

Distinct emotion regulation skills explain psychopathology and problems in social relationships following childhood emotional abuse and neglect

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Abstract

Efforts to differentiate between the developmental sequelae of childhood emotional abuse and childhood emotional neglect are critical to both research and practice efforts. As an oft-identified mechanism of the effects of child maltreatment on later adjustment, emotion dysregulation represents a key potential pathway. The present study explored a higher order factor model of specific emotion regulation skills, and the extent to which these skill sets would indicate distinct developmental pathways from unique emotional maltreatment experiences to multidomain adjustment. A sample of 500 ethnographically diverse college students reported on their experiences. A two-factor model of emotion regulation skills based on subscales of the Difficulties in Emotion Regulation Scale was revealed. Significant indirect effects of childhood emotional abuse on psychopathology and problems in social relationships were found through response-focused difficulties in emotion regulation, whereas a significant indirect effect of childhood emotional neglect on problems in social relationships was found through antecedent-focused difficulties in emotion regulation. These results are consistent with theoretical models and empirical evidence suggesting differential effects of childhood emotional abuse and emotional neglect, and provide an important indication for developing targeted interventions focusing on specific higher order emotion dysregulation skill clusters.

Keywords: emotional abuse; emotional neglect; emotion regulation; psychopathology; social relationships

Efforts to understand pathways to maladjustment following experiences of child maltreatment are critical to supporting the development of targeted interventions with the greatest potential for both efficiency and effectiveness. Though all experiences of child maltreatment have the potential to disrupt adaptive development (see Cicchetti & Valentino, 2006, for review), emotional maltreatment both occurs at a higher rate (Claussen & Crittenden, 1991; Spinazzola et al., 2014) and has been demonstrated to have a more pernicious influence (Hart, Binggeli, & Brassard, 1997; Spertus, Yehuda, Wong, Halligan, & Seremetis, 2003; Spinazzola et al., 2014) than childhood physical and sexual abuse. Although it is difficult to ascertain the precise rate at which children experience emotional maltreatment, reports suggest it may be anywhere from 3/1000 when measured by informant report to 363/1000 when measured by self-report (Stoltenborgh, Bakermans-Kranenburg, Alink, & van Ijzendoorn, 2012).

Emotional maltreatment can be broadly defined as a pattern of parental behavior that threatens a child's sense of self and security according to the child's specific vulnerabilities. This behavior involves both acts of commission and omission by parents that send a message to children that they are deficient, unwanted, or unsafe in one or more ways

(McGee & Wolfe, 1991; Taillieu, Brownridge, Sareen, & Afifi, 2016). This experience is not, however, homogenous, and can be classified more accurately by separately assessing emotional abuse and emotional neglect (Ney, Fung, & Wickert, 1994; Taillieu et al., 2016). Emotional abuse is characterized by parents' aggression toward children that is not physical in nature and can take the form of denigrating comments, humiliation, or terrorizing threats, whereas emotional neglect is characterized by the absence of traditionally provided parental emotional supports, such as belonging and encouragement (Bernstein & Fink, 1998). In a large, nationally representative adult sample, Taillieu et al. (2016) found that of 5,126 participants who reported experiencing childhood emotional maltreatment, 33.7% had experienced only emotional abuse, 43.4% had experienced only emotional neglect, and 22.9% had experienced both. Although specific estimates of these rates may vary across samples, this report provides clear evidence that these divergent presentations of childhood emotional maltreatment represent distinct targets for investigation. Despite a notable rate of overlap, these figures suggest that experiencing emotional abuse or emotional neglect in isolation also occurs far too frequently for these experiences to be consistently conflated in research. Therefore, the present study used a structural equation modeling framework to examine the effects of childhood emotional abuse and childhood emotional neglect on young adult psychopathology and problems in social relationships, and the extent to which

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specific emotion regulation skill deficits account for distinct pathways to these outcomes. This approach is particularly appropriate because it allows for unique contributions of emotional abuse and emotional neglect to be examined, while modeling a correlation between these predictors to acknowledge and account for their potential overlap.

Effects of Emotional Maltreatment on Psychopathology and Problems in Social Relationships

Studies have demonstrated with increasing consistency that emotional abuse and emotional neglect precipitate distinct consequences for adjustment (Ney et al., 1994; Taillieu et al., 2016). Specifically, emotional abuse is robustly associated with mood disorders, personality disorders, and substance use disorders, whereas emotional neglect has also been associated with these disorders, but not nearly as strongly or as consistently (Taillieu et al., 2016). Emotional abuse is also implicated in low self-esteem (Mullen, Martin, Anderson, Romans, & Herbison, 1996) and interpersonal difficulties (Dodge-Reyome, 2010; Perry, DiLillo, & Peugh, 2007). However, multiple studies indicate that emotional neglect may be more strongly associated with social competence deficits than emotional abuse (Ometto et al., 2016; Paradis & Boucher, 2010).

These distinct consequences are likely the result of distinct developmental mechanisms (e.g., particular neural activation pathways associated exclusively with emotional neglect vs. abuse; White et al., 2012) that are as yet largely unexplored. Diverging developmental pathways and outcomes are probabilistic given qualitative differences in the experiences of these types of maltreatment. For example, although both emotional abuse and emotional neglect reflect attacks on the child's emotional well-being, the specific messages conveyed and subsequent effects on the child's internal working models of self and others may differ (Waldinger, Toth, & Gerber, 2001; Wright, Crawford, & Del Castillo, 2009). Likewise, although both emotional abuse and emotional neglect exist in a hostile family emotional climate, the specific models of emotional responding provided to the child may differ (i.e., unpredictable and invalidating vs. absent; Edwards, Shipman, & Brown, 2005; Shipman et al., 2007). Therefore, it is expected that both distinct experiences of emotional maltreatment will be associated with problematic adjustment, particularly in the domains of psychopathology and social relationships; however, the mechanisms and strength of effects will differ.

Emotion Regulation as a Mechanism

Emotion regulation is an attractive candidate mechanism for a pathway from child maltreatment to later maladjustment. As examined in the present study, emotion regulation refers to the extent to which emotions are adaptively experienced and modulated, and includes flexibly processing, accepting, and responding to a range of emotions. This conceptualization emphasizes that emotion regulation is composed of a

multidimensional set of skills, and is not synonymous with reduction in negative affect or use of any specific strategy (Gratz & Roemer, 2004). When examining mental health and social relationships as adaptive outcomes of emotional maltreatment, both are heavily influenced by the way in which individuals understand and respond to challenging situations. Inability to respond appropriately when frustrated or disappointed in a social situation may result in lingering negative self-representations and associated psychopathological symptoms (Beck, 2008; Bellmore & Cillessen, 2006; Borelli & Prinstein, 2006; Coates & Messman-Moore, 2014; Jimenez, Niles, & Park, 2010), and may also hinder the ability to develop positive relationships (Mahady Wilton, Craig, & Pepler, 2000; Penela, Walker, Degnan, Fox, & Henderson, 2015; Sung, 2014). Applying an organizational perspective to development, mastery of early skills in emotion competence during the preschool period is a building block for developing positive peer relationships in the early school-age period, and in turn for the prevention of psychopathology in adolescence and young adulthood (Cicchetti & Schneider-Rosen, 1986). Thus, although challenging interpersonal and individual situations may present themselves throughout the life span, one's response patterns to these situations are built early on in development. Just as emotion regulation is critical to lasting positive adjustment, the influence of a caregiver who provides both an emotionally supportive environment and an adaptive model of the way to deal with challenging situations is critical to developing adaptive emotion regulation skills (Calkins & Hill, 2007; Morris, Silk, Steinberg, Myers, & Robinson, 2007). Given the critical early influence of caregivers, emotional maltreatment has the potential to negatively impact the foundation of socioemotional development very early on in a multifaceted way.

Influences of Emotional Maltreatment on Emotion Regulation

A large body of work has documented the negative consequences of childhood emotional abuse in the domain of emotion regulation (Coates & Messman-Moore, 2014; Hager & Runtz, 2012; Krause, Mendelson, & Lynch, 2003). Moreover, emotional abuse has been found to be a stronger obstacle to developing adaptive emotion regulation skills than physical or sexual abuse (Berzenski & Yates, 2010; Burns, Jackson, & Harding, 2010). Similarly, childhood emotional neglect has evidenced effects on emotion regulation skills that are robust compared to other risk factors (Egeland, Sroufe, & Erickson, 1983; Erickson & Egeland, 2002; Manly, Kim, Rogosch, & Cicchetti, 2001), and has been associated with other manifestations of poor emotion regulation such as self-injurious behavior (Dubo, Zanarini, Lewis, & Williams, 1997; Gratz, Conrad, & Roemer, 2002). Thus, both emotional abuse and emotional neglect are hazardous for children's developing emotion regulation. Yet the multifarious nature of both emotional maltreatment and emotion regulation highlights the need not only to examine specific

experiences of emotional abuse and emotional neglect separately but also to find ways of unpacking the broadly defined set of skills that make up adaptive emotion regulation, to identify distinct pathways by which emotional abuse and neglect may exert their specific developmental influences.

