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Pathways From Child Sexual Abuse to Adult Depression: The Role of Parental Socialization of Emotions and Alexithymia

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Objective: Depression is common among adult survivors of child sexual abuse (CSA), but the intervening processes responsible for this outcome have not yet been fully delineated. The present study investigated the mediating role of perceived parental emotion socialization and alexithymia (difficulties identifying and describing feelings) in explaining the link between CSA and adult depressive symptoms in female veterans. **Method:** Cross-sectional data were collected from 110 female veterans who completed self-report questionnaires measuring demographics, sexual victimization history, perceived parental emotion socialization, and current symptoms of alexithymia and depression. **Results:** Linear regression analyses showed that CSA predicted greater depression, which was partly accounted for by alexithymia. Less positive socialization practices by both parents fully mediated the relationship between CSA and alexithymia. When these factors were examined together in a path model, greater CSA severity predicted perceptions of fewer positive socialization practices by mothers, which, in turn, was associated with greater alexithymia and depression. **Conclusions:** Perceptions of early positive emotion socialization and current alexithymia may contribute to experience of depression among sexually victimized female veterans. Interventions aimed at targeting emotion regulation skills and perceptions associated with other salient childhood experiences such as emotion socialization by parents could help reduce adult depression among CSA survivors. Furthermore, encouraging positive parenting practices for caregivers of abused children could allay subsequent affective symptoms.

Keywords: child sexual abuse, adult depression, emotion socialization, alexithymia, female veterans

Child sexual abuse (CSA) remains a significant societal problem that poses risk for many severe and long-lasting effects that extend into adulthood (Kendler et al., 2000). In the mental health domain, depression has frequently been examined as a possible long-term outcome of early sexual abuse. A large number of studies

using cross-sectional, retrospective designs (e.g., Cheasty, Clare, & Collins, 1998; Kendler, Kuhn, & Prescott, 2004; Molnar, Buka, & Kessler, 2001), as well as prospective investigations using adult recall of abuse (Fergusson, Boden, & Horwood, 2008) or documented cases of CSA followed into adulthood (Bagley & Mc-

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Donald, 1984; Widom, DuMont, & Czaja, 2007), have examined this association. With few exceptions (e.g., Widom et al., 2007), studies have confirmed expected links between CSA and adult depression. According to the National Comorbidity Survey, adult depression is one of the most commonly reported outcomes of CSA (Molnar et al., 2001), with some estimates (e.g., Briere & Elliot, 1994) indicating that CSA survivors have a lifetime risk for depression in adulthood as much as four times greater than that of non-CSA survivors. Given the preponderance of evidence identifying CSA as a risk factor for later depression, an important next step is to understand the mechanisms that account for this association. The present study examined possible pathways to CSA-related depression among female veterans, a population reporting high rates of sexual abuse (Polusny, Dickinson, Murdoch, & Thuras, 2008; Schultz, Bell, Naugle, & Polusny, 2006). Knowledge of these factors may aid in the development of effective interventions to reduce or prevent this prevalent outcome.

Alexithymia as a Mechanism Between CSA and Depression

Pathways from CSA to adult depression are likely to be complex, involving a variety of intervening variables. To date, research points to emotion dysregulation processes as potentially important mechanisms explaining the outcomes of CSA, including depression. It is well known that a significant subset of sexually abused individuals experience intense painful negative emotions and report a number of problems managing these emotions (Polusny & Follette, 1995). While attempting to cope with this negative abuse-related affect, survivors may engage in behaviors to avoid, suppress, or numb themselves to these internal experiences, which may further exacerbate psychological distress (Marx & Sloan, 2002; Polusny & Follette, 1995). Moreover, effective regulation of emotions, which requires individuals to accurately distinguish, describe, and understand affective states without resorting to these escape or avoidance behaviors (Gross, 1998), appears to be impaired in abuse survivors (Walsh, DiLillo, & Scalora, in press). Compared with nonabused individuals, adult CSA survivors report greater difficulties accurately identifying feelings, distinguishing feelings from bodily sensations,

communicating their feelings to others, and focusing on their inner experiences, all of which are closely associated with alexithymia (Moormann, Bermond, Albach, & Dorp, 1997). Other studies have similarly demonstrated a positive association between CSA and alexithymic deficits such as lack of insight into one's own emotions and difficulties verbalizing feelings (Berenbaum, 1996; Polusny et al., 2008).

In addition to its association with CSA, alexithymia also has been independently linked to a variety of psychopathologies, most notably, depression. In particular, alexithymic difficulties with identifying and communicating one's feelings have been linked to greater depressive symptomatology in both the general population and outpatients with major depression (Honkalampi, Hintikka, Laukkanen, Lehtonen, & Viinamäki, 2001; Saarijärvi, Salminen, & Toikka, 2006). Although alexithymia may function to temporarily insulate individuals from experiencing intense and negative emotions (Krystal, 1988), these experiences may become consolidated over time into problematic stable personality patterns (Luminet, Bagby, & Taylor, 2001). In addition to having general impairments in recognizing and expressing feelings, alexithymic individuals also experience high levels of negative emotions and low levels of positive emotions (Bagby & Taylor, 1997). Because of these emotion regulation problems, these individuals may experience difficulties up-regulating positive emotions and down-regulating negative emotions, both of which have been suggested to intensify risk for depression (Cole, Michel, & Teti, 1994). Consistent with this notion, Kendler and colleagues (2004) found that severity of CSA and neuroticism (high negative emotionality) increased survivors' sensitivity to stressful life events, which led to increased risk for onset of major depression diagnosis.

