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RESEARCH ON INTIMATE PARTNER VIOLENCE

A Developmental Process Analysis of the Contribution of Childhood Emotional Abuse to Relationship Violence

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Despite indications that emotional abuse might be the core factor underlying the negative effects of child maltreatment, it has received little attention, particularly with respect to its impact on interpersonal relationships in adulthood. This study conducted a developmental process analysis of the contribution of childhood emotional abuse to relationship violence in a sample of undergraduates. Results indicated that emotional abuse was a stronger predictor of relationship violence than other maltreatment subtypes. Emotion dysregulation partially mediated this relationship, driven by its behavioral component, impulsivity. Gender and ethnicity effects were examined. Findings point to the need for increased attention to adult outcomes of emotional abuse and increased clinical awareness of emotion regulation as a key developmental mechanism of adaptation in adulthood.

KEYWORDS *alexithymia, child maltreatment, domestic violence, emotion regulation, emotional abuse, impulsivity, relationship violence*

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Child maltreatment undermines the development and maintenance of adaptive relationships in childhood and beyond (Colman & Widom, 2004; Dodge Reyome, 2010; Ehrensaft et al., 2003; Mueller & Silverman, 1989; Riggs, 2010; Swan & Snow, 2006; Taussig & Culhane, 2010). Moreover, evidence suggests that different kinds of maltreatment contribute to relational difficulties to varying degrees and via unique developmental processes (Kaplan, Pelcovitz, & Labruna, 1999; Mullen, Martin, Anderson, Romans, & Herbison, 1996; Wekerle et al., 2001; Widom, Schuck, & White, 2006). Amidst increasing efforts to clarify these specific effects and processes, childhood emotional abuse consistently emerges as central to understanding the insidious effects of child maltreatment.

Initially overlooked in the field of child maltreatment research, childhood emotional abuse has shown itself to be an especially pernicious influence on development, with predictive power surpassing physical and sexual abuse across varied outcomes, including psychopathology, subjective distress, interpersonal functioning, and destructive behavior (Briere & Runtz, 1988; Dodge Reyome, 2010; Gross & Keller, 1992; Hart, Binggeli, & Brassard, 1997; Kent, Waller, & Dagnan, 1999; McGee, Wolfe, & Wilson, 1997; Paradis & Boucher, 2010; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Vissing, Straus, Gelles, & Harrop, 1991). Characterized by rejecting, degrading, threatening, isolating, or exploiting caregiving (Hart et al., 1997), emotional abuse can occur in isolation, but also frequently accompanies other types of abuse, making it the most common type of maltreatment (Briere & Runtz, 1990; Claussen & Crittenden, 1991). Further, emotional abuse exacerbates the harmful consequences of physical or sexual abuse, which are at their most potent when an emotional component is present (Briere & Runtz, 1990; Hart et al., 1997; McGee et al., 1997; Ney, Fung, & Wickett, 1994; Vissing et al., 1991), suggesting that emotional abuse might be the core factor underlying the deleterious effects of child maltreatment (Hart et al., 1997).

Although this foundation of evidence has sparked a recent increase in clinical and empirical investigations of childhood emotional abuse (Wright, 2007; Yates & Wekerle, 2009), there remains a need to quantify and explain the long-term consequences of childhood emotional abuse with respect to relational outcomes (see Dodge Reyome, 2010). The connection between emotional abuse in childhood and future adult relationships is essential to understanding the intergenerational cycle of maltreatment. Adult relationships form the foundation on which the emotional context of the family is built, thereby influencing every aspect of the child's development. Therefore, it is important to examine childhood emotional abuse, not only for its short-term impact on children, but for its long-term consequences as well, particularly with respect to intimate relationships.

In childhood, emotional abuse has specific documented connections to internalizing problems, cognitive deficits, physiological impairments,

aggression, delinquency, and interpersonal difficulties (Erickson, Egeland, & Pianta, 1989; McGee et al., 1997; Vissing et al., 1991; Yates, 2007). However, despite the obvious short-term problems these outcomes present, the most detrimental consequences of many of these childhood deficits are their contribution to later difficulties in adulthood, such as disordered eating, low self-esteem, revictimization, and suicidality (Briere & Runtz, 1990; Kaplan et al., 1999; Kent et al., 1999; Spertus et al., 2003). Thus, it is particularly important to examine adult interpersonal outcomes of childhood emotional abuse as a function of developmental processes, which might themselves have been influenced by childhood emotional abuse. These early effects can serve as mechanisms by which later outcomes emerge, and toward which effective intervention efforts should be targeted (Shirk & Eltz, 1998).

Although some research suggests that victims of childhood emotional abuse experience more difficulty and dissatisfaction in their adult intimate relationships (Dodge-Reyome, 2010; Messman-Moore & Coates, 2007; Mullen et al., 1996; Paradis & Boucher, 2010; Perry, DiLillo, & Peugh, 2007; Varia, Abidin, & Dass, 1996), little is known about the developmental processes underlying such effects. Further, only a few studies have identified relationship violence as a specific outcome of childhood emotional abuse (Bender, Cook, & Kaslow, 2003; Crawford & Wright, 2007; Dodge-Reyome, 2010; Simonelli, Mullis, Elliott, & Pierce, 2002; Wekerle et al., 2009; Zurbriggen, Gobin, & Freyd, 2010), whereas others have argued that relationship violence is a product of cooccurring maltreatment subtypes (i.e., emotional and physical abuse together; Paterson, Fairbairn-Dunlop, Cowley-Malcolm, & Schluter, 2007; Wekerle et al., 2001). Therefore, this study employed a developmental process perspective to explore the unique contribution of childhood emotional abuse to relationship violence in young adulthood.