Caregivers exert a powerful socializing influence on the development of emotion regulation skills, and this influence can manifest in a variety of ways that may be differentially vulnerable to emotional abuse and neglect. This characterization is not specific to emotional maltreatment, given evidence from studies of physical abuse and neglect that suggest both abusive and neglectful experiences fail to provide supportive environments in which children can express negative emotions (Edwards et al., 2005; Shipman, Edwards, Brown, Swisher, & Jennings, 2005; Shipman & Zeman, 2001), but that abused children also experience active invalidation of their experiences (Shipman et al., 2007), and have particular difficulties with emotion regulation skills surrounding expressing appropriate affect (Shields & Cicchetti, 1998). Chronic invalidation can lead to poor emotion regulation strategy use later in life (e.g., increased emotional inhibition or avoidance; Krause et al., 2003; Rosenthal, Polusny, & Follente, 2006), as children grow to believe their positive efforts at emotion regulation and/or expression are unacceptable.

Furthermore, the ways parents themselves cope with challenging situations provide children with models of appropriate and inappropriate emotion regulation (Morris et al., 2007; Thompson, 1994). In terms of emotional abuse, several authors have suggested that parents who frequently express negative emotions may themselves be more likely to have poor emotion regulation skills (Bariola, Gullone, & Hughes, 2011; Eisenberg et al., 2001), and may have more difficulty regulating hostile rather than nonhostile negative emotions toward children (Martini, Root, & Jenkins, 2004). If parents model maladaptive strategies (e.g., impulsive or aggressive) when challenging emotional situations arise, children may later find themselves with specific emotion regulation deficits that manifest in problematic strategy use (Silk, Shaw, Forbes, Lane, & Kovacs, 2006).

In contrast, rather than modeling maladaptive strategies, parents who perpetrate childhood emotional neglect may fail to even provide examples of any strategy use. Evidence for this comes from the body of work showing neglected children have overall poorer understanding of emotion than other children, given their reduced exposure to emotional models (Alegre, 2011; Pollak, Cicchetti, Hornung, & Reed, 2000; Sullivan, Bennett, Carpenter, & Lewis, 2008), and research that shows that children with lower levels of parental support use a reduced variety of coping strategies (Hardy, Power, & Jaedicke, 1993). The dearth of appropriate models of emotional responding may mean that children find themselves at a loss for potential strategies when challenging situations arise (Garber, Braafladt, & Zeman, 1991). Therefore, in contrast to victims of emotional abuse, children who experience emotional neglect may evidence specific deficits in emotion regulation centering around lack of general emotion and strategy awareness.

Unpacking Emotion Regulation

Thus, it is important not only to assess the effects of specific emotional maltreatment experiences on emotion regulation but also to be able to parse these effects along the lines of specific emotion regulation skills. In so doing, we can hope to more fully represent the differential mechanisms by which emotional abuse and neglect exert their influences on psychopathological and social development. Specifically, childhood emotional abuse is expected to be associated most robustly with deficits in response-focused aspects of emotion regulation. The response-focused aspects of emotion regulation involve reacting nonimpulsively and choosing and enacting appropriate strategies in challenging situations. Along with the invalidation and modeling theories described earlier as mechanisms by which emotional abuse leaves one particularly vulnerable to deficits in these skills, studies specifically associate childhood emotional abuse histories with later impulsivity and aggressive behavior (Berzenski & Yates, 2010; Corstorphine, Waller, Lawson, & Ganis, 2007; Gratz, Latzman, Tull, Reynolds, & Lejuez, 2011; Roy, 2005). In contrast, childhood emotional neglect is more likely to exert an influence on the antecedent-focused aspects of emotion regulation. The antecedent-focused aspects of emotion regulation involve awareness and understanding of emotions, and map on more to cognitive elements of the emotion regulation process. As mentioned earlier, these cognitive skills are particularly vulnerable to experiences of childhood emotional neglect, in which children lack emotional models. This idea is further supported by a large body of research that associates alexithymia (difficulty recognizing and understanding emotions in the self) with a history of emotional neglect (Aust, Härtwig, Heuser, & Bajbouj, 2013; Brown, Fite, Stone, & Bortolato, 2016; Carpenter & Chung, 2011; Frewen, Dozois, Neufeld, & Lanius, 2012; Güleç et al., 2013; Paivio & McCulloch, 2004). Many of these studies found a stronger association between alexithymia and emotional neglect than alexithymia and emotional abuse; however, these differences were not always consistent or appreciable, and were not often explicitly compared in the same model, as will be done in the present study. As an exception, in one such comparison, Jessar et al. (2015) found that childhood emotional neglect was uniquely linked to deficits in emotional clarity (understanding and distinguishing emotions), whereas childhood emotional abuse was not.

Beyond identifying effects specific to childhood emotional abuse and childhood emotional neglect, as in the present study, both broader academic and applied pursuits would benefit from unpacking the emotion regulation variable. Researchers have already long considered emotion regulation a multidimensional construct, and have taken care to measure specific component skills that index an overall emotion regulation factor (Gratz & Roemer, 2004; Thompson, Lewis, & Calkins, 2008). This conceptualization is crucial because although the overall construct of emotion regulation has been robustly associated with well-being (Aldao, Nolen-Hoek-

sema, & Schweizer, 2010), its subcomponents evidence distinct associations (Fox, Hong, & Sinha, 2008; Gross, 1998). Many effective emotion regulation-based interventions have already developed protocols that target improvement of distinct skills (Berking et al., 2008; Cloitre, Koenen, Cohen, & Han, 2002; Gratz & Gunderson, 2006); thus, it would be helpful to identify particular pathways from early experiences to later outcomes that rely on specific skills, such that interventions can be appropriately targeted for particular individuals.

However, beyond recognizing individual emotion regulation skills, there is utility in identifying higher order components of emotion regulation. There is potential for some skills to have similar antecedents and similar associated outcomes, and likely that clusters of related skills may form latent factors that signify important elements of the emotion regulation process. Explicating these higher order factors can facilitate the identification of developmental mechanisms that explain why particular socialization influences affect particular clusters of skills. From an intervention perspective, this is especially valuable. Whereas an intervention targeting just the broad construct of emotion regulation may not be focused enough to be effective, and certainly not for particular groups of individuals with common experiences, interventions targeting each individual emotion regulation skill separately, and for every participant, may not be the most efficient use of resources.

From a theoretical perspective, it is reasonable to expect that emotion regulation can be specifically defined by its antecedent- and response-focused elements. The designation is consistent with the process model of emotion postulated by Gross (1998), in which the first stage of regulation involves processing and understanding the emotional situation, and the second stage involves enacting and managing a response. This designation is also consistent with the complementary model of emotion in social information processing described by Lerner and Arsenio (2000). These models hold that the more cognitive antecedent-focused elements of emotion regulation such as awareness and understanding of emotional situations are distinct from the elements involved in enacting a response. Evidence suggests that each facet of the emotion regulation response is important for maintaining healthy social relationships (Adrian, Zeman, Erdley, Lisa, & Sim, 2011) and protective against psychopathology (Aldao et al., 2010; Grabe, Spitzer, & Freyberger, 2004), although the comparative strength of these relations has yet to be investigated. Nevertheless, while identifying these higher order constructs is important, it is also advisable to retain the lower order constructs that represent individual emotion regulation skills, as well as the overall broad construct of emotion regulation, as information at each level serves a valuable empirical and applied purpose.

Although it is well established that emotional maltreatment is associated with emotion dysregulation and maladjustment, the present study adds two valuable innovations to this body of work. First, the model examined herein is uniquely positioned to disentangle the distinct yet often overlapping

contributions of childhood emotional abuse and emotional neglect to developmental pathways and outcomes, adding clarity to the existing literature on these experiences. Second, the present study will deconstruct emotion regulation to identify specific subsets of skills that have clinical relevance and may explain the divergent effects of childhood emotional abuse and emotional neglect on adult outcomes. This novel approach to investigating and decomposing emotion regulation represents a step forward in examining this nuanced developmental process variable.

Aims and Hypotheses

The first aim of the present study was to unpack emotion regulation by conducting an exploratory factor analysis on the individual emotion regulation skills (i.e., subscales) assessed by an established measure, the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004).

Hypothesis 1a: It was expected that two higher order factors would emerge from this analysis, one representing response-focused emotion regulation skills and one representing antecedent-focused emotion regulation skills.

The second aim of the present study was to identify distinct pathways from childhood emotional abuse and childhood emotional neglect to young adult psychopathology and problems in social relationships, via deficits in specific emotion regulation skill sets. This was examined within a structural equation model that served first to cross-validate the exploratory factor analysis (conducted via holdout sample), and then to confirm expected structural pathways. This model tested the following hypotheses:

Hypothesis 2a: Childhood emotional abuse and childhood emotional neglect would both be associated with greater difficulties in overall emotion regulation at the bivariate level. In the full model, childhood emotional abuse would predict response-focused difficulties in emotion regulation more strongly than antecedent-focused difficulties, whereas childhood emotional neglect would predict antecedent-focused difficulties in emotion regulation more strongly than response-focused difficulties.

Hypothesis 2b: Given the comparatively weaker evidence for childhood emotional neglect predicting psychopathology, childhood emotional abuse would similarly predict both increased problems in social relationships and increased psychopathology (a composite of mood, anxiety, somatic, interpersonal, and psychotic disorder symptoms), whereas childhood emotional neglect would predict increased problems in social relationships more strongly than increased psychopathology.