Parental Reactions to Emotions as a Mechanism Between CSA Severity and Alexithymia

The studies noted earlier reveal clear linkages between CSA and alexithymia, as well as between alexithymia and depression, suggesting that the emotional difficulties associated with alexithymia may mediate the well-established relationship between early sexual abuse and adult depression. If alexithymia indeed functions in this manner, a logical next question is:

What are the developmental origins of alexithymia experienced by adult CSA survivors? Research on parental socialization of children's emotions provides clues regarding this relationship. Specifically, early parent-child interaction represents a salient interpersonal context in which children learn to understand and regulate their own emotions (Eisenberg, Cumberland, & Spinrad, 1998; Morris, Silk, Steinberg, Myers, & Robinson, 2007). One way in which parents socialize children's emotions is through their reactions to children's negative affect, which also reflects the accepted emotional expressions in their families (Eisenberg et al., 1998). These parental responses are internalized by children and shape children's own abilities to manage intense negative emotions (Contreras & Kerns, 2000). Consistent with this notion, validating parental reactions involving positive "coaching" responses to children's negative emotions (e.g., encouraging healthy expression of emotions, enhancing positive emotions, providing help with problem solving, and comforting to alleviate distress) have been found to foster children's emotion regulation (Gottman, Katz, & Hooven, 1996). On the other hand, invalidating or dismissive parental responses to emotion (e.g., punitive reactions, minimization, and distress reactions) teach children maladaptive ways of coping with negative emotions and undermine their emotional competence (Jones, Eisenberg, & Fabes, 2002).

Although early emotion socialization by parents is important for children's emotional competence, this process may be seriously disrupted in the households of children who experience sexual abuse (Shipman, Zeman, Penza, & Champion, 2000). Survivors often recall their families-of-origin as chaotic, lacking cohesiveness, and emotionally invalidating, where negative emotions were rejected, punished, or ignored by their parents, regardless of the type of abuse they experienced (i.e., intrafamilial or extrafamilial; Bal, Bourdeaudhuij, Crombez, & Oost, 2004; Gold, Hyman, & Andrés-Hyman, 2004; Ray, Jackson, & Townsley, 1991). With inadequate guidance in responding to emotionally arousing situations and limited opportunities to learn about appropriate expression of negative emotions, sexually abused children may develop alexithymia to avoid or escape overwhelming emotions in stressful situations (Moormann et al., 1997). Consistent with this

theory, Krause, Mendelson, and Lynch (2003) found that individuals who perceived negative emotion socialization in childhood reported greater inhibition of emotional expression as an adult, which, in turn, contributed to psychological distress. Using a treatment sample, Cohen and Mannarino (1996) found that children develop initial psychological symptoms through negative parental emotion reactions after abuse disclosure. Conversely, validating relationships in families-of-origin, specifically a supportive parenting style by mothers, appear to mitigate the impact of abuse on survivors' emotional expression and arousal (Shipman et al., 2000). To date, however, there is a lack of studies examining the relations between early sexual abuse, perceptions of both positive and negative parental emotion socialization, and alexithymia. In the present study, therefore, we tested the possibility that emotion socialization mediates the relation between early sexual abuse and alexithymia on the basis of the notion that painful negative emotions may arise from abuse experiences, which, if ignored or not effectively coached by parents, may disrupt survivors' emotional development and ability to recognize and communicate their emotional experiences.

Summary and Rationale for the Present Study

Despite consistent findings of increased depression among CSA survivors, little is known about the mechanisms responsible for this linkage. However, growing data suggest that abuse-related emotion dysregulation, particularly alexithymia, may be an important intervening variable. Moreover, developmental literature reveals that primary caregivers' responses to children's displays of negative emotions—a form of emotion socialization—are relevant to children's subsequent emotion regulation and adjustment. In the present study, we draw on these findings to understand possible pathways from early sexual abuse to adult depression. Specifically, we examined the roles of parental socialization of emotions and alexithymia as intermediary variables that may account for the well-established association between CSA and adult depression. To achieve this objective, we first tested two models designed to reveal pos-

sible mechanisms through which early sexual abuse may contribute to the development of depression.

