Psychiatry Research 276 (2019) 18–24

Contents lists available at ScienceDirect

Psychiatry Research

journal homepage: www.elsevier.com/locate/psychres

Parental threats and adolescent depression: The role of emotion dysregulation

Erika S. Trent[a], Andres G. Viana[a,b,*], Elizabeth M. Raines[a], Emma C. Woodward[a], Eric A. Storch[c], Michael J. Zvolensky[a,d]

[a] Department of Psychology, University of Houston, Houston, TX 77204, USA
[b] Texas Institute of Measurement, Evaluation, and Statistics, University of Houston, Houston, TX 77204, USA
[c] Menninger Department of Psychiatry & Behavioral Sciences, Baylor College of Medicine, Houston, TX, USA
[d] Department of Behavioral Science, The University of Texas MD Anderson Cancer Center, Houston, TX, USA

ARTICLE INFO

Keywords:
Parenting
Emotion regulation
Emotional clarity
Depression
Adolescents

ABSTRACT

Childhood exposure to parental threatening behaviors places adolescents at greater risk for depression. However, the association between parental threatening behaviors and depressive symptoms among trauma-exposed inpatient youth, and potential factors that exacerbate the harmful effects of such parenting, have remained unexplored. One factor that may contribute to depression is low emotional clarity, which is characterized by difficulties recognizing and understanding one's emotions. The current investigation examined the interactive effects of childhood exposure to maternal threatening behaviors and emotional clarity deficits in relation to depressive symptoms among inpatient psychiatric youth who had been exposed to a potentially traumatic event (i.e., exposure to actual or threatened death, serious injury, or sexual violence). Participants ($N = 50$, $M_{age} = 15.1$ years, $SD = 0.51$, range 12–17) completed measures of emotion dysregulation, childhood exposure to maternal threatening behavior, and depressive symptoms. A significant interaction was found between exposure to maternal threatening behaviors and deficits in emotional clarity in relation to depressive symptom severity. Greater exposure to maternal threatening behaviors was related to more severe depressive symptoms, yet only among children with greater deficits in emotional clarity. Findings underscore the need for interventions that target emotional clarity among trauma-exposed youth who have experienced parental threats.

1. Introduction

Depressive disorders among adolescents are a significant public health concern, with estimated 12-month prevalence rates of 7.5% and lifetime prevalence rates of 11.0% in youth ages 13–18 years (Avenevoli et al., 2015). Adolescent depression is associated with severe and widespread functional impairment (Davila, 2008; Puig-Antich et al., 1993; Reinherz et al., 1999; Rudolph, 2009), increased risk for psychiatric comorbidity and other medical conditions (Harrington and Dubicka, 2001), and is among the leading risk factors for teen suicide (Nock et al., 2013). Additionally, more severe depressive symptomatology is associated with increased suicidality among adolescents (Nock et al., 2013). From this perspective, there is a clear and pressing need for continued research on the underlying mechanisms associated with depressive symptomology in youth.

Adverse family environments contribute to the onset, duration, and probability of recurrence of adolescent depression (Birmaher et al., 2002), with negative parenting—especially psychological maltreatment toward the child (e.g., verbal hostility, rejection)—identified as a key factor (e.g., Donovan and Brassard, 2011; Schwartz et al., 2012; Wang and Kenny, 2014). For example, longitudinal studies have found that more frequent exposure to parental verbal aggression, measured via adolescent self-report (Donovan and Brassard, 2011) or in observation of parent-child interactions (Schwartz et al., 2012), predicts increased depressive symptoms. Additionally, there is emerging support for the reciprocal nature of parental psychological maltreatment and adolescent depression symptoms. Wang and Kenny (2014) found that parents' harsh verbal discipline predicted increases in adolescent depressive symptoms, which in turn, predicted increases in parents' harsh verbal discipline a year later.

The harmful effects of childhood exposure to parental psychological maltreatment during childhood and adolescence extend into adulthood.

