse	-.430	-.041		
Step 3			.132 (.129)***	.005*
Emotional Abuse	2.24	.395***		
Physical Abuse	-.329	-.031		
Sexual Abuse	-.521	-.073*		

$p < .05$, ** $p < .01$, *** $p < .001$

Note: B = unstandardized regression coefficient, β = standardized regression coefficient

Hypothesis 4

The Mediating Role of Emotion Regulation

To test whether emotion regulation serves as a mediator between child maltreatment and posttraumatic symptomatology, three regression equations were estimated for each of the three mediational models (i.e. sexual, physical, and emotional abuse each served as predictor variables). According to Baron and Kenny (1986), testing for mediational effects requires significant correlations between (a) the predictor and outcome variable; (b) the predictor and proposed mediating variable; and (c) the proposed mediating and outcome variables. When the mediator is in the model, the correlation between the predictor and the outcome variable is reduced to nonsignificance. (See Table 5 for correlations between CTQ abuse subscales, DERS and TSI total scores).

Table 5:
Correlations between abuse (CTQ) subscales, emotion dysregulation (DERS), and posttraumatic stress (TSI)

	1	2	3	4	5
1. Sexual Abuse	--	.26** (N=912)	.31** (N=912)	.04 (N=908)	.19** (N=903)
2. Physical Abuse		--	.53** (N=912)	.16** (N=908)	.24** (N=903)
3. Emotional Abuse			--	.36** (N=908)	.42** (N=903)
4. DERS: TOTAL				--	.66** (N=899)
5. TSI: TOTAL					--

** Correlation is significant at the .01 level

Emotion regulation as mediator of the childhood sexual abuse-trauma symptoms relationship. To test the proposed model that difficulties in emotion regulation (DERS) mediate the relationship between sexual abuse and posttraumatic symptomatology (as measured by the Trauma Symptom Inventory (TSI)), a series of regression analyses were conducted. First, the relationship between the sexual abuse and symptoms of posttraumatic stress was established ($\beta = .187, p < .001$). Next, the proposed mediator, emotion dysregulation, was regressed on the abuse variable, sexual abuse. However, results indicated that this relationship was not significant ($\beta = .042, p = .210$). Consequently, no further analyses were conducted, and it was concluded that emotion regulation does not mediate the relationship between a history of sexual abuse and posttraumatic symptomatology in the current sample.

Emotion regulation as mediator of the childhood physical abuse-trauma symptoms relationship. In the second model, a history of physical abuse served as the predictor variable. First, the relationship between the physical abuse and symptoms of posttraumatic stress was established ($\beta = .241, p < .001$). Next, the proposed mediator, emotion dysregulation, was regressed on the abuse variable, physical abuse ($\beta = .157, p < .001$). In Step 3, the relationship between emotion regulation and posttraumatic stress was tested ($\beta = .660, p < .001$). Finally, both physical abuse and emotion dysregulation were entered simultaneously to test for mediation. Although the relationship between physical abuse and posttraumatic stress remained significant, the strength of the relationship decreased ($\beta = .138, p < .001$) suggesting that emotion regulation difficulties partially mediated this relationship. A Sobel test confirmed these findings by verifying the

significance of the indirect effect of childhood physical abuse on posttraumatic stress through the mediator variable, emotion dysregulation ($z = 4.704, p < .001$).

Emotion regulation as mediator of the childhood emotional abuse-trauma symptoms relationship. In the final model, a history of emotional abuse served as the predictor variable. First, the relationship between the emotional abuse and symptoms of posttraumatic stress was established ($\beta = .418, p < .001$). Next, the proposed mediator, emotion dysregulation, was regressed on the abuse variable, emotional abuse ($\beta = .355, p < .001$). As in the previous two models, the relationship between emotion regulation and posttraumatic stress was tested ($\beta = .660, p < .001$). Finally, both emotional abuse and emotion dysregulation were entered simultaneously to test for mediation. As with a physical abuse in the previous model, the relationship between emotional abuse and posttraumatic stress remained significant, although the strength of the relationship was reduced ($\beta = .212, p < .001$). Results confirmed that emotion regulation difficulties partially mediated the relationship between emotional abuse and posttraumatic symptomatology. A Sobel test confirmed these findings by verifying the significance of the indirect effect of emotional abuse on posttraumatic stress through the mediator variable, emotion dysregulation ($z = 10.51, p < .001$).