1. In the first model, we expected that alexithymic difficulties (i.e., difficulties with identifying and describing feelings and externally oriented thinking) would emerge as significant pathways (mediators) explaining associations between early sexual abuse and adult depression (CSA → alexithymia → depression). Specifically, we tested the hypotheses that (a) greater CSA severity would predict increased depressive symptoms; (b) greater CSA severity would be associated with increased alexithymic difficulties; (c) greater alexithymia would be related to increased depression, and; (d) alexithymia would mediate the relationships between CSA and depression.
2. In the second model, we tested the possibility that emotion socialization in survivors' families-of-origin serves as an important pathway (mediator) from early CSA to emotional difficulties in the form of alexithymia (CSA → emotion socialization → alexithymia). Specific hypotheses tested in this model were that (a) greater CSA severity would be related to increased alexithymia; (b) greater CSA severity would be associated with perceptions of less positive emotion socialization practices and more negative emotion socialization practices (by both parents); (c) less positive emotion socialization and more negative emotion socialization would predict increased alexithymia, and; (d) positive and negative emotion socialization would each mediate the relationship between CSA and alexithymic difficulties, although in opposite directions.
3. Finally, on the basis of the results of the initial mediational models, we proposed to examine a more comprehensive model in which aspects of parental emotion socialization and alexithymia are incorporated as a linear pathway explaining associations between early CSA and adult depression.

Method

Participants

Participants were 110 adult female veterans between the ages of 22 and 65 ($M = 48$; $SD = 9.72$) receiving health care within a large metropolitan Veterans Affairs (VA) Medical Center. Consistent with the demographics of the female veteran population enrolled at the facility, 88.2% were European American, 4.5% African American, 4.5% Native American, 0.9% Hispanic or Latina, and 0.9% other. One third of the sample (33.6%) indicated that they were married, 25.5% were single and not in a relationship, 13.6% were separated or divorced, 11.8% were single and in a relationship, 9.1% were living with partner, and 2.7% were widowed. Twenty-eight percent of women had an associate's degree, followed by 22.7% having an undergraduate college degree, 21.8% having at least some skilled training, 13.6% with a graduate or professional degree, and 12.7% having a high school diploma or general equivalency diploma. Most participants (39.1%) reported that they were employed full time, whereas others were disabled (19.1%), employed part time (15.5%), retired (10.0%), unemployed (9.1%), students (5.5%), or homemakers (0.9%). Thirty-seven percent of women were receiving mental health treatment at the time of data collection, and 77.3% indicated previous mental health treatment history.

Measures

CSA subscale from the Wyatt Sex History Questionnaire (WSHQ; Wyatt, 1988). CSA severity was assessed with the 9-item CSA subscale from the WSHQ, which has been previously used to study CSA experiences reported by female veterans (Schultz et al., 2006). Participants were asked to dichotomously endorse (1 = *yes*, 0 = *no*) each behaviorally specific item, which ranged in severity from fondling to completed intercourse (e.g., "Did anyone ever masturbate in front of you?"; Wyatt, Lawrence, Vodounon, & Mickey, 1992). Responses were summed to create a continuous CSA severity score ranging from 0 to 9. Using additional items from the WSHQ, we assessed characteristics of CSA, such as relationship to perpetrator. In this study, CSA was defined as sexual

contact (e.g., touching or being touched by another person in a sexual way without involving sexual intercourse or attempted/completed sexual intercourse of any type [oral, anal, or vaginal]) before age 14. For the act to be considered CSA, the perpetrator had to be at least 5 years older than the participant or, if the perpetrator was not 5 years older than the participant, coercion or force must have been used during the incident (Wyatt & Newcomb, 1990). The documented psychometric properties of this instrument demonstrate excellent test–retest reliability (0.90; Wyatt et al., 1992). Alpha coefficient for the CSA scale used in this study was 0.85.

Beck Depression Inventory—II (BDI–II; Beck, Steer, & Brown, 1996). Depression was assessed with the BDI–II, a widely used self-report measure of depressive symptomatology in varied samples, including female veterans (Polusny et al., 2008). Participants respond to 21 items assessing the cognitive–affective and physiological symptoms of depression over the past 2 weeks. Each item is scored on a 4-point scale ranging from 0 to 3. For example, the response options for the item assessing sadness are: 0 = *I do not feel sad*; 1 = *I feel sad much of the time*; 2 = *I feel sad all of the time*; 3 = *I am so sad or unhappy that I can't stand it*. Total scores range from 0 to 63, with higher scores reflecting greater depressive symptomatology. The BDI–II has demonstrated excellent reliability (alpha coefficients ranging from 0.89 to 0.94) and validity (Beck et al., 1996; Dozois & Covin, 2004). For the present sample, alpha for the BDI–II was 0.93.

Toronto Alexithymia Scale—20 (TAS–20; Bagby, Parker, & Taylor, 1994a, 1994b). Alexithymia was assessed with the TAS–20, a 20-item self-report questionnaire. Participants were asked to rate themselves on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) for each item. The TAS–20 yields three subscales that tap empirically derived dimensions of alexithymia: difficulty in identifying feelings (e.g., “I am often confused about what emotion I am feeling”), difficulty in describing feelings to others (e.g., “It is difficult for me to find the right words for my feelings”), and externally oriented thinking or a preference to focus on details of external events rather than one’s inner experiences (e.g., “I prefer to analyze problems rather than just describe them”). Because previous studies sug-

gest independent associations between these conceptually distinct dimensions of the TAS and both sexual abuse (Berenbaum, 1996) and adult depression (Marchesi, Brusamonti, & Maggini, 2000), each facet of alexithymia was examined separately. The TAS–20 has demonstrated good internal consistency; test–retest reliability; and convergent, discriminant, and concurrent validity across samples (Bagby et al., 1994a, 1994b); and it has been used in studies of female veterans (Polusny et al., 2008). In the present sample, the overall TAS–20 ($\alpha = 0.85$) and subscales (difficulty identifying feelings, $\alpha = 0.85$; difficulty describing feelings, $\alpha = 0.67$; externally oriented thinking, $\alpha = 0.62$) demonstrated adequate internal consistency.