* Corresponding author at: Child Temperament, Thoughts, and Emotions Laboratory, Department of Psychology, University of Houston, Health and Biomedical Sciences Building, Room 373, TX 77204, USA.
E-mail address: agviana@uh.edu (A.G. Viana).

https://doi.org/10.1016/j.psychres.2019.04.009
Received 13 February 2019; Received in revised form 4 April 2019; Accepted 5 April 2019
Available online 05 April 2019
0165-1781/

Adult victims of childhood psychological maltreatment (compared to adults without a history of maltreatment) report increased levels of depressive symptoms in general (McLeod et al., 2007) and major depressive disorder in particular (Scher et al., 2002). Furthermore, childhood exposure to parental psychological aggression was more predictive of psychological distress in early adulthood than childhood exposure to corporal punishment or physical abuse (Miller-Perrin et al., 2009). Negative self-perceptions mediated this relationship, suggesting that messages communicated to the child through parental psychological aggression—that they are worthless, unloved, or unwanted—contributed more heavily to distress than did physical maltreatment (Miller-Perrin et al., 2009). These findings underscore the profound, and potentially long-term, deleterious effects of childhood exposure to parental psychological maltreatment on the psychological well-being of adolescents.

However, research suggests that the strength of the association between negative parenting and youth depression varies as a function of the dimension of parenting behavior examined (McLeod et al., 2007). For instance, a meta-analytic investigation of 45 studies found that parental rejection accounted for a larger proportion of the variance in childhood depression than parental control (McLeod et al., 2007). A separate investigation found that parental *threatening* behaviors—conceptualized as behaviors that convey threats of rejection, abandonment, or punishment, which communicate to a child that others are unpredictable and the world is unsafe (Scher et al., 2002)—may play a central role in adolescent depression (Scher et al., 2002). Scher and colleagues found that retrospective reports of childhood exposure to parental threatening behaviors were related to current depressive distress and disorders among undergraduates (Scher et al., 2002; Scher and Stein, 2003). A separate investigation also found that recalled levels of perceived threat from family—and parents specifically—during childhood were significantly associated with depressive symptom severity (Gilbert et al., 2003).

Although evidence exists for the relation between parental threatening behaviors and youth depression (Scher et al., 2002), little is known about variables that may interact with parental threatening behaviors in relation to depression (Cummings et al., 2002). Specifically, interactive models of parental threatening behaviors by cognitive-affective processes—such as adolescents' emotion regulation skills—in relation to adolescent depressive symptoms have been understudied. This line of inquiry is important as it may lead to the identification of youth who are most vulnerable to the effects of negative parental behaviors and may benefit from targeted interventions designed to enhance their emotional resilience. In this respect, examining these relations among youth with high rates of exposure to negative parental behaviors—such as trauma-exposed inpatient adolescents (Gewirtz et al., 2008)—is especially relevant.

One factor that may interact with childhood exposure to parental threatening behaviors in relation to adolescent depression is emotional clarity, defined as the ability to clearly recognize and understand one's emotions (Gratz and Roemer, 2004). Mounting evidence provides robust support for the association between low emotional clarity and adolescent depression. In cross-sectional studies, deficits in emotional clarity are associated with more severe depressive symptoms in children (Flynn and Rudolph, 2010) as well as adolescents (Neumann et al., 2010; Salguero et al., 2012; Weinberg and Klonsky, 2009). Longitudinal investigations with adolescents have also reported that deficits in emotional clarity are prospectively associated with the development of depressive symptoms (Flynn and Rudolph, 2014; Salguero et al., 2013), which in turn, predict further decreases in emotional clarity over time (Rubenstein et al., 2015).

There is also ample evidence that low emotional clarity in youth may be related to exposure to negative parenting behaviors. In a longitudinal study of early adolescents, parental emotional neglect significantly predicted decreases in emotional clarity, which in turn, predicted increases in depressive symptoms over a two-year period (Jessar et al., 2017). A separate investigation also found that poor family functioning was associated with lower emotional clarity, which in turn, predicted increased adolescent depressive symptoms (Freed et al., 2016). In contrast, high emotional clarity was found to reduce the influence of life stress on depressive symptoms among adolescents (Stange et al., 2013), and it attenuated the effect of physical pain on depressive symptoms among older adults (Kennedy et al., 2010).