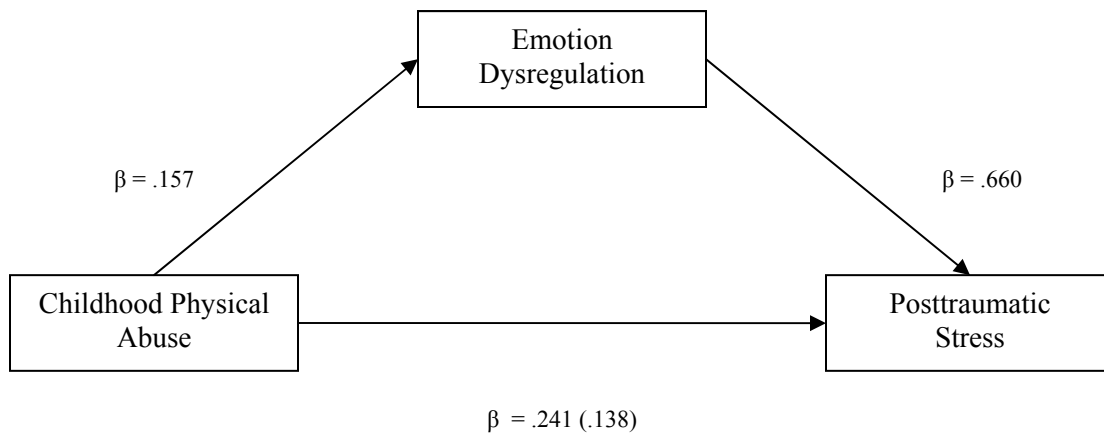


Figure 2. Standardized beta weights are presented. The effect of physical abuse on posstraumatic stress symptoms is shown with (in parentheses) and without the mediating role of emotion dysregulation. All coefficients are significant at $p < .001$.

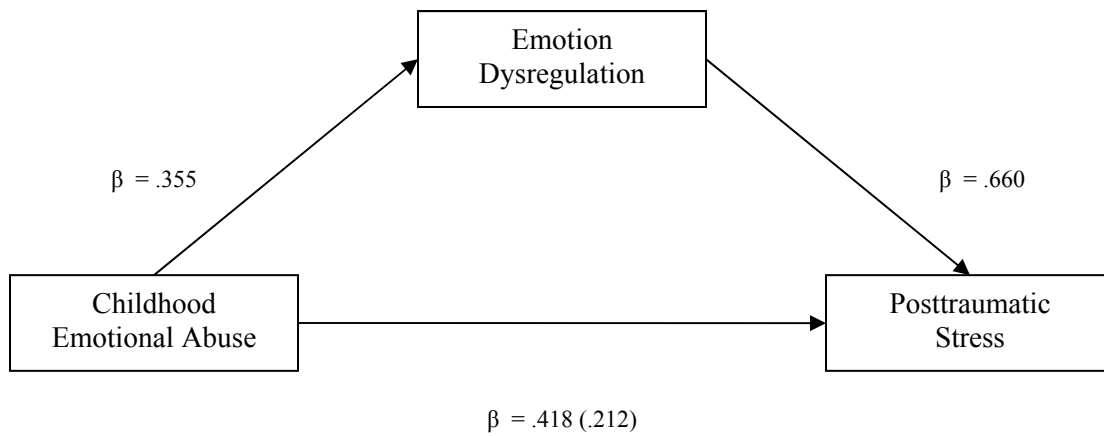


Figure 3. Standardized beta weights are presented. The effect of emotional abuse on posstraumatic stress symptoms is shown with (in parentheses) and without the mediating role of emotion dysregulation. All coefficients are significant at $p < .001$.

CHAPTER 5

DISCUSSION

Hypothesis 1

Results provide preliminary support for greater emotion regulation difficulties among women endorsing a history of sexual, physical, and emotional abuse (compared to women reporting none-minimal abuse). These findings are consistent with previous research findings examining the associations between childhood sexual and physical abuse and emotion dysregulation among children (Kolko, Brown, & Berliner, 2002; Maughan & Cicchetti, 2002; Shields & Cicchetti, 1998; Shipman et al., 2000; Shipman et al., 2004; Shipman et al., 2007) and adults (Cloitre et al., 2005; Gratz et al., 2007).