One important early consequence of childhood emotional abuse that might be especially salient in the area of intimate relationships involves its interference with the ability to develop adaptive coping styles, particularly with respect to emotionally charged situations or contexts. Childhood emotional abuse is associated with maladaptive attributional styles, avoidant coping, inhibited emotional responses, and limited access to coping strategies (Gibb, Benas, Crossett, & Uhrlass, 2007; Gross & Keller, 1992; Hardy, Power, & Jaedicke, 1993; Krause, Mendelson, & Lynch, 2003; Rosenthal, Polusny, & Follette, 2006; Shipman et al., 2007). Given that the capacity to cope with emotionally straining situations is critical for successful intimate relationships, emotion regulation (i.e., the ability to accurately identify and respond to emotions) is central to adaptive coping in relational settings. Maltreatment-induced impairment in emotion regulation could be at the root of negative relational health, and in extreme cases, violence. Intimate partner violence represents the most dramatic negative consequence of poor coping and impaired social cognition on relationships, with the emotionally pressured context implicating emotion regulation as a likely

mechanism by which these capabilities are disrupted. A few researchers have identified poor coping strategies as mechanisms by which maltreatment can lead to relationship violence (Ponce, Williams, & Allen, 2004; Swan & Snow, 2006), whereas Taft, Schumm, Marshall, Panuzio, and Holtzworth-Munroe (2008) suggested that social cognition deficits explain this relation. However, this study is the first to evaluate the role of emotion dysregulation as a specific explanatory mechanism underlying the relation between childhood emotional maltreatment and relationship violence. Further, this investigation explored both the global construct of emotion regulation and specific cognitive and behavioral dimensions of regulation in an effort to refine the understanding of emotion regulation and its implications for development.

Several studies have documented emotion regulation deficits in children who are victims of emotional abuse or neglect (Chang, Schwartz, Dodge, & McBride-Chang, 2003; Eisenberg et al., 2001; Shipman et al., 2007). It remains to be determined, however, whether emotional abuse has particular salience for certain dimensions of the emotion regulation construct. Because emotion regulation is a multidimensional construct, research that exclusively focuses on abilities to control and suppress emotional responses might be misleading (Gratz & Roemer, 2004). Therefore, this investigation explored the cognitive capacities to accurately identify and express emotions as potentially distinct from the behavioral capacities to moderate one's response to emotions. For an individual to produce an appropriate emotional response in a given situation, awareness and processing of the situation and possible responses take place, followed by enactment of a chosen response. This conceptualization of emotion regulation mirrors Crick and Dodge's (1994) model of social information processing, which was modified by Lemerise and Arsenio (2000) to include emotional responses. Following Lemerise and Arsenio, the model used in this study explored relations among childhood emotional abuse, a cognitive emotion regulation deficit (i.e., lack of awareness of emotions or alexithymia), a behavioral emotion regulation deficit (i.e., impulsivity), and relationship violence.

Some research suggests that deficits in different aspects of emotion regulation might follow from different types of maltreatment (Cicchetti & Toth, 2005). Although research links both alexithymia (Berenbaum, 1996; Hund & Espelage, 2006; Mazzeo & Espelage, 2002) and impulsivity (Corstorphine, Waller, Lawson, & Ganis, 2007; Roy, 2005) to childhood emotional abuse, these constructs have not been examined in the same sample. Similarly, these dimensions of emotion regulation have not been directly explored in connection to relationship violence, although both alexithymia (Dabkowska, 2007; Gortner, Gollan, & Jacobson, 1997) and impulsivity (often through reactive anger; Cohen et al., 2003; Gortner et al., 1997; Stuart & Holtzworth-Munroe, 2005) have been identified as correlates of violence.

This investigation examined cognitive and behavioral components of the emotion regulation construct as they might follow from child emotional abuse and contribute to relationship violence. First, it was expected that emotional

abuse would predict poor relational health, as evidenced by relationship violence victimization or perpetration, above and beyond the contribution of physical abuse, sexual abuse, and childhood exposure to domestic violence. Further, it was expected that emotional abuse would have the strongest association with relationship violence, based on the theory that emotional abuse is the driving force behind child maltreatment consequences (Hart et al., 1997). Second, it was predicted that emotion dysregulation would mediate the relation between childhood emotional abuse and relationship violence in adulthood. Consistent with a developmental process approach and the documented impact of emotional abuse on coping capabilities, emotion regulation was hypothesized to be an important link between emotional abuse in childhood and relationship violence in adulthood. Third, this study examined if and how cognitive and behavioral elements of emotion dysregulation, as indicated by alexithymia and impulsivity, would differentially explain pathways to relationship violence perpetration versus victimization. Specifically, consistent with research suggesting that perpetration and victimization might have different early antecedents (Ehrensaft et al., 2003; Swan & Snow, 2006), it was hypothesized that impulsivity would mediate the link between emotional abuse and relationship violence perpetration, and alexithymia would explain pathways between emotional abuse and relationship violence victimization. Emotional abuse has been related to both types of emotion regulation deficits, and it was expected that it would be in this model as well. However, because violence perpetration has a behavioral component that victimization does not, impulsivity was expected to be related to perpetration. Although global emotion regulation was expected to play a significant role in relationship violence victimization as well, on a component level, it seems victimization has a less behavioral and more cognitive basis. For example, awareness and understanding of one's emotions might be related to recognizing the reality of relationship violence and the emotional toll it takes on oneself. Therefore, it was hypothesized that alexithymia, rather than impulsivity, would be related to victimization. Finally, exploratory analyses were conducted to evaluate if and how the mediation models already specified might be influenced by gender and ethnicity. Although it is clear that the mechanisms by which relationship violence occurs might be different for women and men (Widom et al., 2006), as well as for different ethnic groups (Swan & Snow, 2006), results regarding the experience of relationship violence in different populations have been varied and inconclusive (Wilt & Olson, 1996). Using a large and diverse sample, the unique opportunity to probe these questions was seized in this study.