Hypothesis 2c: Both antecedent- and response-focused difficulties in emotion regulation would predict increased psychopathology and increased problems in social relationships similarly.

Hypothesis 2d: Following the study's successful establishment of the relations described above, several indirect paths would be tested. Specifically, the direct effects of childhood emotional abuse on increased psychopathology and increased problems in social relationships would be mediated by significant indirect effects through response-focused difficulties in emotion regulation, and the direct effect of childhood emotional neglect on increased problems in social relationships would be mediated by a significant indirect effect through antecedent-focused difficulties in emotion regulation.

Method

Participants

Participants were 500 introductory psychology students (66.2% female, 30.6% male, and 3.2% declined to answer; 48.2% Hispanic, 23% White, 13.4% Asian, 5.8% mixed race, 5.6% Black, and 4% declined to answer; $M_{\text{age}} = 19.51$, $SD = 2.29$) at a West Coast regional public university. Although specific information about the socioeconomic status of the study participants was not available, during the semester in which the study was conducted, 62.3% of psychology students at this university received federal need-based education grants (i.e., Pell Grants), indicating a fair degree of economic diversity within the potential participant pool. Students were recruited through the university's research management system over a period of one semester, and were compensated with course credits. The only restriction on enrollment was that students had to be at least 18 years old.

Procedure

Participants completed a series of supervised computerized surveys on individual computers within a campus computer lab in groups of 20–25 at a time. The measures included in the present analyses were part of a larger set of surveys and computerized behavioral control tasks designed to investigate multidomain regulation that were conducted over a period of 1 hr. Participants were instructed that they were required to stay for the full hour so that there was no incentive to rush through the questions, and were informed that all responses were completely anonymous and electronically secure. Participants provided verbal informed consent so that no identifying information was collected at any point during the study. All procedures were approved by the institutional review board of the participating university.

Measures

Emotional maltreatment. Childhood emotional abuse and emotional neglect were assessed with the Childhood Trauma Questionnaire—Short Form (CTQ-SF; Bernstein et al., 2003). This 28-item measure contains items pertaining to childhood physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect, with 5 items per

scale (and 3 additional “minimization” items, which were not used in the present study). Participants endorsed the frequency with which items occurred when they were growing up, on a 5-point scale from 1 (*never true*) to 5 (*very often true*). Sample emotional abuse items include “People in my family called me things like ‘stupid,’ ‘lazy,’ or ‘ugly,’” and “I thought that my parents wished I had never been born.” Sample emotional neglect items include “There was someone in my family who helped me feel that I was important or special” and “I felt loved” (both reverse scored). Both scales evidenced excellent reliability in this sample (emotional abuse $\alpha = 0.866$, emotional neglect $\alpha = 0.887$). Childhood physical abuse ($\alpha = 0.779$), sexual abuse ($\alpha = 0.964$), and physical neglect ($\alpha = 0.673$) were used as covariates in this study.

Mean levels of each subscale of child maltreatment are reported in Table 1. The mean level of childhood emotional abuse in this sample, 8.57, is consistent with other published community samples reporting on the CTQ-SF (Bernstein et al., 2003; Paivio & Cramer, 2004; Scher, Stein, Asmundson, McCreary, & Forde, 2001), in which means range from 6.48 to 9.01, and appropriately lower than published clinical samples (Bernstein et al., 2003), in which means range from 9.60 to 12.50. The mean level of childhood emotional neglect in this sample, 9.37, is also consistent with published community samples, in which means range from 6.28 to 10.00, and lower than clinical samples, in which means range from 10.40 to 13.30. The mean levels of the other subscales of maltreatment were similarly consistent with published community norms. Further, 36.2% of the present sample would meet or exceed the cutoff for low severity childhood emotional abuse as specified in the CTQ-SF manual, and 39.6% would meet or exceed the cutoff for low severity childhood emotional neglect. Although these figures are presented for descriptive purposes, the remainder of analyses will use continuous variable scores.

Emotion regulation. Emotion regulation was measured using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). This 36-item scale contains items assessing the degree to which participants struggle with regulating emotions, according to the proportion of time they consider it a problem from 1 (*almost never/0%–10%*) to 5 (*almost always/91%–100%*). The DERS consists of six subscales: non-acceptance of emotional responses (6 items; e.g., “When I’m upset, I feel guilty for feeling that way”; $\alpha = 0.891$), difficulties engaging in goal-directed behaviors (5 items; e.g., “When I’m upset, I have difficulty thinking about anything else”; $\alpha = 0.883$), impulse control difficulties (6 items; e.g., “I experience my emotions as overwhelming and out of control”; $\alpha = 0.851$), lack of emotional awareness (6 items; e.g., “When I’m upset, I acknowledge my emotions [reverse coded]; $\alpha = 0.814$), limited access to emotion regulation strategies (8 items; e.g., “When I’m upset, I believe there is nothing I can do to make myself feel better”; $\alpha = 0.892$), and lack of emotional clarity (5 items; e.g., “I have difficulty making sense out of my feelings”; $\alpha = 0.830$). For the present

Table 1. Descriptive statistics and correlations among study variables

	1	2	3	4	5	6	7	8	9	Mean	SD
Emotional maltreatment											
1. Emotional abuse	—									8.566	4.298
2. Emotional neglect	.622***	—								9.367	4.355
Emotion regulation difficulties											
3. Nonacceptance of emotional responses ^a	.284***	.186***	—							13.131	5.857
4. Difficulties engaging in goal directed behaviors ^b	.117**	.094*	.406***	—						14.280	4.963
5. Impulse control difficulties ^a	.268***	.168***	.460***	.557***	—					11.936	4.935
6. Lack of emotional awareness ^a	.038	.169***	.117**	-.039	.103*	—				15.634	4.930
7. Limited access to emotion regulation strategies ^c	.337***	.247***	.626***	.602***	.681***	.112*	—			17.557	7.126
8. Lack of emotional clarity ^b	.171***	.189***	.413***	.246***	.396***	.462***	.453***	—		11.956	4.169
Adaptation											
9. Psychopathology	.448***	.295***	.530***	.467***	.607***	.109*	.657***	.429***	—	44.466	32.753
10. Problems in social relationships	.050	.129**	.091	.126*	.093	.278***	.225***	.227***	.222***	27.876	5.069

Note: Physical abuse $M = 7.168$, $SD = 3.196$; sexual abuse $M = 6.255$, $SD = 3.879$; physical neglect $M = 6.800$, $SD = 2.635$. ^a6 items; ^b5 items; ^c8 items
 * $p < .05$; ** $p < .01$; *** $p < .001$.

study, the six subscale scores were used as indicators in the exploratory factor analysis in order to determine higher order configurations of these skills.

Psychopathology. Psychopathology was assessed using the Brief Symptom Inventory (Derogatis, 1993). This 53-item measure indexes symptom levels across nine different categories of psychopathology: somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Participants are asked how much each symptom bothered them in the past week, rated on a scale from 0 (*not at all*) to 4 (*extremely*). The global symptom severity index (total score across all items) was used in these analyses ($\alpha = 0.963$).

Problems in social relationships. Problems in social relationships were assessed using the social competence subscale of the Resilience Scale for Adults (Friborg, Hjermadal, Rosenvinge, & Martinussen, 2003), reverse scored. This 7-item subscale is part of the 37-item measure designed to indicate competence across multiple domains including social, family, and personal (e.g., goal setting), rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale. Sample items on the social competence scale include “I easily establish new friendships” and “I enjoy being with other people.” The scale evidenced good reliability in the present sample ($\alpha = 0.863$).

Data preparation

All variables used in the present analyses were sufficiently normal so as to render parametric statistics appropriate (Afifi, Kotlerman, Ettner, & Cowan, 2007). Data were missing only on emotional abuse and emotional neglect (1% missing) and on problems in social relationships (18.6% missing). The problems in social relationships scale was administered at the very end of the survey, and some of the participants did not have time to finish the survey, hence the larger proportion of missing data on this measure compared to the others. Little’s missing completely at random test (Little, 1988) indicated that data were not missing completely at random, $\chi^2(16) = 27.465$, $p = .037$, and follow-up t tests revealed that missingness on problems in social relationships was related only to lower scores on DERS impulsive behaviors ($p = .008$). Therefore, the structural equation model analyses were conducted in MPlus v. 6.12 (Muthen & Muthen, 1998–2011) using maximum likelihood estimation to most appropriately account for nonrandomness in missing data.

Sex and race (dummy coded here as White/non-White, although all analyses were also tested including each racial category as a separate dummy coded variable, with equivalent results) were investigated as potential covariates in the model. In a multivariate analysis of variance on all outcome variables (problems in social relationships, psychopathology, and all emotion regulation variables), there were no significant multivariate effects of sex (Wilks $\lambda = 0.98$, $p = .575$), race (Wilks $\lambda = 0.99$, $p = .949$) or their interaction (Wilks $\lambda = 0.99$,

$p = .792$). Based on these results, neither sex nor race was included as a covariate in the final models presented here. However, the final model was also preliminarily tested, including sex and race as covariates on all paths, and no significant effects emerged, nor any differences in the other effects presented.