Hypothesis 2

The finding of greater emotion regulation difficulties evidenced by individuals with histories of emotional abuse (compared to individuals reporting none or minimal emotional abuse) is of particular significance, given our limited understanding of the enduring effects of emotional abuse. The present study revealed that the CTQ physical and emotional abuse and neglect subscales were significantly related to *all* components of emotion regulation (i.e., clarity, awareness, nonacceptance, impulse control difficulties, difficulties engaging in goal-directed behavior, limited access to emotion regulation strategies), with emotional abuse and emotional neglect subscales evidencing the strongest associations.

Contrary to hypotheses and previous findings (Gratz et al., 2007), sexual abuse was not correlated with emotion regulation difficulties at the subscale or total score level. This finding may also seem contradictory given previously reported results from t-tests which revealed that women endorsing a history of sexual abuse evidenced greater emotion dysregulation when compared with non-victims. However, although mean differences in emotion dysregulation were found between sexual abuse victims and non-victims, it is important to highlight that although these differences were statistically significant, the group means differed the least of any abuse type (victims=83.82, non-victims=76.85). The lack of a statistically significant correlation between sexual abuse and emotion dysregulation may also be evidence of the CTQ sexual abuse subscale's inability to adequately assess this particular abuse experience.

Hypothesis 3

The present study also provided support for the hypothesis that a history of emotional abuse contributes significantly to emotion regulation difficulties over and above the effects of other forms of maltreatment. Results indicated that a history of emotional abuse is a more powerful predictor of emotion dysregulation in a large sample of female undergraduates than childhood sexual or physical abuse, with emotional abuse accounting for the overwhelming majority of explained variance in emotion dysregulation (i.e., a 12.6% total effect and 10.8% after controlling for sexual and physical abuse). Physical abuse did not account for additional variance in emotion dysregulation, but sexual abuse explained an additional .5% of variance. To summarize, childhood emotional, physical, and sexual abuse accounted for 13.2% of total variance in emotion regulation difficulties as measured by the DERS. Although there remains a

significant amount of unexplained variance in emotion dysregulation, these results provide preliminary support for the role of emotional abuse in particular, in the prediction of emotion regulation difficulties.

The emergence of emotional abuse as the strongest predictor of emotion dysregulation not only provides empirical support for the potentially damaging role of this type of child maltreatment, but highlights the unique association between emotional abuse and emotion regulation difficulties. Several theories are worth revisiting in an effort to interpret this finding. First, both *Ecological-Transactional Model* (Cicchetti & Lynch, 1993) and the *Resource Loss Model of Childhood Trauma* (Cloitre, Cohen, & Koenen, 2006) explain how risk factors such as child abuse serve to overwhelm protective factors causing maltreated children to deviate from normal developmental trajectories, thereby increasing their likelihood for subsequent psychopathology. They further suggest that although abuse at any age has the potential to prohibit the acquisition of important developmental milestones, because each developmental stage incorporates the skills acquired during the previous stage by means of hierarchical integration, child abuse has enduring and cumulative effect. Given that emotional abuse tends to occur with greater frequency than other forms of maltreatment (Sullivan et al., 2006), it may interrupt learning and the successful attainment of developmental milestones across a longer time period than other forms of abuse. Therefore, emotion regulation skills, which are often acquired at several stages throughout development, may be more likely to be negatively impacted by emotional abuse given its greater frequency compared to other forms of abuse.

The unique association between emotional abuse and emotion dysregulation may also be explained in part by Linehan's theory on the *Invalidating Environment* (Linehan, 1993). Linehan suggests that when a child's emotional expression is not appropriately validated or modeled and is instead ignored, discouraged, or punished (as is characteristic of the invalidating environments), then a child's ability to describe and interpret his or her emotional experience and identify the source of distress is compromised. In other words, one conceptualization of the invalidating environment may be an environment characterized by repetitive emotionally abusive statements, including statements that reinforce emotion dysregulation by encouraging the child to suppress negative emotions, or cause the child to not only question his or her ability to accurately identify emotions, but also to attribute his or her emotional experiences to socially unacceptable characteristics or deficient personality traits (Linehan, 1993).