METHOD

Participants

Participants were 2,169 (63.8% female) undergraduate students at a large West Coast university. The sample was 46.2% Asian, 27.1% Hispanic, 16.7%

Caucasian, 6.5% black, and 3.5% multiracial or other. Black, multiracial, and other categories were combined for analyses due to the small percentage of the sample each represented. The full sample reflects all participants who were able to complete the study during the first year of data collection, and was used to examine the relation between emotional abuse and emotion regulation. A subsample of 1,175 participants (68.6% female), who reported that they had been in a romantic relationship of 2 months or longer, was used to examine the process model predicting relationship violence. Compared to participants who had not been in a relationship, participants who endorsed having a romantic relationship of 2 months or longer were slightly older (M age of the dating group = 19.22, SD = 1.64; M age of the not dating group = 19.06, SD = 1.35), $t(2,121) = 2.33, p = .020$; more likely to be female (68.6% females in the dating group, 58.2% females in the not dating group), $t(2,186) = 5.06, p < .001$; and less likely to be Asian (42.2% Asian in the dating group, 50.1% Asian in the not dating group), $t(2,194) = 3.73, p < .001$.

Procedure

Participants completed a 2-hour computerized survey in small, supervised groups of up to 14 students at a time. Participants were recruited from introductory psychology courses and received class credit in exchange for their participation. Password-protected surveys were administered through a computerized survey management company. Responses were carefully monitored for completeness and the entered information was encrypted (until download) and was identified only by a code number to further ensure the security of the data. Participants completed the survey in private cubicles in a laboratory setting under the supervision of a trained research assistant. Participants were informed that the purpose of the study was to examine relations between adaptation in young adults and various experiences in childhood and adolescence. They were assured that their participation was anonymous and no personal identifying information was requested. Participants were required to stay for the full 2-hour survey block to minimize the incentive to rush through the questionnaires. All procedures were reviewed and approved by the Human Research Review Board of the university.

Measures

MALTREATMENT

The Childhood Maltreatment Interview Schedule (Briere, 1992) was used to assess the frequency of emotional maltreatment, physical abuse, and childhood exposure to interparental violence. Participants reported on the form and frequency of these maltreatment experiences using objective behavioral descriptors. This measure has demonstrated effectiveness at discriminating

among long-term outcomes of various maltreatment subtypes (Briere & Runtz, 1990) and is often shortened and modified for use in ways similar to this investigation (Babcock, Miller, & Siard, 2003; McNutt, Carlson, Persaud, & Postmus, 2002). Emotional abuse was assessed with 14 items that captured how often the individual was yelled at, insulted, criticized, and humiliated by each caregiver during a typical childhood year. Each item was rated on a 7-point scale ranging from 0 (*never*) to 7 (*more than 20 times*) yielding two scores reflecting frequency of emotional maltreatment by mother (seven items, $\alpha = .91$) and frequency of emotional maltreatment by father (seven items, $\alpha = .91$). Emotional maltreatment scores were averaged across parents, if both were rated, to create a total emotional abuse frequency variable. Analyses were initially conducted separately for emotional abuse by mothers, emotional abuse by fathers, and emotional abuse averaged across both parents. No differences were found between perpetration by mothers and by fathers, so the variable representing abuse averaged across parents was used for all reported results. Physical abuse was defined as a caregiver doing something to the child on purpose (e.g., hitting, punching, cutting, or pushing the child) that made the child bleed, gave her or him bruises or scratches, or broke bones or teeth. Participants endorsing child physical abuse rated the frequency of such events with a single item ranging from 1 (*1 time*) to 7 (*more than 50 times*). Exposure to domestic violence was defined as the participant having seen or heard one parent hit or beat up the other parent. Frequency of exposure was rated with a single item ranging from 1 (*1 time*) to 7 (*more than 50 times*).

The Child Abuse and Trauma Scale (CATS; Sanders & Becker-Lausen, 1995), was used to assess the frequency of childhood sexual abuse. The sexual abuse subscale of the CATS consists of six items (e.g., "Did your relationship with your parents ever involve a sexual experience," $\alpha = .76$), each rated on a 5-point scale from 0 (*never*) to 4 (*always*). The CATS has documented concurrent validity with objective measures of childhood sexual abuse and strong internal consistency and reliability in college student populations (Sanders & Becker-Lausen, 1995).

EMOTION REGULATION

Emotion regulation was assessed with the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), a 36-item measure with six subscales including impulse control difficulties (e.g., "When I'm upset, I lose control over my behaviors") and lack of emotional awareness (e.g., "When I'm upset, I acknowledge my emotions"), which were used in this study, as well as a total score. Items were rated on a 5-point scale, measuring how often each descriptor applied to the participant, with scores ranging from 1 (*almost never or 0–10% of the time*) to 5 (*almost always or 91–100% of the time*). The measure demonstrated adequate reliability in this sample (36-item

total score $\alpha = .94$, 6-item impulse control difficulties $\alpha = .87$, and 6-item lack of emotional awareness $\alpha = .83$). The DERS shows strong internal consistency in other college student populations and good construct validity (Sloan & Kring, 2007).