Analytic plan

An exploratory factor analysis was performed on the DERS subscales in order to determine the configuration of higher order emotion regulation skill constructs. This analysis was conducted on a holdout sample of approximately 25% of the total data, while 75% was reserved to analyze the structural equation model. This was accomplished by instructing the statistical software (SPSS 20; IBM Corporation, 2011) to select a random sample of 25% of cases, resulting in $N = 110$ for the exploratory factor analysis, and $N = 390$ for the structural equation model. This procedure allowed for the factor model to be cross-validated on an independent group of participants. The choice of the differential size distribution of cases across the two analyses was made to preserve the appropriate level of statistical power necessary for each test.

Results

Preliminary analyses

Table 1 displays descriptive statistics and bivariate correlations between all study variables. At the bivariate level, emotional abuse was related to all study variables except lack of emotional awareness and problems in social relationships, whereas emotional neglect was related to all study variables. All difficulties in emotion regulation subscales were related to both increased psychopathology and problems in social relationships, with the exception of nonacceptance of emotional responses and impulse control difficulties with problems in social relationships. Increased psychopathology was associated with increased problems in social relationships.

Exploratory factor analysis

The exploratory factor analysis was conducted using principal axis factoring. To determine the method of rotation, best practices recommend beginning with an oblique rotation

to determine whether factors are correlated. The result of the preliminary oblique rotation (direct oblimin), was a factor correlation of .295, which experts suggest is below the standard (.320) for overlap to warrant accounting for nonorthogonality (Tabachnick & Fidell, 2007). Therefore, the final analysis was conducted using an orthogonal rotation (quartimax). Quartimax rotation was selected because it maximizes variance within variables, across factors. This approach was most appropriate for the present model, given the focus on identifying unique skill sets (i.e., higher order factors) to which each specific emotion regulation skill belonged.

The results of the exploratory factor analysis indicated a two-factor solution should be selected. The eigenvalue for the first factor was 3.032, and it explained 50.53% of the variance. The eigenvalue for the second factor was 1.291, and it explained 21.51% of the variance. The eigenvalues and scree plot indicated that there was a steep dropoff in explanatory power after this point, with the third potential factor having an eigenvalue of 0.568, and explaining 9.46% of the variance. Thus, the two-factor solution was selected. The factor loadings are presented in Table 2. The first factor was labeled “response-focused difficulties in emotion regulation” and was most strongly indicated by limited access to emotion regulation strategies, followed by impulse control difficulties, and difficulties engaging in goal-directed behaviors. Nonacceptance of emotional responses and lack of emotional clarity also loaded on the first factor. The second factor was labeled “antecedent-focused difficulties in emotion regulation” and was strongly indicated by lack of emotional awareness and lack of emotional clarity. Although lack of emotional clarity loaded more strongly on Factor 2, the results indicated it was most appropriately cross-loaded on both factors, as determined by the suggested cutoff score of .320 (Tabachnick & Fidell, 2007). This cross-loading was not only data driven but also supported by the underlying theoretical model, given that lack of emotional clarity can pertain to both the antecedent- and response-focused stages of the emotion regulation process. Further, proceeding with structural equation modeling in the next phase of the analysis allowed the appropriate weighting of lack of emotional clarity and all other indicators on each factor to be preserved in the model (i.e., the inclusion of this indicator on both factors did not necessarily indicate that it would be weighted equally on both, but rather weighted commensurate with its level of association).

Table 2. Exploratory factor analysis factor loadings

	Loading on Factor 1: (response-focused difficulties in emotion regulation)	Loading on Factor 2: (antecedent-focused difficulties in emotion regulation)
Nonacceptance of emotional responses	.662	.165
Difficulties engaging in goal-directed behaviors	.769	-.031
Impulse control difficulties	.742	.116
Lack of emotional awareness	.059	.635
Limited access to emotion regulation strategies	.874	.011
Lack of emotional clarity	.383	.733

Structural equation model

Measurement. The measurement portion of the structural equation model was estimated first, using a confirmatory factor analysis of the orthogonal factor structure indicated by the exploratory factor analysis. As mentioned above, the exploratory and confirmatory factor analyses were done on separate samples in order to appropriately demonstrate the cross-validation of the measurement model. The confirmatory factor model fit adequately, $\chi^2 = 32.71, p < .001$; standard root mean square residual (SRMR) = 0.055; comparative fit index (CFI) = 0.971; root mean square error of approximation (RMSEA) = 0.089. Although the RMSEA value was within acceptable fit levels (≤ 0.10), ideal fit is generally indicated by $RMSEA \leq 0.06$. However, the CFI was above the ≥ 0.95 standard for good fit, and the SRMR below the ≤ 0.08 standard. Furthermore, simulations demonstrate that the combination of $CFI \geq 0.96$ with $SRMR \leq 0.09$ results in the fewest number of Type I and type II errors, and thus is the most preferable standard to achieve (Hu & Bentler, 1999). All indicators loaded at $p < .001$. Thus, the confirmatory factor model sufficiently validated the factor structure indicated by the exploratory model, and was retained for the remainder of the analyses.

Structure. The structural portion of the structural equation model was next estimated, using the orthogonal factor structure confirmed above, as well as paths from childhood emotional abuse and emotional neglect to response-focused and antecedent-focused difficulties in emotion regulation, and to psychopathology and problems in social relationships,

and paths from response-focused and antecedent-focused difficulties in emotion regulation to psychopathology and problems in social relationships. Childhood physical abuse, sexual abuse, and physical neglect were included as covariates on each path. Correlations among all subtypes of child maltreatment, and between the errors of psychopathology and problems in social relationships, were also modeled. The model fit very well, $\chi^2 (36) = 81.12, p < .001$; SRMR = 0.033; CFI = 0.964; RMSEA = 0.057. Figure 1 displays the final model (significant paths).

Childhood emotional abuse was significantly associated with increased response-focused difficulties in emotion regulation ($p < .001$) but not increased antecedent-focused difficulties in emotion regulation ($p = .522$). Conversely, childhood emotional neglect was associated with increased antecedent-focused difficulties in emotion regulation ($p = .001$) but not increased response-focused difficulties in emotion regulation ($p = .560$). No other subtypes of child maltreatment were associated with difficulties in emotion regulation with the exception of childhood physical abuse and decreased response-focused difficulties ($p = .015$). All subtypes of childhood maltreatment were correlated with each other ($p < .001$) in the model.

Nested model chi square difference tests were conducted to compare the strength of these paths. In these analyses, models are tested in which the paths to be compared are constrained to be equal to one another, and the fit of a constrained model is compared to the fit of the original model. Significant differences in fit indicate that a constrained model fits worse than the original model, suggesting that the compared paths are significantly different from one another.

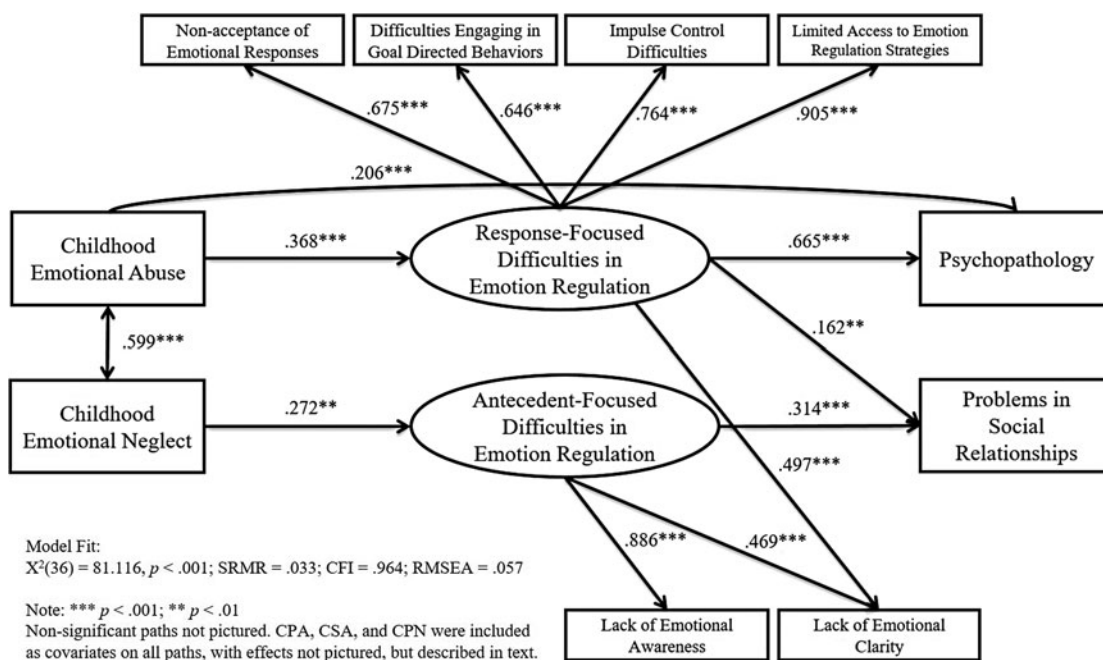


Figure 1. Indirect effects of childhood emotional maltreatment on psychopathology and problems in social relationships through difficulties in emotion regulation.