Similarly, according to Rose and Abramson (1992), emotionally abusive statements, distinctly characteristic of emotional abuse, supply direct causal explanations to a child regarding his or her self-worth and abilities, whereas children experiencing physical or sexual maltreatment may be more likely to attribute the events to other potential causes (Hankin, 2005; Rose & Abramson, 1992). This theory may provide additional theoretical support for why emotional abuse impacts emotion dysregulation more than other forms of maltreatment. More specifically, acts of physical and sexual abuse do not explicitly communicate to the child that he or she did something wrong and certainly do not explicitly punish emotion expression directly. Although it is certainly possible that in the case of physical abuse, a child may be physically hurt as a result of emotion expression or a number of behaviors, the relationship is less direct than with

emotional abuse. In other words, if not accompanied by emotionally abusive statements, a physically or sexually abused child's understanding of the abuse or attribution of blame may be more subject to interpretation.

Although, it is certainly plausible that a victim of physical or sexual abuse may internalize their abuse experience as evidence of personal inadequacy, there is considerably more public awareness and education available to children regarding the consequences of these forms of abuse. Specifically, not only is attention paid to the harmful consequences of sexual and physical abuse, but it is emphasized that children are never responsible or blamed for the abuse they suffer regardless of their behavior. Conversely, emotional abuse has only recently been identified as a potential risk factor for subsequent maladjustment. Given the limited research on the effects of emotional abuse within the maltreatment literature, it seems reasonable to speculate that most people, particularly children, are unaware of the potential impact of emotional abuse, let alone if these statements constitute abuse. Therefore, when a child is the recipient of repetitive emotionally abusive statements, he or she may not even be aware of the inappropriateness these statements, beyond knowing that these statements elicit negative emotions. Consequently, the child may be more likely to make internal attributions regarding the abuse experience, suggesting that the abuse reflects inadequacy on the part of the individual rather than a result of the environment or pathology of the perpetrator.

In addition to research that suggests that emotion suppression and lack of awareness or clarity of particular emotions is inherently dysregulating, it is also possible that the lack of tangible evidence of emotional abuse (i.e., no physical evidence of abuse) intrinsically causes emotion dysregulation as well (Sullivan et al., 2006). However, given

that emotional abuse tends to occur with greater frequency than other forms of abuse, it may be that an individual's capacity to effectively regulate their emotions is overwhelmed by having to continuously manage their recurrent negative affect.

Hypothesis 4

The final hypotheses concerning the mediating influence of emotion regulation difficulties were tested using a series of regression analyses. Results confirmed that emotion dysregulation partially mediated the relationship between childhood physical abuse and symptoms of posttraumatic stress. Similarly, emotion regulation difficulties partially mediated the relationship between childhood emotional abuse and posttraumatic symptomatology. This suggests that symptoms of posttraumatic stress endorsed by victims of physical and emotional abuse are partially explained by their resulting emotion regulation difficulties. These findings provide additional support for previous research linking emotion dysregulation to symptoms of posttraumatic stress (Cloitre et al., 2002; Tull et al., 2007). More specifically, individuals with emotion regulation difficulties will exhibit more difficulties regulating intense negative emotions triggered by the experience of trauma than individuals more skilled at emotion regulation. Moreover, there is some evidence that specific maladaptive emotion regulations strategies (e.g., avoidance or nonacceptance of emotions) may maintain symptoms of posttraumatic stress by preventing emotional processing of the trauma (Cloitre et al., 2002; Tull et al., 2007), an essential component of evidenced based treatments for PTSD (e.g., Prolonged Exposure Therapy, Cognitive Processing Therapy). Although difficulties in emotion regulation did not fully mediate the relationship between abuse and posttraumatic stress, this is understandable given the variety of potential pathways delineated within the

maltreatment literature in an effort to explain how child abuse leads to adult psychopathology. (Black, Slep, Heyman, 2001; Kent & Waller, 2000, Malinosky-Rummell & Hansen, 1993; Wyatt & Newcomb, 1990).