Specific dimensions of the emotion regulation construct were assessed further with the Reactive Anger scale of the State–Trait Anger Scale (STAXI; Spielberger, Jacobs, Russell, & Crane, 1983) and the Toronto Alexithymia Scale–20 (TAS–20; Bagby, Parker, & Taylor, 1994). The STAXI Reactive Anger Scale assesses the tendency toward anger in response to environmental triggers (e.g., “I generally feel furious when criticized in front of others”), with six items rated on a 4-point scale ranging from 1 (*almost never*) to 4 (*almost always*; $\alpha = .80$). The TAS–20 assesses alexithymia, or difficulty in recognizing and describing one’s emotions, on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*; $\alpha = .85$). Both scales have demonstrated good internal consistency and reliability in previous work (Bagby et al., 1994; Spielberger et al., 1983). For the mediation analyses, impulse control difficulties on the DERS and the Reactivity Anger Scale of the STAXI were used to create a composite variable impulsivity, and lack of emotional awareness on the DERS and the total score on the TAS–20 were composited to form the variable alexithymia.

RELATIONSHIP VIOLENCE

The Conflict Tactics Scale (CTS; Straus, 1979) consists of 29 specific descriptions of partner violence perpetration and victimization events (58 items total) rated on a 7-point scale from 0 (*never*) to 6 (*more than 21 times*). No differences were found among subscale scores representing types of relationship violence (i.e., psychological, physical, sexual) in relations with other variables. Therefore, total relationship violence victimization (23 items; $\alpha = .83$) and perpetration (23 items; $\alpha = .85$) were used here. The negotiation subscale, representing nonviolent conflict resolution, was not used in this analysis. The CTS has demonstrated good reliability and validity, especially among the psychological, physical, and sexual violence subscales used here (Straus, 1979).

Data Preparation

All data were examined for nonnormality (i.e., skewness > 2 , kurtosis > 7 ; Curran, West, & Finch, 1996). A natural logarithm was used to transform select variables to render parametric statistics valid. Maltreatment scores for domestic violence (skew = 2.74 and kurtosis = 7.66 before transformation; skew = 1.64 and kurtosis = .775 after transformation), physical abuse (skew = 3.24 and kurtosis = 10.04 before transformation; skew = 2.32 and kurtosis = 3.46 after transformation), and sexual abuse (skew = 3.37 and kurtosis = 13.72

before transformation; skew = 2.21 and kurtosis = 4.15 after two transformations) were transformed. In addition, both relationship violence perpetration (skew = 2.25 and kurtosis = 6.41 before transformation; skew = 1.29 and kurtosis = 1.26 after transformation) and victimization (skew = 2.73 and kurtosis = 10.14 before transformation; skew = 1.48 and kurtosis = 2.00 after transformation) were transformed.

RESULTS

Descriptive Statistics and Bivariate Correlations

As shown in Table 1, participant reports of childhood emotional abuse were positively related to difficulties in emotion regulation ($r = .335, p < .001$) and increased relationship violence perpetration ($r = .208, p < .001$) and victimization ($r = .170, p < .001$). Similar relations were evident for these outcomes with childhood sexual abuse ($r = .203, p < .001$; $r = .142, p < .001$; $r = .132, p < .001$), physical abuse ($r = .071, p < .001$; $r = .097, p < .001$; $r = .063, p = .032$) and domestic violence exposure ($r = .115, p < .001$; $r = .095, p = .001$; $r = .067, p = .024$). However, relative to emotional abuse, the magnitude of these relations was considerably smaller for the other types of maltreatment, with the relation between physical abuse and alexithymia being nonsignificant ($r = .019, p = .376$). Participants endorsing difficulties with emotion regulation, particularly in the domain of impulsivity, reported higher levels of relationship violence perpetration ($r = .256, p < .001$ for impulsivity) and victimization ($r = .227, p < .001$ for impulsivity).

Table 1 also displays descriptive statistics and bivariate correlations for the study variables by gender. Emotional abuse generally had stronger effects for females, whereas other types of maltreatment had similar effects for both genders. In addition, the relation between difficulties in emotion regulation and relationship violence was stronger for females than males.

A two-way multivariate analysis of variance (MANOVA; Gender \times Ethnicity) revealed significant main effects for gender (Wilks's $\lambda = .95$), $F(9, 1052) = 6.77, p < .001$, and ethnicity (Wilks's $\lambda = .91$), $F(27, 3073) = 3.18, p < .001$, but not their interaction. Females reported higher levels of sexual abuse ($F = 20.94, p < .001$), difficulties in emotion regulation ($F[1, 1055] = 10.69, p = .001$), relationship violence perpetration ($F[1, 1055] = 6.14, p = .013$), and marginally higher levels of relationship violence victimization ($F[1, 1055] = 2.93, p = .087$) than males. Bonferroni corrected post-hoc comparisons confirmed that Asians and others reported more emotional abuse than Hispanics ($p < .001$ and $p = .001$, respectively). Asians also reported significantly more difficulties in emotion regulation than Hispanics ($p = .045$) and Whites ($p = .008$). Whites reported fewer difficulties with emotional awareness than Hispanics and Asians ($p = .012$ and $p < .001$, respectively), whereas Asians reported more impulsivity than Hispanics ($p = .003$) and Whites ($p = .016$).