In predicting response- and antecedent-focused difficulties in emotion regulation, a model in which both paths from childhood emotional abuse were constrained to be equal fit significantly worse than the original model ($\chi^2 = 12.46$, $p < .001$), and a model in which both paths from childhood emotional neglect were constrained to be equal also fit significantly worse than the original model ($\chi^2 = 5.43$, $p = .020$). In addition, constraining both paths to response-focused difficulties in emotion regulation fit significantly worse than the original model ($\chi^2 = 7.44$, $p = .006$), and constraining both paths to antecedent-focused difficulties in emotion regulation fit significantly worse than the original model ($\chi^2 = 5.62$, $p = .018$). These analyses provide additional evidence for specific associations between each type of emotional maltreatment and unique difficulties in emotion regulation.

Response-focused difficulties in emotion regulation were associated with both increased psychopathology ($p < .001$) and increased problems in social relationships ($p = .006$). Antecedent-focused difficulties in emotion regulation were associated with increased problems in social relationships ($p < .001$) but not significantly with increased psychopathology ($p = .117$).

Nested model chi square difference tests confirmed constraining paths from response-focused difficulties in emotion regulation to psychopathology and to problems in social relationships to equality fit significantly worse than the original model ($\chi^2 = 16.16$, $p < .001$), and that constraining paths from antecedent-focused difficulties in emotion regulation to each outcome fit significantly worse than the original model ($\chi^2 = 23.30$, $p < .001$). Finally, constraining both paths to psychopathology fit significantly worse than the original model ($\chi^2 = 48.31$, $p < .001$), whereas constraining both paths to problems in social relationships did not fit significantly worse than the original model ($\chi^2 = 1.31$, $p = .252$), suggesting that both types of difficulties in emotion regulation similarly predict problems in social relationships.

No significant direct effects of childhood emotional abuse or emotional neglect on problems in social relationships remained in the model; however, there was a significant direct effect of childhood emotional abuse on increased psychopathology ($p < .001$). There was also a significant direct effect of childhood sexual abuse on decreased problems in social relationships ($p = .030$) and of childhood physical neglect on increased psychopathology ($p = .035$). There was a significant indirect effect of childhood emotional abuse on increased psychopathology through response-focused difficulties in emotion regulation ($\gamma = .244$, $p < .001$), as well as a significant indirect effect of childhood emotional abuse on increased problems in social relationships through response-focused difficulties in emotion regulation ($\gamma = .059$, $p = .017$). There was also a significant indirect effect of childhood emotional neglect on increased problems in social relationships through antecedent-focused difficulties in emotion regulation ($\gamma = .086$, $p = .013$). The overall model explained 58.6% of the variance

in psychopathology and 15.9% of the variance in problems in social relationships.

Discussion

The present study used exploratory factor analysis with follow-up structural equation modeling to identify and confirm the second-order factor structure of the Difficulties in Emotion Regulation Scale (Gratz & Roemer, 2004). The factors, response-focused difficulties in emotion regulation and antecedent-focused difficulties in emotion regulation, were then examined for their mediating roles in the relation between childhood emotional maltreatment and young adult outcomes. Indirect effects of childhood emotional abuse on increased psychopathology and increased problems in social relationships through response-focused difficulties in emotion regulation were revealed. An indirect effect of childhood emotional neglect on increased problems in social relationships (but not increased psychopathology) through antecedent-focused difficulties in emotion regulation was also found.

The hypothesis for the first aim of the study, to identify a “response-focused difficulties in emotion regulation” and an “antecedent-focused difficulties in emotion regulation” factor, was supported. The particular scales that loaded on each of these factors were largely consistent with models of emotional responding that distinguish between antecedent- and response-focused domains in a process-oriented view of emotion regulation (Gross, 1998; Lerner & Arsenio, 2000). Specifically, the response-focused difficulties factor was most strongly indicated by limited access to emotion regulation strategies, impulse control difficulties, and difficulties engaging in goal-directed behaviors, which are all associated with behavioral aspects of managing the emotion-eliciting stimulus and choosing and enacting an appropriate strategy for response. Nonacceptance of emotional responses also loaded on this factor, which is consistent with this model in that it refers to negative feelings about emotional responses that have occurred. To our surprise, lack of emotional clarity also loaded on the response-focused difficulties factor. Although it loaded more heavily on the second factor, it is worth noting that problems clarifying emotional responses can occur both before and after a response is enacted. The potential pervasiveness of lack of emotional clarity throughout the emotion regulation process makes it appropriate that this skill cross-loads across both factors. Although simple structure is often a desirable outcome in factor analysis, the extent to which this cross-loading is both data driven and supported by the theoretical understanding of the emotion regulation process suggests that including it produces the most accurate representation of the higher order structure of these factors. Further, this structure was confirmed by the cross-validation of the measurement model in the holdout sample. In the final structural equation model, lack of clarity loaded very similarly on both factors, reinforcing its position as relevant at both stages of the emotion regulation process. The antecedent-

focused difficulties factor was indicated by lack of emotional awareness and lack of emotional clarity. Both skills indicate cognitively based deficits in attending to and understanding emotionally challenging situations, consistent with antecedent-focused skills. It is also worth noting that these two subscales were originally conceptualized as one domain by the authors of the DERS (Gratz & Roemer, 2004), so this higher order classification fits well with their theoretical framework.

The hypotheses associated with the second aim of the study, predicting indirect effects of emotional maltreatment subtypes on maladjustment through difficulties in emotion regulation, were largely supported. The indirect effects found in the model provide evidence that response-focused difficulties in emotion regulation are a specific pathway by which childhood emotional abuse is associated with multidomain maladaptation. Consistent with the hypotheses, childhood emotional abuse indirectly predicted both psychopathology and problems in social relationships, and exclusively predicted response-focused difficulties in emotion regulation. Although these findings are highly consistent with less specific models in which broadly defined emotion regulation difficulties have been identified as a mechanism in the relation between emotional abuse and adjustment (Burns et al., 2010; Coates & Messman-Moore, 2014; Krause et al., 2003; Manly et al., 2001), the present study adds to this body of work by highlighting a distinction between particular subsets of emotion regulation skills. The clarified mechanism suggested by the present findings coheres with evidence that childhood emotional abuse has specific effects on the ability to adaptively respond to emotional challenges. Thus, the experience of childhood emotional abuse likely contains elements that leave children and young adults able to recognize and understand their emotions adequately, but at a loss when it comes to responding to and dealing with those emotions. This identified deficit reinforces previous work noting difficulties of individuals with a history of childhood emotional abuse in using appropriate emotion regulation strategies (e.g., Rosenthal et al., 2006), and in impulse control (e.g., Berzenski & Yates, 2010).

Given this finding, it will be important next to further clarify the mechanisms of this effect. Poor emotion regulation modeling by parents may be one feature of the experience of childhood emotional abuse that is particularly damaging, and may lead to these specific emotion regulation deficits (Bariola et al., 2011). In addition, the experiences of chronic emotional invalidation and denigration that distinguish childhood emotional abuse from emotional neglect may be another important candidate mechanism for these effects (Shipman et al., 2007). The lack of early support in providing an environment where emotions can be experienced and potential responses can be tested safely, without fear of reproach from parents, may explain the ultimate challenge in producing and implementing emotion regulation strategies later in life. The unexpected negative effect of physical abuse on response-focused difficulties in emotion regulation may suggest that after controlling for, and perhaps in the absence of, emotional maltreatment, children who experience physical abuse may have increased expo-

sure to challenging situations in which response-focused strategies are employed and developed. It may also be that the form of physical abuse itself (particularly in the emotion socialization messages it contains), and/or children's interpretation of these actions, differ in the absence of, or after accounting for, emotional abuse.

The indirect effect of emotional abuse was present in both outcome domains. This is consistent with a large body of literature that associates difficulties in emotion regulation with wide-ranging maladaptation (e.g., Coates & Messman-Moore, 2014; Penela et al., 2015). Specifically, children who have experienced emotional abuse are more likely to engage in negative self-talk that is associated with enduring high levels of psychopathology (Gibb, Benas, Crossett, & Uhrlass, 2007; Gross & Keller, 1992). When viewed in a context of chronic emotional invalidation, one can imagine this negative self-talk occurring frequently in response to poorly handled emotional challenges, thus increasing the likelihood of both increased psychopathology and problems in social relationships in those situations.

In complement to the effects of childhood emotional abuse in the model, the present study provides evidence that childhood emotional neglect represents a qualitatively different experience from childhood emotional abuse, and is associated with distinct developmental pathways and outcomes. A specific association was identified between childhood emotional neglect experiences and antecedent-focused difficulties in emotion regulation, consistent with a large body of work documenting the strong and specific association between emotional neglect and alexithymia (e.g., Aust et al., 2013; Jessar et al., 2015). Given that antecedent-focused difficulties in this study were characterized by deficits in emotional awareness and clarity, the connection to alexithymia is particularly strong. The documented association between emotional neglect and alexithymia likely draws on a mechanism consistent with research demonstrating that children with histories of neglect have scant models of emotional responding to draw from, and present with reduced emotion knowledge abilities (Sullivan et al., 2008). As demonstrated in the present study, these deficits likely carry over into emotion regulation, presenting particular challenges at the antecedent-focused stage of the process, which can therefore be traced back to experiences of emotional neglect.