With this background, the present investigation examines relationships between childhood exposure to parental threatening behaviors, adolescents' emotional clarity, and depressive symptom severity in a sample of inpatient adolescents with a history of trauma exposure. We focus on this population given the high rates of emotional dysregulation (Shipman et al., 2005, 2000), mood-related difficulties (Ford et al., 2010), and exposure to parental maltreatment (Scheering and Zeanah, 2001) that often characterizes these youth. We hypothesized a significant interaction between childhood exposure to maternal threatening behaviors and deficits in emotional clarity in relation to depressive symptom severity, such that greater exposure to maternal threatening behaviors would be related to more severe depressive symptoms among adolescents with low (vs. high) emotional clarity. Absent a significant interaction, we further hypothesized that the main effects of childhood exposure to parental threatening behaviors and deficits in emotional clarity would be significantly and positively associated with adolescents' depressive symptom severity.

2. Method

2.1. Participants

The sample was obtained from previous studies examining individual differences in internalizing psychopathology in inpatient youth (Viana et al., 2018, 2017). Data were collected from 74 adolescents ages 12–17 years admitted for acute psychiatric treatment at an inpatient state hospital. Exclusion criteria included: a) active psychosis, b) suicidal or homicidal risk, c) mental retardation or autism diagnosis, and d) physical disability impairing the ability to use a computer. Only subjects who had been exposed to a potentially traumatic event were included in the current study. Trauma-exposure was defined as a Criterion A event in the PTSD diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5; American Psychiatric Association, 2013), namely exposure to actual or threatened death, serious injury, or sexual violence. Subjects reported the "most distressing event" they had experienced through the Childhood PTSD Symptoms Scale (CPSS; Foa et al., 2001). Twenty-four subjects were excluded from the current study for either: 1) not reporting a traumatic event on the CPSS; or 2) reporting an event that could not be reliably classified by the research team as a Criterion A event for PTSD (e.g., breakup with boyfriend). The final sample consisted of 50 psychiatric inpatient adolescents (52.0% female, M_{age} = 15.1 years, SD = 1.4, range 12–17 years) who were exposed to at least one traumatic event. In terms of race/ethnicity, 44.0% of the final sample self-identified as White/European American, 36.0% as African American, and 20.0% as multiracial or other.

The most common primary diagnoses were mood disorders (e.g., depression, bipolar disorder; 54.0%), followed by ADHD (18.0%) and disruptive behavior disorders (e.g., oppositional defiant disorder, conduct disorder; 16.0%). In addition, 90.0% of participants reported taking at least one prescribed psychiatric medication for mood or behavioral problems. Forty-two percent of the sample endorsed a past history of suicidal ideation, and 40% endorsed a past suicidal attempt. In terms of trauma, participants scored an average of 13.7 on the CPSS, and 40.0% of the sample screened for a probable PTSD diagnosis as evidenced by a total CPSS score of 16 or greater. In relation to exposure to maternal threatening behaviors, participants reported a mean of 29.9 (SD = 13.1) on the Parent Threat Inventory (PTI; Scher et al., 2002)—a mean higher than that of undergraduate samples (e.g., M = 23.55 in

Scher et al., 2002; $M = 21.33$ in Scher and Stein, 2003).

2.2. Measures

2.2.1. Childhood PTSD symptom scale (CPSS; Foa et al., 2001)

The CPSS is a 24-item self-report questionnaire that assesses DSM-IV PTSD diagnostic criteria and symptom severity in youth ages 8–18. The first question is open-ended, and asks the participant to report the "most distressing event" they have experienced. The next 17 items are Likert-scale items that measure the severity of PTSD symptoms on a 4-point frequency scale (0 = *not at all* to 3 = *five or more times a week*). The last seven items assess trauma-related functional impairment (e.g., difficulty with family, friends, or schoolwork), and are scored dichotomously (0 = *absent*, 1 = *present*). The PTSD symptom severity score is computed by summing the first 17 Likert-scale items ($\alpha = 0.90$ in this study), and the PTSD-related functional impairment score is computed by summing the last seven items ($\alpha = 0.80$ in this study).