TABLE 1 Descriptive Statistics and Bivariate Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	<i>n</i>	<i>M</i>	<i>SD</i>
Maltreatment history												
1. Emotional abuse	—	.301***	.202***	.231***	.335***	.366***	.187***	.208***	.170***	2,169	41.29	19.62
2. Physical abuse	.206***	—	.114***	.238***	.071***	.127***	.019	.097***	.063*	2,134	.41	1.24
	.348***											
3. Sexual abuse	.178***	.038	—	.149***	.203***	.212***	.148***	.142***	.132***	2,061	7.00	2.45
	.211***	.147***										
4. Domestic violence	.201***	.178***	.089*	—	.115***	.129***	.062**	.095**	.067*	2,124	.48	1.18
	.243***	.260***	.171***									
Emotion regulation												
5. Total difficulties in emotion regulation	.267***	.070#	.262***	.127***	—	.729***	.617***	.150***	.156***	2,165	84.21	22.17
	.370***	.071**	.172***	.106***								
6. Impulsivity	.332***	.147***	.267***	.121**	.712***	—	.322***	.256***	.227***	2,169	.001	.85
	.393***	.121***	.195***	.137***	.742***							
7. Alexithymia	.178***	.010	.226***	.077*	.648***	.284***	—	.065*	.082**	2,169	.000	.87
	.195***	.029	.121***	.063*	.560***	.339***						
Relationship violence												
8. Perpetration	.187***	.096#	.079	.088#	.063	.162**	.007	—	.815***	1,175	31.74	11.99
	.214***	.095**	.151***	.090*	.174***	.302***	.095**					
9. Victimization	.178***	.034	.052	.027	.068	.140**	.060	.876***	—	1,174	31.85	13.48
	.165***	.074*	.154***	.075*	.188***	.270***	.096**	.793***				
<i>n</i>	788	780	754	775	788	789	789	368	367			
<i>M</i>	1,375	1,351	1,301	1,343	1,372	1,374	1,375	803	803			
	40.54	.35	6.77	.36	83.32	.05	.08	30.45	31.07			
<i>SD</i>	41.69	.45	7.14	.56	84.76	-.03	-.04	32.34	32.21			
	19.15	1.13	2.46	.99	20.39	.85	.82	10.74	13.56			
	19.86	1.30	2.44	1.27	23.13	.85	.90	12.50	13.44			

Note: Statistics for the total sample above the diagonal; split by gender below the diagonal: males above females. #*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

No differences in relationship violence were found across ethnic groups. Because Asians differed from each of the other ethnic groups on several key variables (emotional abuse and emotion regulation), remaining analyses were done comparing Asians to all non-Asians.

Relationship Violence Predicted by Maltreatment History

Linear regressions predicted each relationship violence outcome from all types of child maltreatment (see Table 2). Results confirmed that child maltreatment significantly predicted both violence perpetration ($R^2 = .046$, $p < .001$) and violence victimization ($R^2 = .035$, $p < .001$), with emotional abuse emerging as the strongest predictor among all types of maltreatment ($\beta = .145$, $p < .001$ for perpetration and $\beta = .134$, $p < .001$ for victimization). Physical abuse did not significantly predict either relationship violence outcome after controlling for the other types of maltreatment. Sexual abuse predicted both relationship violence perpetration ($\beta = .087$, $p = .005$) and victimization ($\beta = .089$, $p = .004$). Domestic violence exposure contributed significantly to explaining violence perpetration ($\beta = .065$, $p = .04$), but not victimization ($\beta = .045$, $p = .155$).

The Mediating Role of Emotion Regulation

Mediation analyses were conducted to determine the mechanism by which emotional abuse predicted relationship violence, following Baron and Kenny's (1986) procedures. Regression analyses evaluated each step of mediation, with physical abuse, sexual abuse, and exposure to domestic violence included as covariates. Analyses confirmed that emotional abuse predicted both violence perpetration ($\beta = .145$, $p < .001$) and victimization ($\beta = .134$, $p < .001$), as well as global difficulties in emotion regulation ($\beta = .340$, $p < .001$). Further, emotion regulation difficulties predicted violence perpetration ($\beta = .067$, $p = .041$) and victimization ($\beta = .090$, $p = .006$). After controlling for emotion regulation difficulties, emotional abuse was a

TABLE 2 Simultaneous Regression Models Predicting Relationship Violence From Maltreatment History

	Violence perpetration		Violence victimization	
	β	p	β	p
Emotional abuse	.145	< .001	.134	< .001
Physical abuse	.009	.773	-.016	.618
Sexual abuse	.087	.005	.089	.004
Domestic violence exposure	.065	.036	.045	.155
Total model R^2 , Adjusted R^2 , F	.046, .042, 12.749*		.035, .032, 9.723*	

* $p < .001$.

weaker predictor of relationship violence perpetration ($\beta = .123, p < .001$) and victimization ($\beta = .104, p = .003$). The Sobel test (Sobel, 1982) confirmed the presence of partial mediation for both perpetration ($z = 2.205, p = .027$) and victimization ($z = 2.533, p = .011$). Both models were significant ($F[5, 1067] = 11.036, p < .001, R^2 = .049$ for perpetration, $F[5, 1066] = 9.293, p < .001, R^2 = .042$ for victimization).

Multiple Mediation by Emotion Regulation

Analyses were conducted to test the hypothesis that emotion regulation is a multidimensional construct, with diverging aspects of emotion regulation explaining the relation between emotional abuse and relationship violence to differing degrees. Following Preacher and Hayes (2008), multiple mediation models evaluated the differential strength of alexithymia and impulsivity as possible mediators underlying observed relations between childhood emotional abuse and relationship violence, and capturing cognitive and behavioral elements of emotion regulation. As in the unidimensional model, childhood physical abuse, sexual abuse, and exposure to domestic violence were included as covariates. The model revealed significant mediation, with the effect of emotional abuse on relationship violence decreasing to $\beta = .079, p = .020$ for perpetration (R^2 total model = .080, $p < .001$) and $\beta = .072, p = .037$ for victimization (R^2 total model = .061, $p < .001$). Impulsivity emerged as a stronger mediator in both models, with the indirect effect of emotional abuse on violence perpetration through impulsivity emerging as $\beta = .074, p = .011$ compared to the indirect effect of $\beta = -.008, p = .394$ through alexithymia. Results were similar for the victimization model, with a significant indirect effect through impulsivity ($\beta = .064, p = .014$), but not through alexithymia ($\beta = -.002, p = .472$).