Given a moderate degree of overlap between individuals who have experienced childhood emotional abuse and those who have experienced childhood emotional neglect, disentangling these experiences in the present study is particularly valuable, but should be interpreted in light of that intersection. The analytic approach in the present study allows the correlation between emotional abuse and neglect to be modeled and accounted for when estimating indirect effects (e.g., an indirect effect of emotional abuse on problems in social relationships *through* its association with emotional neglect can be estimated). Investigating the nuances of these pathways in a community sample, as done in the present study, is an especially useful approach given the degree of overlap in the present study may be lower than one would observe in some

clinical populations, where understanding this distinction is perhaps most necessary but most difficult. Thus, for those individuals who have experienced both emotional abuse and emotional neglect, one can implement targeted emotion regulation skill training that takes into account the underlying messaging and childhood experiences that may have driven the initial development of each specific type of deficit.

The indirect effect of childhood emotional neglect on young adult adaptive functioning was specific to problems in social relationships, not to psychopathology. The reduced opportunities for parental emotion socialization and overall interpersonal interactions that are characteristic of emotional neglect may be associated with children's difficulties in understanding and processing emotions, even perhaps processing emotions during interpersonal interactions, forming a mechanism by which this experience exerts effects specifically on social relationships. That there was no significant indirect effect of childhood emotional neglect on psychopathology suggests that relations between emotional neglect and psychopathology may be better explained by other competing simultaneous effects (e.g., covariance of emotional neglect with emotional abuse). This would be consistent with the recent evidence in the literature that childhood emotional neglect is related less strongly than childhood emotional abuse to psychopathology (Taillieu et al., 2016). It may also be that parental unavailability and emotional neglect have indirect effects on psychopathology through other mechanisms, such as a child's decreased sense of self-worth. However, one existing study does suggest that problems with emotional clarity that stem from emotional neglect may relate to depressive symptoms in adolescence (Jessar et al., 2015), so it will be important for future studies to examine whether this is a relation that exists earlier in development but is not maintained in young adulthood, or whether this apparent relation is better explained by other competing effects as suggested here.

These results are also consistent with evidence from the broader child maltreatment literature, which suggests that abuse is particularly strongly connected with psychopathology and neglect is particularly strongly connected to problems in social relationships (Hildyard & Wolfe, 2002; Trickett & McBride-Chang, 1995). The findings of the present study make an important contribution to understanding the differential mechanism whereby these developmental paths may diverge. Ultimately, these results provide evidence that it is valuable to examine specific domains of emotion regulation functioning, and that deficits in these domains may be differentially predicted by specific negative childhood experiences, and may uniquely predict adjustment.

Strengths and limitations

These findings nevertheless should be interpreted in light of a few key limitations. The most significant limitation of the present study is the nature of the sample. Although the sample was large and ethnoracially diverse, it was composed exclusively of college students. As such, it was not representative of a broader

population. College students may be relatively high functioning among individuals who experience emotional maltreatment. The use of continuous self-report measures to indicate maltreatment experiences may have mitigated this limitation in that it allowed a range of endorsements to be assessed that could capture the variety of experiences in this type of sample. Only a small minority of the sample endorsed never experiencing any childhood emotional abuse (30.4%) or childhood emotional neglect (23.3%) at all. Furthermore, this specific public university college student population represents an economically and experientially diverse group of students. Nevertheless, these results may not reflect the mechanisms that would operate in a higher risk or clinical sample.

In addition, the retrospective nature of these maltreatment reports represents a notable limitation of the study, as does the use of single-informant data. In examining child maltreatment, having access to Child Protective Service reports and/or other informant reports would greatly strengthen the study. Participants who have experienced child maltreatment may not be unbiased reporters of their own mental health and social relationship status. A prospective multi-informant study of children's experiences of emotional maltreatment and later adaptation would provide the strongest evidence for the mechanisms described here. However, research suggests that retrospective reports of adverse experiences contain errors of omission (i.e., failure to remember or report) much more often than errors of commission (i.e., false reports; Hardt & Rutter, 2004). Although this possibility means the results reported here may over- or underestimate the examined relations, the authors of the aforementioned study suggest that retrospective reports of childhood adversity are appropriate to use unless very detailed information is necessary (Hardt & Rutter, 2004), and others have noted that these reports are generally reliable over time (Dube, Williamson, Thompson, Felitti, & Anda, 2004).

Moreover, these findings should be interpreted in the context of the specific domains of psychopathology addressed in the present study. The measure used here covers a wide range of psychopathological symptoms, including both internalizing and externalizing problems, but it does not explicitly measure substance use problems, eating disorders, or personality disorders. This omission is especially relevant given the documented associations between emotional maltreatment, emotion regulation, and these specific types of psychopathology. Therefore, the extent to which the present model predicted psychopathology may have varied if these additional dimensions had been included, and these pathways should be interpreted with caution and not generalized to more broadly defined psychopathology.

Finally, the analytic approach taken by the present study represents a notable strength. The exploration of the measurement model for emotion regulation in an initial sample and later validation in a separate holdout sample enables strong confidence in these results. Further, the capacity of the structural model to directly control for and compare experiences of both childhood emotional abuse and childhood emotional neglect provides a basis for targeted conclusions regarding the nature of these experiences. However, an important next

step in this area of research will be to further clarify and explicate the putative mechanisms driving the effects of childhood emotional maltreatment on emotion regulation skills (e.g., specific emotion socialization behaviors), which could not be examined in the present study.

Implications

The findings revealed in the present study are novel in the specificity of the mechanisms identified from particular experiences of childhood emotional maltreatment to multidomain adaptation, through specific subsets of emotion regulation skills. Distinguishing the developmental pathways associated with emotional abuse from those associated with emotional neglect is crucial to developing interventions for children who have experienced these qualitatively different types of adversity, even, or perhaps especially, for those who have combined exposure. For example, response-focused emotion regulation skills may be more valuable to target in children who have experienced emotional neglect with,

rather than without, co-occurring emotional abuse. Further, the identification of subsets of emotion regulation skills can inform broad-ranging interventions outside of the emotional maltreatment domain. Highly effective and efficient interventions can be developed targeting these midlevel constructs rather than individual emotion regulation skills or broadly defined emotion regulation. The classification developed here can be used in conjunction with the specific developmental pathways identified to target the particular skill sets in deficit. It is also noteworthy that the antecedent-focused emotion regulation factor in this model was indicated by just two specific emotion regulation skills. Given the importance of this factor as a mechanism explaining outcomes of emotional neglect, it may be useful to develop more nuanced scales focusing on other skills in this domain. Thus, the present study has important implications for future research on specific developmental pathways and particular experiences of childhood emotional maltreatment. It highlights important distinctions that we should take care to view heterogeneously in future work as well as clinical practice.