2.2.2. Parent threat inventory (PTI; Scher et al., 2002)

The PTI is a 17-item self-report questionnaire that assesses frequency of exposure to parental threatening behaviors during childhood. Respondents rate each item on a 5-point scale ranging from 1 (*never*) to 5 (*very often true*). The PTI measures three types of parental threatening behaviors: 1) threats of rejection or unavailability (e.g., "My mother said she would stop taking care of me if I did not behave"), 2) threats of abandonment (e.g., "My mother threatened to divorce my dad"), and 3) threats of punishment or neglect (e.g., "My mother raised her hand as if she was going to hit me"). The total score is obtained by summing all items. Scher et al. (2002) report an internal consistency of 0.91 and a four-week test-retest reliability of 0.89 in a sample of undergraduates. Convergent validity with relevant measures of parenting (Childhood Trauma Questionnaire, Bernstein et al., 1994; Parental Bonding Instrument, Parker et al., 1979) also support the measure's construct validity (Scher et al., 2002). Although separate forms corresponding to parental threatening behaviors displayed by mothers and fathers, respectively, are available, in the present study participants completed the maternal version of the PTI. This choice was made given the small sample size and because mothers play a significantly larger role in child-rearing in the U.S. (National Alliance for Caregiving and AARP Public Policy Institute, 2015; Pew Research Center, 2013). In this study, the internal consistency of the PTI was $\alpha = 0.89$.

2.2.3. Difficulties in emotion regulation scale (DERS; Gratz and Roemer, 2004)

The DERS is a 36-item self-report questionnaire that assesses clinically relevant difficulties in emotion regulation. Items are scored on a 5-point scale (1 = *almost never* to 5 = *almost always*). DERS scores have demonstrated good test re-test reliability over a period of 4–8 weeks in a sample of undergraduates (Gratz and Roemer, 2004). Construct validity and reliability of the DERS are also supported within adolescent samples (e.g., Neumann et al., 2010). The DERS emotional clarity subscale (hereafter referred to as "DERS-Clarity;" sample items include "I have difficulty making sense out of my feelings" and "I am confused about how I feel") was used in the current study. Higher scores are indicative of higher deficits in emotional clarity. In this study, the internal consistency of the DERS-Goals subscale was $\alpha = 0.65$.

2.2.4. Children's depression inventory (CDI; Kovacs, 1992)

The CDI is a widely used, 27-item (rated 0, 1, or 2) child self-report questionnaire assessing depressive symptomatology over the preceding two weeks (e.g., "nothing will ever work out for me", "I feel alone many times"). A total CDI score is obtained by summing all items. The CDI discriminates between depressed and nondepressed adolescents (Kovacs, 1992, 1985; Matthey and Petrovski, 2002) in outpatient and inpatient populations (Friedberg and Sinderman, 2011). Reliability and concurrent validity are high, and age-based and sex-based norms are available (Kovacs, 1992). In this study, the internal consistency of the CDI was $\alpha = 0.92$.

2.3. Procedure

Upon hospital admission, a trained research assistant provided a description of the study and obtained written parental consent and adolescent assent to participate in the study. The informed consent also granted permission for the hospital to release the participants' diagnoses (per chart review) to the research staff. Investigators did not conduct diagnostic clinical assessments to limit patient burden within the context of a highly controlled setting. Adolescents who provided informed consent and met the inclusionary criteria completed the study battery within four to seven days of admission. Upon completion of the study, participants were fully debriefed. All procedures were approved by the Institutional Review Board (IRB) of both the state hospital where the data collection took place and the University of Mississippi Medical Center.