Socialization of Emotion Scale (SES). The SES was adapted by Krause et al. (2003) from Fabes, Eisenberg, and Bernzweig’s (1990) Coping With Children’s Negative Emotions Scale (CCNES). The CCNES is a widely used measure that assesses parents’ responses to children’s displays of negative emotions. Krause et al. reworded the items on the CCNES to measure adult participants’ retrospective reports of their parents’ adaptive and problematic emotion socialization practices in childhood. Participants are asked to rate both their mothers’ and fathers’ responses to 12 scenarios in which the participants might have expressed negative emotions in childhood (e.g., “If I became angry because I was sick or hurt and couldn’t go to my friend’s birthday party, my caretaker would . . .”) on a scale ranging from 1 (*very unlikely*) to 7 (*very likely*). Emotion socialization scores were created by separately aggregating positive (e.g., encouraging healthy expression of emotions, providing help with solving the problem, and comforting) and negative (e.g., punitive reactions, minimization, and distress reactions) subscales for both mothers and fathers. Cronbach’s alphas for the SES subscales in the present sample ranged from 0.94 to 0.98. Recent publications in which the SES was used to assess childhood invalidation in adult samples have reported that the subscale scores correlate with other study variables in predictable ways (Krause et al., 2003; Sauer & Baer, 2009).

Demographic questionnaire. Participants also completed a questionnaire assessing demographic variables, including age, ethnicity, marital status, education, employment, and previous and current mental health treatment.

Procedure

The study was approved by the institutional review boards for the Minneapolis VA Medical Center and the University of Minnesota. As part of a larger study of emotional processing deficits in sexually victimized women, participants were recruited through letters sent to all female veterans receiving health care at a VA Comprehensive Women's Health Clinic and through recruitment flyers posted throughout the VA Medical Center. The recruitment letter invited female veterans to participate in a research study that investigates women's life experiences and emotions. The letter stated, "We are interested in recruiting women to participate in this study who have diverse backgrounds and life experiences, including women with and without histories of unwanted sexual experiences." Women who contacted the researchers expressing interest in the study were screened by phone for lifetime sexual victimization history; efforts were made to recruit women with a range of unwanted sexual experiences including no sexual victimization history. All women veterans who contacted the research team and were eligible to participate agreed to schedule an individual appointment to learn more about the study (e.g., complete informed consent process, complete study questionnaires). The no-show/cancellation rate for initial appointments was approximately 25%; however, efforts were made to reschedule appointments if possible. After completion of the informed consent process, there were no participants who decided not to participate or withdrew from the study.

On arrival for the study, participants provided written informed consent and completed a computer-administrated battery of self-report instruments, including measures of demographic information, sexual victimization history, perceived parental emotion socialization, and current symptoms of alexithymia and depression. Participants were compensated \$20 for participation.

Data Analytic Strategy

We calculated descriptive statistics to examine univariate distributions of all the variables. Because of a substantial positive skew (1.14, $SE = 0.23$), a square-root transformation was performed on the BDI-II scores, which ob-

tained the most effective transformation for this variable. The transformed BDI-II scores (skewness = 0.11, $SE = 0.23$) were used for all subsequent analyses. Moreover, because it has been suggested that both parents may uniquely contribute to young children's emotion regulatory abilities (McElwain, Halberstadt, & Voling, 2007), we analyzed individuals' perceived recall of childhood socialization practices across both parents by including both mothers' and fathers' emotion socialization as separate factors in the tested models. Finally, before testing our primary hypotheses, we conducted analyses to examine the possibility that the socialization processes examined in this study could vary by whether the CSA experienced by survivors was intrafamilial or extrafamilial. Analyses of variance (ANOVAs) comparing these two groups on relevant study variables showed that, with the exception of positive socialization by fathers ($p = .04$), groups did not differ on any dimensions, including the remaining positive and negative socialization variables, alexithymia subscales, or depression. This statistical nonsignificance is consistent with other studies showing that early family environments often do not differ between intrafamilial and extrafamilial survivors (e.g., Gold et al., 2004). Thus, subsequent analyses do not distinguish participants on the basis of the type of abuse they experienced.