References

- Adrian, M., Zeman, J., Erdley, C., Lisa, L., & Sim, L. (2011). Emotional dysregulation and interpersonal difficulties as risk factors for nonsuicidal self-injury in adolescent girls. *Journal of Abnormal Child Psychology*, *39*, 389–400. doi:10.1007/s10802-010-9465-3
- Affifi, A. A., Kotlerman, J. B., Ettner, S. L., & Cowan, M. (2007). Methods for improving regression analysis for skewed continuous or counted responses. *Annual Review of Public Health*, *28*, 95–111. doi:10.1146/annurev.publhealth.28.082206.094100
- Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*, 217–237. doi:10.1016/j.cpr.2009.11.004
- Alegre, A. (2011). Parenting styles and children's emotional intelligence: What do we know? *Family Journal*, *19*, 56–62.
- Aust, S., Härtwig, E. A., Heuser, I., & Bajbouj, M. (2013). The role of early emotional neglect in alexithymia. *Psychological Trauma: Theory, Research, Practice, and Policy*, *5*, 225–232. doi:10.1037/a0027314
- Bariola, E., Gullone, E., & Hughes, E. K. (2011). Child and adolescent emotion regulation: The role of parental emotion regulation and expression. *Clinical Child and Family Psychology Review*, *14*, 198–212. doi:10.1007/s10567-011-0092-5
- Beck, A. T. (2008). The evolution of the cognitive model of depression and its neurobiological correlates. *American Journal of Psychiatry*, *165*, 969–977. doi:10.1176/appi.ajp.2008.08050721
- Bellmore, A. D., & Cillessen, A. H. N. (2006). Reciprocal influences of victimization, perceived social preference, and self-concept in adolescence. *Self and Identity*, *5*, 209–229. doi:10.1080/15298860600636647
- Berking, M., Wupperman, P., Reichardt, A., Pejic, T., Dippel, A., & Znoj, H. (2008). Emotion-regulation skills as a treatment target in psychotherapy. *Behaviour Research and Therapy*, *46*, 1230–1237. doi:10.1016/j.brat.2008.08.005
- Bernstein, D., & Fink, L. (1998). *Manual for the Childhood Trauma Questionnaire*. New York: Psychological Corporation.
- Bernstein, D., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., . . . Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse & Neglect*, *27*, 169–190. doi:10.1016/S0145-2134(02)00541-0
- Berzenski, S. R., & Yates, T. M. (2010). A developmental process analysis of the contribution of childhood emotional abuse to relationship violence. *Journal of Aggression, Maltreatment & Trauma*, *19*, 180–203. doi:10.1080/10926770903539474
- Borelli, J. L., & Prinstein, M. J. (2006). Reciprocal, longitudinal associations among adolescents' negative feedback-seeking, depressive symptoms, and peer relations. *Journal of Abnormal Child Psychology*, *34*, 154–164. doi:10.1007/s10802-005-9010-y
- Brown, S., Fite, P. J., Stone, K., & Bortolato, M. (2016). Accounting for the associations between child maltreatment and internalizing problems: The role of alexithymia. *Child Abuse & Neglect*, *52*, 20–28. doi:10.1016/j.chiabu.2015.12.008
- Burns, E. E., Jackson, J. L., & Harding, H. G. (2010). Child maltreatment, emotion regulation, and posttraumatic stress: The impact of emotional abuse. *Journal of Aggression, Maltreatment & Trauma*, *19*, 801–819. doi:10.1080/10926771.2010.522947
- Calkins, S. D., & Hill, A. (2007). Caregiver influences on emerging emotion regulation: Biological and environmental transactions in early development. In J. J. Gross (Ed.), *Handbook of emotion regulation* (pp. 229–248). New York: Guilford Press.
- Carpenter, L., & Chung, M. C. (2011). Childhood trauma in obsessive compulsive disorder: The roles of alexithymia and attachment. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*, 367–388. doi:10.1111/j.2044-8341.2010.02003.x
- Cicchetti, D., & Schneider-Rosen, K. (1986). An organizational approach to childhood depression. In M. Rutter, C. E. Izard, & P. B. Read (Eds.), *Depression in young people: Developmental and clinical perspectives* (pp. 71–134). New York: Guilford Press.
- Cicchetti, D., & Valentino, K. (2006). An ecological-transactional perspective on child maltreatment: Failure of the average expectable environment and its influence on child development. In D. Cicchetti & D. Cohen (Eds.), *Handbook of developmental psychopathology* (2nd ed., Vol. 1, pp. 129–201). Hoboken, NJ: Wiley.
- Claussen, A. H., & Crittenden, P. M. (1991). Physical and psychological maltreatment: Relations among types of maltreatment. *Child Abuse & Neglect*, *15*, 5–18.
- Cloitre, M., Koenen, K. C., Cohen, L. R., & Han, H. (2002). Skills training in affective and interpersonal regulation followed by exposure: A phase-based treatment for PTSD related to childhood abuse. *Journal of Consulting and Clinical Psychology*, *70*, 1067–1074. doi:10.1037/0022-006x.70.5.1067
- Coates, A. A., & Messman-Moore, T. L. (2014). A structural model of mechanisms predicting depressive symptoms in women following childhood psychological maltreatment. *Child Abuse & Neglect*, *38*, 103–113. doi:10.1016/j.chiabu.2013.10.005
- Corstorphine, E., Waller, G., Lawson, R., & Ganis, C. (2007). Trauma and multi-impulsivity in the eating disorders. *Eating Behaviors*, *8*, 23–30. doi:10.1016/j.eatbeh.2004.08.009
- Derogatis, L. R. (1993). *BSI, Brief Symptom Inventory: Administration, scoring and procedures manual*. Piscataway, NJ: National Computer Systems.

- Dodge Reyome, N. (Ed.) (2010). *Journal of aggression, maltreatment, and trauma. Special Section: The effect of childhood emotional maltreatment on the health and functioning of later intimate relationships—Part 2* (Vol. 19). New York: Routledge.
- Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect, 28*, 729–737. doi:10.1016/j.chiabu.2003.08.009
- Dubo, E. D., Zandarini, M. C., Lewis, R. E., & Williams, A. A. (1997). Childhood antecedents of self-destructiveness in borderline personality disorder. *Canadian Journal of Psychiatry, 42*, 63–69.
- Edwards, A., Shipman, K., & Brown, A. (2005). The socialization of emotional understanding: A comparison of neglectful and nonneglectful mothers and their children. *Child Maltreatment, 10*, 293–304. doi:10.1177/1077559505278452
- Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. *Child Abuse & Neglect, 7*, 459–469. doi:10.1016/0145-2134(83)90053-4
- Eisenberg, N., Gershoff, E. T., Fabes, R. A., Shepard, S. A., Cumberland, A. J., Losoya, S. H., . . . Murphy, B. C. (2001). Mother's emotional expressivity and children's behavior problems and social competence: Mediation through children's regulation. *Developmental Psychology, 37*, 475–490. doi:10.1037/0012-1649.37.4.475
- Erickson, M. F., & Egeland, B. (2002). Child neglect. In J. Briere, L. Berliner, J. A. Bulkley, C. Jenny, & T. Reid (Eds.), *The APSAC handbook on child maltreatment* (Vol. 2, pp. 3–20). Thousand Oaks, CA: Sage.
- Fox, H. C., Hong, K. A., & Sinha, R. (2008). Difficulties in emotion regulation and impulse control in recently abstinent alcoholics compared with social drinkers. *Addictive Behaviors, 33*, 388–394. doi:10.1016/j.adbeh.2007.10.002
- Frewen, P. A., Dozois, D. J., Neufeld, R. W., & Lanius, R. A. (2012). Disturbances of emotional awareness and expression in posttraumatic stress disorder: Meta-mood, emotion regulation, mindfulness, and interference of emotional expressiveness. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*, 152.
- Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: What are the central protective resources behind healthy adjustment? *International Journal of Methods in Psychiatric Research, 12*, 65–76. doi:10.1002/mpr.143
- Garber, J., Braafladt, N., & Zeman, J. (1991). The regulation of sad affect: An information-processing perspective. In J. Garber & K. A. Dodge (Eds.), *The development of emotion regulation and dysregulation* (pp. 208–240). New York: Cambridge University Press.
- Gibb, B. E., Benas, J. S., Crosssett, S. E., & Uhrlass, D. J. (2007). Emotional maltreatment and verbal victimization in childhood: Relation to adults' depressive cognitions and symptoms. *Journal of Emotional Abuse, 7*, 59–73. doi: 10.1300/J135v07n02_04
- Grabe, H. J., Spitzer, C., & Freyberger, H. J. (2004). Alexithymia and personality in relation to dimensions of psychopathology. *American Journal of Psychiatry, 161*, 1299–1301. doi:10.1176/appi.ajp.161.7.1299
- Gratz, K. L., Conrad, S. D., & Roemer, L. (2002). Risk factors for deliberate self-harm among college students. *American Journal of Orthopsychiatry, 72*, 128–140. doi:10.1037/0002-9432.72.1.128
- Gratz, K. L., & Gunderson, J. G. (2006). Preliminary data on an acceptance-based emotion regulation group intervention for deliberate self-harm among women with borderline personality disorder. *Behavior Therapy, 37*, 25–35. doi:10.1016/j.beth.2005.03.002
- Gratz, K. L., Latzman, R. D., Tull, M. T., Reynolds, E. K., & Lejuez, C. W. (2011). Exploring the association between emotional abuse and childhood borderline personality features: The moderating role of personality traits. *Behavior Therapy, 42*, 493–508. doi:10.1016/j.beth.2010.11.003
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41–54. doi: 10.1023/B:JOBA.0000007455.08539.94
- Gross, A. B., & Keller, H. R. (1992). Long-term consequences on childhood physical and psychological maltreatment. *Aggressive Behavior, 18*, 171–185. doi:10.1002/1098-2337(1992)18:3<171::AID-AB2480180302>3.0.CO;2-I
- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224–237. doi:10.1037/0022-3514.74.1.224
- Güleç, M. Y., Altıntaş, M., İnanc, L., Bezin, Ç. H., Koca, E. K., & Güleç, H. (2013). Effects of childhood trauma on somatization in major depressive disorder: The role of alexithymia. *Journal of Affective Disorders, 146*, 137–141. doi:10.1016/j.jad.2012.06.033
- Hager, A. D., & Runtz, M. G. (2012). Physical and psychological maltreatment in childhood and later health problems in women: An exploratory investigation of the roles of perceived stress and coping strategies. *Child Abuse & Neglect, 36*, 393–403. doi:10.1016/j.chiabu.2012.02.002
- Hardt, J., & Rutter, M. (2004). Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry, 45*, 260–273.
- Hardy, D. F., Power, T. G., & Jaedicke, S. (1993). Examining the relation of parenting to children's coping with everyday stress. *Child Development, 64*, 1829–1841. doi:10.2307/1131472
- Hart, S. N., Binggeli, N. J., & Brassard, M. R. (1997). Evidence for the effects of psychological maltreatment. *Journal of Emotional Abuse, 1*, 27–58. doi:10.1300/J135v01n01_03
- Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse & Neglect, 26*, 679–695. doi:10.1016/S0145-2134(02)00341-1
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55. doi:10.1080/10705519909540118
- IBM Corporation. (2011). SPSS statistics for Windows (Version 20). Armonk, NY: Author.
- Jessar, A. J., Hamilton, J. L., Flynn, M., Abramson, L. Y., & Alloy, L. B. (2015). Emotional clarity as a mechanism linking emotional neglect and depressive symptoms during early adolescence. *Journal of Early Adolescence*. Advance online publication. doi:10.1177/0272431615609157
- Jimenez, S. S., Niles, B. L., & Park, C. L. (2010). A mindfulness model of affect regulation and depressive symptoms: Positive emotions, mood regulation expectancies, and self-acceptance as regulatory mechanisms. *Personality and Individual Differences, 49*, 645–650. doi:10.1016/j.paid.2010.05.041
- Krause, E. D., Mendelson, T., & Lynch, T. R. (2003). Childhood emotional invalidation and adult psychological distress: The mediating role of emotional inhibition. *Child Abuse & Neglect, 27*, 199–213. doi: 10.1016/S0145-2134(02)00536-7
- Lemerise, E. A., & Arsenio, W. F. (2000). An integrated model of emotion processes and cognition in social information processing. *Child Development, 71*, 107–118.
- Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*, 1198–1202. doi:10.1080/01621459.1988.10478722
- Mahady Wilton, M. M., Craig, W. M., & Pepler, D. J. (2000). Emotional regulation and display in classroom victims of bullying: Characteristic expressions of affect, coping styles and relevant contextual factors. *Social Development, 9*, 226–245. doi:10.1111/1467-9507.00121
- Manly, J. T., Kim, J. E., Rogosch, F. A., & Cicchetti, D. (2001). Dimensions of child maltreatment and children's adjustment: Contributions of developmental timing and subtype. *Development and Psychopathology, 13*, 759–782.
- Martini, T. S., Root, C. A., & Jenkins, J. M. (2004). Low and middle income mothers' regulation of negative emotion: Effects of children's temperament and situational emotional responses. *Social Development, 13*, 515–530. doi:10.1111/j.1467-9507.2004.00281.x
- McGee, R. A., & Wolfe, D. A. (1991). Psychological maltreatment: Toward an operational definition. *Development and Psychopathology, 3*, 3–18. doi:10.1017/S0954579400005034
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*, 361–388. doi:10.1111/j.1467-9507.2007.00389.x
- Mullen, P. E., Martin, J. L., Anderson, J. C., Romans, S. E., & Herbison, G. P. (1996). The long-term impact of the physical, emotional, and sexual abuse of children: A community study. *Child Abuse & Neglect, 20*, 7–21. doi:10.1016/0145-2134(95)00112-3
- Muthen, L. K., & Muthen, B. O. (1998–2011). *Mplus user's guide*. (6th ed.). Los Angeles: Author.
- Ney, P. G., Fung, T., & Wickett, A. R. (1994). The worst combinations of child abuse and neglect. *Child Abuse & Neglect, 18*, 705–714. doi:10.1016/0145-2134(94)00037-9
- Ometto, M., de Oliveira, P. A., Milioni, A. L., dos Santos, B., Scivoletto, S., Busatto, G. F., . . . Cunha, P. J. (2016). Social skills and psychopathic