Moderation of Multiple Mediation Model by Gender and Ethnicity

Finally, the multiple mediation model was tested to see if findings differed between males and females as well as between Asians and non-Asians. Models were run separately for each subgroup (see Figures 1 and 2). Moderation was confirmed for gender, with mediation results holding for females but not for males. In males, emotion regulation did not predict violence perpetration or victimization, and therefore mediation by emotion regulation was not present. However, the mediation model was significant for females, with the direct effect of emotional abuse on relationship violence dropping to $\beta = .041, p = .320$, for violence perpetration and $\beta = .019, p = .660$, for violence victimization, after controlling for impulsivity and alexithymia. Modest ethnic differences emerged as well, with the multiple mediation model most effective for non-Asians, although mediation remained significant for both groups. Post-hoc exploratory analyses further

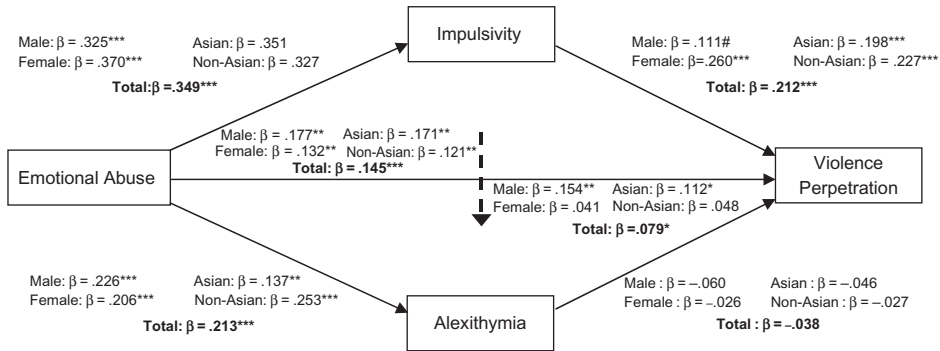


FIGURE 1 Relation Between Emotional Abuse and Relationship Violence Perpetration Mediated by Impulsivity and Lack of Emotion Awareness: Moderated by Gender and Ethnicity.

Note: Childhood physical abuse, sexual abuse and domestic violence exposure were included as covariates; statistics in bold type represent the total sample.

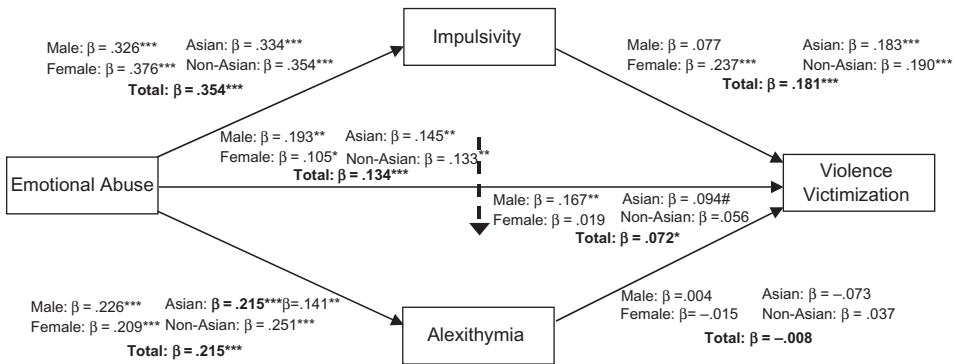


FIGURE 2 Relation Between Emotional Abuse and Relationship Violence Victimization Mediated by Impulsivity and Lack of Emotion Awareness: Moderated by Gender and Ethnicity.

Note: Childhood physical abuse, sexual abuse, and domestic violence exposure were included as covariates; statistics in bold type represent the total sample.

probed the Asian subgroup as a function of their immigrant status (29.6% of this group was born outside the United States). Within Asians, the model remained significant for those born in the United States, but mediation by impulsivity dropped to nonsignificant levels ($p = .134$ for perpetration, $p = .145$ for victimization) for those born outside the United States.

DISCUSSION

As the foundation of future generations, adult intimate relationships are an especially salient domain for understanding the long-term impact of child emotional maltreatment and preventing its transmission to subsequent

generations. This investigation examined the relation between childhood emotional maltreatment and relationship violence in young adulthood among a large, ethnically diverse, college student sample. Adopting a developmental process perspective, this study examined global emotion regulation as a potential explanatory mechanism underlying this pathway, as well as the contribution of specific cognitive and behavioral components of emotion regulation to the explanation of relationship violence.

The findings reported here support prior indications of unique relations between childhood emotional abuse and relationship violence in adulthood (Bender et al., 2003; Crawford & Wright, 2007; Dodge-Reyome, 2010; Simonelli et al., 2002; Wekerle et al., 2009). Childhood emotional abuse predicted both relationship violence victimization and perpetration above and beyond the contributions of childhood physical abuse, sexual abuse, and domestic violence exposure. This finding extends the extant literature on emotional maltreatment and relational health to highlight partner violence as an indicator of maladaptive relational outcomes. Moreover, childhood emotional abuse was by far the most robust predictor of relationship violence, compared to other types of maltreatment. This finding supports the growing body of work suggesting that emotional abuse is an especially pernicious form of maltreatment that warrants greater research and clinical attention.