To identify the potential pathways that may lead to adult depressive symptoms in women who have experienced sexual abuse in childhood, we conducted a series of multiple regression analyses using Baron and Kenny's (1986) recommended steps. These steps require (1) a significant relationship between the independent variable (IV) and the dependent variable (DV; Path c); (2) a significant relationship between the IV and the mediator (Path a); (3) a significant relationship between the mediator and the DV (Path b); and (4) a reduced relationship between the IV and the DV in the presence of the mediator (if reduced to nonsignificance, full mediation is established; if reduced substantially but remains significant, partial mediation is established) (Path c'). For each of the two smaller mediational models identified (CSA \rightarrow alexithymia \rightarrow depression; and CSA \rightarrow parental socialization \rightarrow alexithymia), we initially conducted direct analyses to establish a statistically significant relationship between the

IV and the DV. Then, we conducted mediational analyses to establish a significant relationship of the mediator variable with the IV and the DV and a nonsignificant relationship between IV and DV in the presence of the mediator variable. The DV for the first set of regressions was depression (BDI-II square root). For the second set of regressions, alexithymia (difficulties identifying and describing feelings) served as the DV. When multiple variables were implicated in these linear regression models, path analysis was used to examine the overall model. Analyses were conducted with MPlus Version 5.2 (Muthén & Muthén, 1998). Model fit was evaluated according to Kline's (2005) recommendation that the model chi-square statistic is nonsignificant and Hu and Bentler's (1999) recommendations for model fit indices (comparative fit index [CFI] > .95, root mean square error of approximation [RMSEA] ≤ .06, and standardized root mean square residual [SRMR] < .08).

Results

Descriptive Data and Bivariate Analyses of Model Variables

A total of 52 women (47.27%) reported CSA experiences before the age of 14. Of those reporting CSA, 10 (19.6%) reported acts of abuse that included oral, anal, or vaginal penetration; 4 (7.89%) reported attempted sexual intercourse; and the remaining reported other abusive experiences including being fondled (*n* = 15; 29.4%), being forced to touch someone sexually (*n* = 13; 25.5%), or someone rubbing his or her genitals against their body (*n* = 10; 19.6%). Of the 31 survivors with available perpetrator data, 61.1% reported intrafamilial abuse (e.g., perpetrated by father/stepfather, mother/stepmother, or sibling), whereas 38.9% of participants reported extrafamilial abuse (e.g., perpetrated by neighbor or friend). Means, standard deviations, and correlation coefficients for other variables of interest are presented in Table 1. Overall, 22.5% of participants reported moderate or greater depressive symptoms based on a recommended cut score of 20 or greater on the BDI-II (Beck et al., 1996). Using Bagby and Taylor's (1997) recommended cut score of 60, we found that nearly 14% of

Table 1
Correlations, Means, and Standard Deviations for CSA Severity, Parental Emotion Socialization, Alexithymia, and Depression

Variable	1	2	3	4	5	6	7	8	9
1. CSA	—								
2. Pos. maternal	-.35**	—							
3. Pos. paternal	-.35**	.59**	—						
4. Neg. maternal	.19	-.65**	-.31**	—					
5. Neg. paternal	.12	-.24*	-.46**	.60**	—				
6. TAS ID	.22	-.33**	-.24*	.36**	.29**	—			
7. TAS DE	.24*	-.38**	-.31**	.37**	.30**	.72**	—		
8. TAS EXT	.05	-.23*	-.25**	.10	.07	.27**	.39**	—	
9. BDI sqrt	.36**	-.22*	-.27**	.28**	.38**	.66**	.56**	.26**	—
<i>M</i> (and <i>SD</i>)	1.70 (2.28)	130.39 (56.03)	104.14 (49.97)	131.81 (43.99)	135.30 (50.09)	15.49 (6.44)	12.44 (4.29)	18.32 (4.79)	3.01 (1.63)

Note. CSA = childhood sexual abuse; Pos. maternal = positive maternal socialization of negative emotions; Pos. paternal = positive paternal socialization of negative emotions; Neg. maternal = negative maternal socialization of negative emotions; Neg. paternal = negative paternal socialization of negative emotions; TAS ID = difficulties identifying feelings; TAS DE = difficulties describing feelings; TAS EXT = externally oriented thinking; BDI sqrt = square root of total scores on the Beck Depression Inventory—II.
* *p* < .05. ** *p* < .01.

participants scored in the clinically elevated range of the TAS-20, which is comparable with that found in an outpatient sample of sexually abused women (Vanheule, Desmet, Meganck, & Bogaerts, 2007).

Mediational Analyses Testing Relationships Between CSA Severity, Parent Socialization of Emotions, Alexithymia, and Depression

Results of the individual mediational models are shown in Table 2. The first series of regression analyses investigated whether alexithymia mediated the link between CSA and depression. Bivariate analyses suggested significant positive relations between CSA se-

verity and depression, between CSA severity and alexithymic difficulties (in identifying and describing feelings), and between alexithymia and depression. A significant relationship between externally oriented thinking and CSA severity did not emerge; therefore, externally oriented thinking was excluded from further analyses. Mediational results indicated that difficulties identifying and describing negative feelings each partially mediated the association between CSA severity and depression, thus providing some support to the first mediational hypothesis; the Sobel tests for these models were 2.24 ($p < .05$) and 2.36 ($p < .05$), respectively. However, because the relationship between CSA sever-