- traits in maltreated adolescents. *European Child and Adolescent Psychiatry*, 25, 397–405. doi:10.1007/s00787-015-0744-y
- Paivio, S. C., & Cramer, K. M. (2004). Factor structure and reliability of the Childhood Trauma Questionnaire in a Canadian undergraduate student sample. *Child Abuse & Neglect*, 28, 889–904. doi:10.1016/j.chiabu.2004.01.011
- Paivio, S. C., & McCulloch, C. R. (2004). Alexithymia as a mediator between childhood trauma and self-injurious behaviors. *Child Abuse & Neglect*, 28, 339–354. doi:10.1016/j.chiabu.2003.11.018
- Paradis, A., & Boucher, S. (2010). Child maltreatment history and interpersonal problems in adult couple relationships. *Journal of Aggression, Maltreatment & Trauma*, 19, 138–158. doi:10.1080/10926770903539433
- Penela, E. C., Walker, O. L., Degnan, K. A., Fox, N. A., & Henderson, H. A. (2015). Early behavioral inhibition and emotion regulation: Pathways toward social competence in middle childhood. *Child Development*. Advance online publication. doi:10.1111/cdev.12384
- Perry, A. R., DiLillo, D., & Peugh, J. (2007). Childhood psychological maltreatment and quality of marriage: The mediating role of psychological distress. *Journal of Emotional Abuse*, 7, 117–142. doi:10.1300/J135v07n02_07
- Pollak, S. D., Cicchetti, D., Hornung, K., & Reed, A. (2000). Recognizing emotion in faces: Developmental effects of child abuse and neglect. *Developmental Psychology*, 36, 679–688. doi:10.1037/0012-1649.36.5.679
- Rosenthal, M. Z., Polusny, M. A., & Follette, V. M. (2006). Avoidance mediates the relationship between perceived criticism in the family of origin and psychological distress in adulthood. *Journal of Emotional Abuse*, 6, 87–102. doi:10.1300/J135v06n01_05
- Roy, A. (2005). Childhood trauma and impulsivity: Possible relevance to suicidal behavior. *Archives of Suicide Research*, 9, 147–151. doi:10.1080/1381110590903990
- Scher, C. D., Stein, M. B., Asmundson, G. J. G., McCreary, D. R., & Forde, D. R. (2001). The Childhood Trauma Questionnaire in a community sample: Psychometric properties and normative data. *Journal of Traumatic Stress*, 14, 843–857. doi:10.1023/a:1013058625719
- Shields, A., & Cicchetti, D. (1998). Reactive aggression among maltreated children: The contributions of attention and emotion dysregulation. *Journal of Clinical Child Psychology*, 27, 381–395. doi:10.1207/s15374424jccp2704_2
- Shipman, K., Edwards, A., Brown, A., Swisher, L., & Jennings, E. (2005). Managing emotion in a maltreating context: A pilot study examining child neglect. *Child Abuse & Neglect*, 29, 1015–1029.
- Shipman, K., Schneider, R., Fitzgerald, M. M., Sims, C., Swisher, L., & Edwards, A. (2007). Maternal emotion socialization in maltreating and non-maltreating families: Implications for children's emotion regulation. *Social Development*, 16, 268–285. doi:10.1111/j.1467-9507.2007.00384.x
- Shipman, K., & Zeman, J. (2001). Socialization of children's emotion regulation in mother-child dyads: A developmental psychopathology perspective. *Development and Psychopathology*, 13, 317–336. doi:10.1017/S0954579401002073
- Silk, J. S., Shaw, D. S., Forbes, E. E., Lane, T. L., & Kovacs, M. (2006). Maternal depression and child internalizing: The moderating role of child emotion regulation. *Journal of Clinical Child and Adolescent Psychology*, 35, 116–126. doi:10.1207/s15374424jccp3501_10
- Spertus, I. L., Yehuda, R., Wong, C. M., Halligan, S., & Seremetis, S. V. (2003). Childhood emotional abuse and neglect as predictors of psychological and physical symptoms in women presenting to a primary care practice. *Child Abuse & Neglect*, 27, 1247–1258. doi:10.1016/j.chiabu.2003.05.001
- Spinazzola, J., Hodgdon, H., Liang, L.-J., Ford, J. D., Layne, C. M., Pynoos, R., . . . Kisiel, C. (2014). Unseen wounds: The contribution of psychological maltreatment to child and adolescent mental health and risk outcomes. *Psychological Trauma: Theory, Research, Practice, and Policy*, 6, S18. doi:10.1037/a0037766
- Stoltenborgh, M., Bakermans-Kranenburg, M. J., Alink, L. R. A., & van Ijzendoorn, M. H. (2012). The universality of childhood emotional abuse: A meta-analysis of worldwide prevalence. *Journal of Aggression, Maltreatment & Trauma*, 21, 870–890. doi:10.1080/10926771.2012.708014
- Sullivan, M. W., Bennett, D. S., Carpenter, K., & Lewis, M. (2008). Emotion knowledge in young neglected children. *Child Maltreatment*, 13, 301–306. doi:10.1177/1077559507313725
- Sung, M. Y. (2014). Effects of behavioral and emotional regulation on preschool children's peer play behavior: Focusing on gender differences. *Family and Environment Research*, 52, 541–549. doi:10.6115/fer.2014.046
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Needham Height, MA: Allyn & Bacon.
- Taillieu, T. L., Brownridge, D. A., Sareen, J., & Afifi, T. O. (2016). Childhood emotional maltreatment and mental disorders: Results from a nationally representative adult sample from the United States. *Child Abuse & Neglect*, 59, 1–12. doi:10.1016/j.chiabu.2016.07.005
- Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, 59, 250–283. doi:10.2307/1166137
- Thompson, R. A., Lewis, M. D., & Calkins, S. D. (2008). Reassessing emotion regulation. *Child Development Perspectives*, 2, 124–131. doi:10.1111/j.1750-8606.2008.00054.x
- Trickett, P. K., & McBride-Chang, C. (1995). The developmental impact of different forms of child abuse and neglect. *Developmental Review*, 15, 311–337. doi:10.1006/drev.1995.1012
- Waldinger, R. J., Toth, S. L., & Gerber, A. (2001). Maltreatment and internal representations of relationships: Core relationship themes in the narratives of abused and neglected preschoolers. *Social Development*, 10, 41–58. doi:10.1111/1467-9507.00147
- White, M. G., Bogdan, R., Fisher, P. M., Muñoz, K. E., Williamson, D. E., & Hariri, A. R. (2012). FKBP5 and emotional neglect interact to predict individual differences in amygdala reactivity. *Genes, Brain and Behavior*, 11, 869–878. doi:10.1111/j.1601-183X.2012.00837.x
- Wright, M. O. D., Crawford, E., & Del Castillo, D. (2009). Childhood emotional maltreatment and later psychological distress among college students: The mediating role of maladaptive schemas. *Child Abuse & Neglect*, 33, 59–68.