Limitations

Although the present study increases our understanding of the relationship between child maltreatment, emotion dysregulation, and posttraumatic stress, the results of this study are preliminary and must be considered in light of the study's limitations. First, the reliance on correlational data and a cross-sectional design prevents the ability to determine the exact relationship between the variables of interest. More specifically, the direction or temporal order of these relationships may not be determined. Second, the reliance on self-report measures to assess potentially distal relationships introduces retrospective bias. As has been previously alluded to in the literature, the exclusive reliance on self-report measures of emotion regulation abilities and symptoms of posttraumatic stress may be problematic given that these responses may be influenced by an individual's accurate assessment of their behavior and their willingness to disclose, particularly their experience of child maltreatment and associated distress (Gratz et al., 2007; Tull et al., 2007).

A third limitation, as briefly mentioned above, pertains to the way in which the severity of sexual abuse experiences, in particular, was measured in this study. More specifically, the lack of a statistically significant correlation between sexual abuse and emotion dysregulation even though mean differences were found may suggest that scores on this scale, while meaningful at the extremes, may not provide a linear representation of abuse severity. In part, this may be attributable to the Likert response format used,

which appears to capture frequency rather than severity of events. For example, a respondent who had experienced a brutal rape might respond to all five subscale items with a mid-range rating of 3 “sometimes true”, rather than the highest rating of 5 “very often true” because she had been raped only once. Consequently, these ratings of “3” might not be indicative of the severity of this woman’s sexual abuse experience. A second limitation of the scale is that two of the five items require respondents to self-identify as “molested” and “sexually abused”, respectively. There is evidence that even when endorsing or describing experiences of sexual abuse, women refuse to label their experience as such or deny altogether that they were victims of sexual abuse (Bondurant, 2001; Kahn, Mathie, & Torgler, 1994; Kahn & Mathie, 2000; Koss, 1985; Schwartz & Leggett, 1999). Therefore, it seems likely that these items may also have contributed to possible error in assessing abuse severity.

Similarly, the brevity of the CTQ prevented the assessment of several other abuse related variables (e.g., age of onset of abuse, relationship to perpetrator, duration and frequency of abuse) believed to moderate the impact of the abuse experience (Binder, McNeil, & Goldstone, 1996; Bolger & Patterson, 2001; Merrill et al., 2001). Additionally, even though the physical neglect subscale has been shown to be the least reliable of the CTQ subscales, the poor internal reliability of the physical neglect subscale within our sample suggests that its association with emotion dysregulation may be interpreted with caution. Finally, the multi-collinearity present among the variables of interest, particularly between child maltreatment and emotion regulation subscales, may limit the predictive value of individual variables. Lastly, the external validity of the findings is limited due to the homogeneity of the present sample. Although it is important to test

these relationships in a non-clinical sample given the limited empirical support within the literature, results may not be generalizable to clinical populations, men, or ethnically diverse samples.

Implications and Future Directions

Despite limitations, the present study improves our understanding of the relationship between child abuse, emotion regulation, and posttraumatic stress. More specifically, the current study examined these relationships using a more comprehensive measure of emotion regulation difficulties than previous studies, while also considering the impact of additional forms of maltreatment besides those types more commonly examined within the literature (i.e., sexual and physical abuse). Findings provide needed support for the enduring impact of emotional abuse, even when controlling for the impact of sexual and physical abuse.

Future research should continue to explore how emotional abuse leads to emotion dysregulation by examining the relative impact of different facets of emotion dysregulation on posttraumatic stress by utilizing a multiple mediator model. As previously suggested, future research would benefit from examining the associations between child maltreatment, emotion regulation difficulties, and posttraumatic stress within increasingly diverse samples in an effort to increase the generalizability of current findings. Future studies may also improve measurement of emotion regulation by utilizing laboratory based measures or additional self-report measures of emotion dysregulation. Although there remains a continued need to increase our understanding of the multitude of pathways that result in maladjustment in an effort to illuminate potential areas for intervention, findings from this study suggest that addressing emotion regulation

difficulties among survivors of child maltreatment, particularly those with a history of emotional abuse, may decrease posttraumatic symptomatology and prevent subsequent maladjustment.

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