Table 2
Results of Mediational Analyses

Model	<i>b</i>	<i>SE</i>	Wald <i>Z</i>	β
Model 1: Direct path				
CSA → BDI sqrt (Path <i>c</i>)	0.26	0.07	3.92***	0.36
Model 1a: Mediational analyses				
CSA → TAS ID (Path <i>a</i>)	0.62	0.27	2.32*	0.22
TAS ID → BDI sqrt (Path <i>b</i>)	0.15	0.02	8.56***	0.61
CSA → BDI sqrt (Path <i>c'</i>)	0.16	0.05	3.08**	0.22
Model 1b: Mediational analyses				
CSA → TAS DE (Path <i>a</i>)	0.45	0.18	2.56*	0.24
TAS DE → BDI sqrt (Path <i>b</i>)	0.19	0.03	6.13***	0.50
CSA → BDI sqrt (Path <i>c'</i>)	0.17	0.06	2.96**	0.24
Model 2: Direct path				
CSA severity → TAS ID (Path <i>c</i>)	0.62	0.27	2.32*	0.22
Model 2a: Mediational analyses				
CSA severity → Positive maternal (Path <i>a</i>)	-8.48	2.23	-3.80***	-0.35
Positive maternal → TAS ID (Path <i>b</i>)	-0.03	0.01	-3.00***	-0.28
CSA severity → TAS ID (Path <i>c'</i>)	0.34	0.28	1.25	0.12
Model 3: Direct path				
CSA severity → TAS DE (Path <i>c</i>)	0.45	0.18	2.56*	0.24
Model 3a: Mediational analyses				
CSA severity → Positive maternal (Path <i>a</i>)	-8.48	2.23	-3.80***	-0.35
Positive maternal → TAS DE (Path <i>b</i>)	-0.03	0.01	-3.57**	-0.33
CSA severity → TAS DE (Path <i>c'</i>)	0.24	0.18	1.33	0.13
Model 3b: Mediational analyses				
CSA severity → Positive paternal (Path <i>a</i>)	-7.56	1.98	-3.82***	-0.35
Positive paternal → TAS DE (Path <i>b</i>)	-0.02	0.01	-2.63*	-0.25
CSA severity → TAS DE (Path <i>c'</i>)	0.29	0.18	1.58	0.15

Note. Full mediation = Models 2a, 3a, and 3b. Partial mediation = Models 1a and 1b. When one or more conditions recommended by Baron and Kenny (1986) are not met, mediational analyses could not be conducted and these models are omitted from the table. Path *a* = independent variable (IV)–mediator relationship; Path *b* = mediator–dependent variable (DV) relationship; Path *c* = direct IV–DV relationship; Path *c'* = IV–DV relationship in the presence of mediator; CSA = childhood sexual abuse; BDI sqrt = square root of total scores on the Beck Depression Inventory—II; TAS ID = difficulties identifying feelings; TAS DE = difficulties describing feelings; Positive maternal = positive maternal socialization of negative emotions; Positive paternal = positive paternal socialization of negative emotions.

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

ity and depression remained significant in the presence of both mediators, partial mediation was indicated (see Table 2, Model 1).

To examine whether positive emotion socialization mediated relationships between CSA severity and alexithymia, a second series of regression models was examined separately for mothers and fathers. As predicted, positive maternal and paternal emotion socialization were each negatively correlated with CSA severity and all three alexithymia dimensions. Negative emotion socialization by mothers and fathers were each associated with alexithymic difficulties in identifying and describing feelings but not with CSA severity; thus, criteria for mediation by negative emotion socialization were not met. However, results supported our second mediational hypothesis for positive emotion socialization (see Table 2, Models 2 & 3) by demonstrating that positive maternal practices (e.g., problem solving, support, or expressive encouragement) fully mediated the links between CSA severity and difficulties identifying and describing feelings; the Sobel tests for these models were 2.35 ($p = .02$) and 3.75 ($p < .001$), respectively. Because the relationship between CSA severity and both difficulties identifying and describing feelings was nonsignificant in the presence of positive maternal socialization, full mediation was in-

dicated. Furthermore, positive paternal socialization practices fully mediated the links between CSA severity and difficulties describing feelings; the Sobel test for this model was -1.83 ($p = .06$). However, because the relationship between CSA severity and difficulties describing feelings was nonsignificant in the presence of positive paternal socialization, full mediation was indicated.

Path Analyses

Collectively, results of individual mediational models suggest the following sequence of relationships: CSA severity predicts positive maternal and paternal socialization of negative emotions; positive socialization of negative emotions predicts difficulties with identifying and describing feelings; and difficulties identifying and describing feelings predict depression. Figure 1 depicts a “full” path model estimating the above linear sequence of variables, with a correlation between identifying and describing feelings to account for the association between the constructs. Model fit was poor, $\chi^2(1) = 36.13$, $p < .001$; RMSEA = 0.57, SRMR = 0.10, CFI = 0.85; as indicated by a significant model χ^2 statistic and RMSEA, SRMR, and CFI values outside the ranges recommended by Hu and Bentler (1999). Consistent with model-trimming procedures suggested