Clinical efforts to address the deleterious effects of emotional abuse will be furthered to the extent that empirical investigations clarify the specific developmental processes by which emotional abuse eventuates in maladaptive outcomes. In this study, emotion regulation emerged as a significant mediator of the observed relation between childhood emotional abuse and relationship violence. Consistent with the broader literature on emotion regulation and positive development (Durbin & Shafir, 2008; Parke, McDowell, Cladis, & Leidy, 2006; Silk, Shaw, Forbes, Lane, & Kovacs, 2006), these findings point to the need for efforts to protect and support core emotion regulation capacities in all children, particularly in those who have been exposed to emotional maltreatment. Recent reviews point to the promise of interventions that promote emotional competence through teacher training in modeling or reward-based programs, home-based parenting programs, or multipronged home- and school-based interventions (Izard, 2002; Raver, 2002). For example, children attending Head Start and receiving the Emotion Based Program evidence significant improvements in emotional competence, as well as subsequent indirect improvements in social competence (Izard et al., 2008). The findings reported here also extend the literature on maltreatment and coping deficits, suggesting that emotion regulation might be a particularly important influence on coping when it comes to intimate relationships, perhaps via its influence on the ability to engage in positive, goal-directed behavior in emotionally charged situations.

The data further suggest that effective efforts to support adaptive emotion regulation might be tailored to target specific behavioral and cognitive

deficits in emotion regulation. Emotion regulation emerged as a multifaceted construct with important cognitive and behavioral elements that evidenced differential salience for understanding the long-term effects of emotional abuse on relationship violence. Specifically, the multiple mediation model examining cognitive and behavioral components of emotion regulation revealed that impulsivity was a stronger mediator than alexithymia of the relation between childhood emotional abuse and relationship violence. Although alexithymia was related to emotional abuse, as previous research has suggested (Berenbaum, 1996; Hund & Espelage, 2006; Mazzeo & Espelage, 2002), it was not related to either violence perpetration or victimization after controlling for impulsivity.

These findings suggest that emotion regulation significantly explains the relation between emotional abuse and relationship violence; however, this relation is driven by behavioral components of emotion regulation more so than by cognitive ones. Although victims of childhood emotional abuse do evidence deficits in emotional awareness and processing (the first step to regulating emotions in a stressful situation), deficits in the second part of that process (the behavioral or response enactment phase), appear to drive the outcome of relationship violence. These data are consistent with prior research documenting risk factors for violence perpetration, including a general tendency toward anger, lack of coping strategies, acceptance of violent coping strategies, and the propensity to choose reactive anger as a coping strategy (Riggs, Caulfield, & Street, 2000). Furthermore, the greater explanatory power of the multiple mediation model supports previous assertions that emotion regulation is a multidimensional construct, and that its developmental significance is best understood in consideration of that complexity (Gratz & Roemer, 2004). However, the data suggest that such models can also vary across gender and ethnic groups.

The mediation model explained observed pathways for females and for non-Asians to a greater degree than for male or Asian participants. The model was unsuccessful in explaining the link between childhood emotional abuse and relationship violence of either type for males. The absence of a mediating relation between emotion regulation and relationship violence among males is surprising given that the bulk of the literature on the role of anger and coping deficits in violence perpetration has been done exclusively with males (Cohen et al., 2003; Riggs et al., 2000). The data reported here suggest that other mechanisms (e.g., substance use, stress; Anderson, 2002; Riggs et al., 2000) might account for observed relations between emotional abuse and relationship violence among males, or perhaps specifically among male college students. Indeed, the presence of only partial mediation indicates that other mechanisms in addition to emotion regulation are involved in pathways from emotional maltreatment to relationship violence, and this might be particularly true for males and for Asians. Little research has been done on domestic violence in the Asian population. Research is

similarly lacking on maltreatment among Asian ethnic groups, although preliminary data suggest that maltreatment and its sequelae might differ in meaningful ways within and across Asian ethnic groups and warrant further attention (Kim, Lau, & Chang, 2007). Although information about the specific ethnic makeup of the Asian population in the sample was unavailable, exploratory analyses suggested that the diminished ability of the model to explain the relation between childhood emotional abuse and relationship violence for Asians might reflect differences in immigrant status, with the model failing to explain these patterns for Asians who were not born in the United States.

These data are among the first to clarify specific pathways among child emotional abuse, cognitive and behavioral elements of emotion regulation, and relationship violence. However, as noted previously, the presence of partial mediation suggests that other developmental systems (e.g., the self-system; Briere & Runtz, 1990; Gross & Keller, 1992) might also be important in understanding the long-term effects of emotional abuse. Alternately, emotion regulation could contribute to relational outcomes via indirect pathways not explored here. For example, maltreated children are often victims of peer rejection due to difficulties in emotion regulation that manifest during the early school years (Feiring & Furman, 2000). This rejection might lead to identification with deviant peer groups. If continued into adulthood, this pathway could explain why victims of emotional maltreatment end up with romantic partners who also might have been rejected by peers, and perhaps are more aggressive (Ehrensaft et al., 2003). Further, these processes might vary in explaining relationship violence perpetration versus victimization.