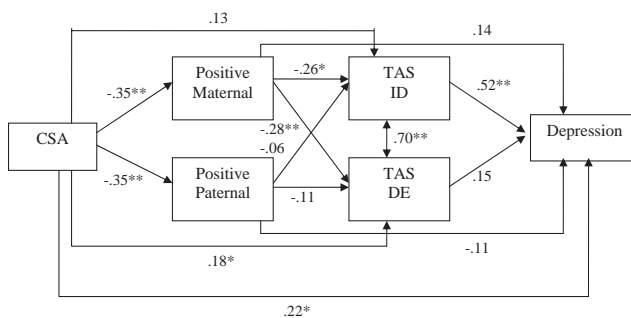


Figure 1. Full path model predicting depression from childhood sexual abuse, maternal and paternal positive and negative socialization of emotions, and alexithymia (difficulty identifying feelings [TAS ID] and difficulty describing feelings [TAS DE]), with all direct and indirect paths illustrated. Childhood sexual abuse = exogenous variable; maternal and paternal positive socialization of emotions and alexithymia = endogenous variables; depression = outcome variable. Standardized coefficients from MPlus output are reported. CSA = childhood sexual abuse severity; Positive maternal = positive maternal socialization of negative emotions; Positive paternal = positive paternal socialization of negative emotions; Depression = square root of total scores on the Beck Depression Inventory—II. * $p < .05$. ** $p < .01$.

by Kline (2005), the nonsignificant paths between positive maternal and paternal socialization practices and depression were removed from the full model to improve model fit. Furthermore, because positive paternal socialization practices were not significantly associated with CSA or with difficulties with identifying or describing feelings, positive paternal socialization was removed from the trimmed model entirely. The fit of the resulting “trimmed” model, $\chi^2(1) = 1.35, p = .25; RMSEA = 0.06, SRMR = 0.02, CFI = 0.99$, was excellent and accounted for 49% of the variance in depressive symptoms (see Figure 2). As a result, the more parsimonious sequential trimmed model in Figure 2 was retained. The paths between CSA severity and identifying and describing feelings were nonsignificant in the presence of positive maternal socialization practices. Furthermore, the path between describing feelings and depression symptoms also was nonsignificant, and a significant relationship between CSA severity and depressive symptoms remained in the presence of positive maternal emotion socialization practices and difficulties identifying and describing feelings.

Discussion

The overarching goal of this study was to identify mechanisms that may affect the risk for depression in women reporting varying degrees of sexual abuse as a child. In doing so, we first examined alexithymia as a mediator accounting for the relation between CSA and depression in adulthood. Second, we examined whether alex-

ithymia reported by CSA survivors was accounted for by their perceptions of parental emotion socialization within their families-of-origin. Finally, we examined these intervening processes in combination to gain a more complete understanding of pathways leading to depression among CSA survivors. In this final model, we expected that early emotion socialization and alexithymia would mediate associations between severity of CSA and depression experienced by women.

Our findings showed that disruptions in abilities to discern and describe feelings partially accounted for the relationship between severity of early sexual abuse and increased adult depression. Consistent with previous research (Joukamaa, Luutonen, Reventlow, Karlsson, & Salokangas, 2008), these results highlight alexithymia as an important aspect of emotional functioning that may be dysregulated among survivors of early sexual abuse. Moreover, in line with studies linking alexithymia to depression in the general population and psychiatric outpatient samples (Honkalampi et al., 2001; Saarijärvi et al., 2006), our findings indicate that alexithymia may be one factor that accounts for increased depressive symptoms commonly endorsed by women with a history of sexual abuse. The present results suggest a process, alluded to by others (e.g., Rosenthal, Rasmussen Hall, Palm, Batten, & Follette, 2005), in which survivors of CSA learn to repeatedly avoid or suppress their intense and overwhelming emotional arousal. Although avoidance behaviors may offer temporary escape from

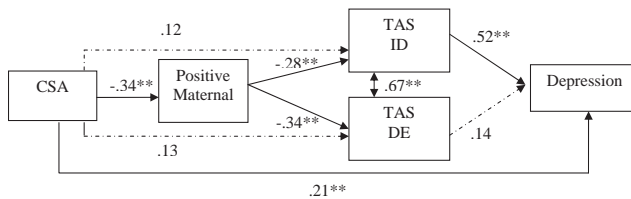


Figure 2. Trimmed path model predicting depression from childhood sexual abuse, maternal positive socialization of negative emotions, and alexithymia. Significant paths are illustrated by solid lines. Childhood sexual abuse = exogenous variable; maternal positive socialization of negative emotions and alexithymia = endogenous variables; depression = outcome variable. Standardized coefficients from MPlus output are reported. CSA = childhood sexual abuse severity; Positive maternal = positive maternal socialization of negative emotions; TAS ID = difficulties identifying feelings; TAS DE = difficulties describing feelings; Depression = square root of total scores on the Beck Depression Inventory—II. * $p < .05$. ** $p < .01$.

painful emotions, chronic avoidance of distressing internal experiences may disrupt emotional processing of abuse experiences (Orcutt, Pickett, & Pope, 2005) and paradoxically increase emotional distress (Polusny & Follette, 1995). Difficulties in understanding one's feelings or lacking words to describe those feelings may also reduce adult survivors' emotional connection with others and their environment (Paivio & McCulloch, 2004; Vanheule et al., 2007), which may, in turn, exacerbate depression.