Although not apparent in this study, some evidence suggests that pathways to violence perpetration are distinct from those toward victimization. Research has identified numerous risk factors for relationship violence victimization that hinge on cognitive and emotional characteristics of the victim, including depression, traumatic stress, and substance abuse (Anderson, 2002; Riggs et al., 2000). In addition, cognitive variables such as self-concept and lack of personal control have been examined for their role in victimization (Anderson, 2002; Gelles, 1985; Umberson, Anderson, Glick, & Shapiro, 1998). However, it is often difficult to ascertain whether these are risk factors for victimization, outcomes of victimization, or cooccurring consequences of a common risk factor such as child maltreatment. Although individual studies of perpetration or victimization have identified unique predictors for each, most of these studies have not examined perpetration and victimization in the same sample. High levels of comorbidity between perpetration and victimization might complicate efforts to elucidate specific predictors of each (Ehrensaft et al., 2003).

The sample reported here evidenced significant violence overlap, with 80% of respondents endorsing nearly equal amounts of perpetration and victimization. Indeed, some have posited that the reciprocity of relationship

violence is such that relationship violence perpetration and victimization might explain one another to a greater extent than outside factors (Swan & Snow, 2006). In support of this assertion, Anderson (2002) found that victimization actually mediated the relation between risk factors and perpetration. Comorbidity both obscures potential contributing factors and complicates interpretation of the findings. For example, it is interesting that impulsivity partially mediated the relation between emotional abuse and relationship violence victimization in this sample, because impulsivity has not yet been associated with victimization. It might be that the behavioral component of an emotion regulation deficit prevents the victim from enacting a goal-directed response to violence (i.e., leaving the situation), even when cognitively he or she recognizes it as an appropriate option. However, it might also be that impulsivity was an explanatory mechanism for underlying perpetration, and only emerged in this sample as connected with victimization because of the overlap in endorsements and the reciprocal nature of the phenomena. Similarly, although the hypothesis that alexithymia would be uniquely related to victimization was not supported in this investigation, this relation might emerge in future studies that focus on victimization occurring independently of perpetration.

This study contributes to the extant literature in several ways. First, the findings stress the importance of childhood emotional abuse as a critical predictor of later adjustment difficulties, particularly in intimate relationships, above and beyond other types of child maltreatment. Second, this study provides evidence for the emerging conceptualization of emotion regulation as a multidimensional construct, highlighting specific cognitive and behavioral deficits. Third, this study demonstrates that a developmental process perspective is imperative when examining the pathways from childhood abuse to adult outcomes, especially when considering clinical applications. Finally, the findings point to a specific mechanism that is new to the emerging literature on maltreatment and relationship violence: emotion regulation.

Nevertheless, the significance of these findings must be considered in light of limitations in the study design. First, although this sample is notable for its size and ethnic diversity, the representativeness of a college student sample to the broader population is limited. Yet, although limited in age range, the sample represented an age range that is characterized by marked risk for dating violence (Capaldi, Shortt, & Kim, 2005; Wilt & Olson, 1996), and perhaps was more clinically relevant than a sample of varied ages. However, as noted previously, the absence of significant mediation findings among males might reflect a misspecified model for males, or, perhaps more likely, for males attending college and particularly male psychology students, a group that consistently evidences meaningful differences with males not in college (Smart, 1966).

Second, the cross-sectional design of this study constrains the ability to evaluate directional hypotheses regarding cause and effect. In light of this

design, it cannot be surmised that emotional abuse causes emotion regulation difficulties that, in turn, contribute to relationship violence. Rather, one is limited to saying that the observed findings are consistent with an overall model wherein these relations hold. Although emotion regulation difficulties might follow from relationship violence, emotion regulation was selected as a process variable that is conceptually likely to cause developmental change because it relates to a coping process rather than a state of mind (e.g., depression), which is more likely to follow from relationship violence.

Third, the obtained data were acquired through self-report measures exclusively. As such, interrelations among variables could be elevated as a function of shared method variance. Further, self-report has particular limitations where maltreatment is concerned because of its retrospective nature. However, a recent review of the literature on retrospective reports of adverse childhood experiences indicates that errors of omission (i.e., failure to report negative events) are more common than false positive reporting. These authors conclude that the use of retrospective reports is appropriate in a research context unless detailed information is necessary (Hardt & Rutter, 2004). Despite these limitations, however, it is clear that these findings have significance for ongoing empirical investigations of childhood emotional abuse and efforts to ameliorate its negative effects.

Childhood emotional abuse is a tangible, quantifiable risk to healthy development. The data reported here suggest that recurrent experiences of rejection, humiliation, and isolation by caregivers exact a powerful and enduring toll on adaptation with effects evident well into young adulthood. Emotion regulation appears to be a promising target for understanding such pathways, and for correcting pathological developmental trajectories toward interpersonal difficulties. Although emotion regulation has garnered increasing attention as a central mechanism of psychopathology (Cicchetti, Ackerman, & Izard, 1995; Gross & Munoz, 1995), less attention has been directed to the added value of attending to specific aspects of the emotion regulation construct in understanding particular forms of pathological functioning. These findings suggest that emotion regulation globally, and particularly behavioral aspects of such regulation, are critically important for fostering adaptive relationship skills among children exposed to emotional abuse. Further, evidence of gender and ethnic differences in these processes and pathways bolster calls for socioculturally sensitive prevention and intervention efforts. Although these findings warrant replication using diverse samples and longitudinal research designs, the data provide convincing support for the enduring and damaging effects of child emotional maltreatment through more proximal developmental processes. As in previous studies, emotional abuse emerged as the most salient predictor of later difficulties, and yet it remains the most difficult to detect and identify (O'Hagan, 1995). These findings and the arguments they support confirm the need for increased funding for treatment, child welfare, and research efforts focused on childhood emotional maltreatment.

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