In examining the origins of alexithymia, results suggested that less positive responses to negative emotions on the part of parents (e.g., offering less support, problem solving, or expressive encouragement) may eventually undermine survivors' management of their own negative emotions. Positive and supportive parenting behaviors, in general, have been identified as factors that safeguard children from developing emotion regulation deficits (Gottman et al., 1996). Moreover, alexithymic deficits in recognizing and articulating feelings are thought to develop in childhood, shaped in part by early family environments (Kench & Irwin, 2000)—a suggestion also extended to abuse survivors (Joukamaa et al., 2008). Furthermore, it has been demonstrated that perceptions of caregivers' general parenting styles may have an important bearing on adult CSA survivors' current emotional functioning (Kooiman et al., 2004). Our finding adds to this literature by specifically implicating positive emotion socialization by parents as a potential mechanism that may undermine survivors' abilities to self-regulate emotions in adulthood.

Unexpectedly, CSA severity was unrelated to survivors' perceptions of negative emotion socialization by their parents. We cannot satisfactorily explain this finding, but it seems important to explore the factors that may weaken the relationship between early abuse experience and adult reports of negative parental socialization. Although we cannot verify this in our sample, a potential area for future research is to examine how empirically supported psychological interventions for abuse survivors alter survivors' concerns about negative parental behaviors in childhood (e.g., punishment, minimization, and distress reactions).

In the final path model, increased CSA severity predicted survivors' recall of fewer positive socialization practices by mothers, which were associated with greater alexithymia; these problems, in turn, predicted greater depressive symptomatology. Although our smaller mediational models revealed the important role of positive emotion socialization by both mothers and fathers, the final path model highlighted only lack of supportive practices by mothers as mediating the relation between sexual abuse and alexithymia. One explanation for the relative significance of maternal emotion socialization may be found in the differing roles that mothers and fathers adopt in socializing their children. Previous work indicates that mothers adopt an active facilitative role of an "emotional coach" with children by directly teaching children about emotions, whereas fathers contribute to their children's self-regulatory abilities by assuming the role of a dominant "playmate" in rough-and-tumble play or supporting the primary emotional coach in the family, often the child's mother (Denham & Kochanoff, 2002; Flanders et al., 2010). Furthermore, the measure utilized in the present study to assess parental emotion socialization (i.e., SES) is specifically targeted toward capturing parents' direct responses to emotional displays as a child in general situations, which may have precluded tapping into parental responses in the context of physical play—a more frequent and preferred mode of socialization by fathers.

Limitations

The present study has limitations that shed light on directions for future research in this area. First, although findings are consistent with proposed models, the correlational, cross-sectional design of the study precludes conclusions about causality or the temporal ordering of model variables. Future longitudinal studies are needed to examine these questions. Second, although women appeared to report CSA freely, it is possible that the passage of time or reluctance on the part of some participants to disclose sexual abuse may have affected our assessment of these experiences. Retrospective reports of parental socialization may also be subject to inten-

tional or unintentional distortions and should be interpreted as reflecting participants' current perceptions rather than literal accounts of those early events. Nevertheless, the present findings add to others (e.g., Walker, Holman, & Busby, 2009) that suggest that adult survivors' perceptions of their families-of-origin are an important lens through which current functioning may be affected. Again, prospective designs are needed to assess the unfolding over time of variables such as parental emotional socialization. Third, because we specifically sought to include women with a range of sexual victimization histories, the rates of CSA in this sample are high and may not represent female veterans overall. The largely European American makeup of the sample also limits generalizability. Replicating this study with a larger, ethnically diverse sample of female and male survivors is needed to examine the broader generalizability of these findings. Finally, although we tested the hypothesis that parental socialization practices in response to CSA mediate later outcomes, it is quite possible that emotion socialization processes that precede abuse may moderate subsequent associations with long-term functioning (see, e.g., Whiffen & MacIntosh, 2005). Therefore, future studies should examine the moderating as well as mediating effects of parental emotion socialization.

Clinical Implications

Results of this study advance our understanding of mechanisms explaining associations between CSA and adult depression by suggesting that survivors' perceptions of childhood socialization of emotion by parents (particularly mothers) and related difficulties with identifying and verbalizing their emotions may affect their experience of depression in adulthood. These findings have several clinical implications. First, these findings support the need for further research evaluating the efficacy of mindfulness-based therapies that teach emotion regulation skills (e.g., observing and describing one's internal experiences) applied to CSA survivors. Early interventions targeting emotion regulation skills development in sexually abused children might prevent the cascade of long-term effects, including alexithymia and depression,

which frequently follow in the aftermath of sexual abuse. Second, results of this study showing that sexually abused women recalled fewer positive socialization practices by their mothers suggest that parent training interventions, especially those that incorporate effective positive parenting practices and build parents' own emotion regulation skills (Gewirtz, Forgatch, & Wieling, 2008) might offer another means of helping parents respond more effectively to their children's emotions and building their resilience. Furthermore, regardless of the actual family environments they grew up in, preserving memories of supportive parenting appears to alleviate distress in sexually victimized women, which may inform therapy for these individuals.

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