2.4. Data analyses

Two participants had missing data on the PTI; mean imputation was used to replace missing values (Tabachnick and Fidell, 2007). Correlational analyses were conducted to examine relationships between the primary study variables and identify potential covariates. A two (sex: male, female) by three (race: White, African American, Other[1]) univariate ANOVA was conducted to examine gender and ethnic differences in youths' level of exposure to maternal threatening behaviors, emotional clarity, and depressive symptoms. Finally, the PROCESS macro for SPSS (Hayes, 2018) was used with PTI as the predictor variable, CDI as the criterion variable, and PTI by DERS-EC as the interaction term, to compute regression analyses with centered means, bias-corrected confident intervals, and 95% bootstrapping of 10,000 resamples. The interaction term, as well as tests of the simple slopes at ± 1 *SD* of the mean level of emotional clarity deficits, was automatically computed in PROCESS. Directions of significant interactions were examined graphically, as recommended by Cohen and Cohen (1983), and statistically, as recommended by Holmbeck (2002), by examining the 95% bootstrapped confidence intervals for the effect of exposure to maternal threat on depressive symptoms at each level of emotional clarity deficits. Finally, we employed the Johnson–Neyman technique (Johnson and Neyman, 1936) to evaluate the region of significance of the interaction. This procedure identifies the precise values of emotional clarity deficits for which the maternal threat-depression association is estimated to be significantly different from zero.

3. Results

3.1. Preliminary analyses

Means, standard deviations, frequency data, ranges, and bivariate correlations among all study variables are presented in Table 1. All variables demonstrated acceptable levels of skewness and kurtosis. DERS-Clarity was significantly related to CDI scores. Age was significantly correlated with CDI scores and was therefore controlled for in the regression analyses. A 2 × 3 ANOVA revealed no gender or ethnic differences in CDI scores (*ps* ranging .217–0.271), PTI scores (*ps* ranging .213–0.613), or DERS-Clarity scores (*ps* ranging 0.209–0.536). As such, gender and ethnicity were not included as covariates in the model.

[1] The "Other" racial category consists almost entirely of participants who self-identified as multiracial. Of the 50 participants whose data were used in this study, only one participant self-identified as non-White Hispanic. For ANOVA analyses, this one participant was grouped into the "Other" category.

Table 1
Correlations and descriptive statistics ($N = 50$).

Variable	1	2	3	4	5	6
1. Age	–					
2. Gender	−0.25	–				
3. Ethnicity	−0.13	0.06	–			
4. PTI	−0.57	0.11	−0.25	–		
5. DERS-EC	−0.14	0.10	0.03	0.23	–	
6. CDI	−0.36*	0.12	0.23	0.27***	0.54**	–
M	15.06	52% female	44% White	29.92	12.26	14.16
SD	1.41	–	–	13.07	4.78	11.15
Range	12–17	0–1	0–2	17–71	5–25	0–38

Note. Gender 1 = Female; *Ethnicity* 0 = African American, 1 = White, 2 = Mixed; *PTI* = parental threat inventory; *DERS-EC* = difficulties in emotion regulation scale, emotional clarity subscale; *CDI* = children's depression inventory.
* $p < .05$.
** $p < .01$.
*** $p = .060$.

3.2. Regression analyses

Statistics for the regression analyses examining the interaction between PTI and DERS-EC scores in relation to CDI scores, controlling for age, are presented in Table 2. The overall model was significant (F [4, 45] = 9.23, $p < .001$) and accounted for 45.1% of variance in depressive symptoms. The interaction between exposure to maternal threatening behaviors and emotional clarity was significant (F [1, 45] = 4.32, $p = .043$) and accounted for an additional 5.3% of the variance in depressive symptoms above and beyond the main effects; thus, main effects were not examined. Examination of the interaction revealed that highest levels of depressive disorder symptoms were found among adolescents with high exposure to maternal threatening behaviors and high deficits in emotional clarity. This finding was supported by statistical examination of the simple slopes (see Fig. 1), in which the relationship between exposure to maternal threatening behaviors and depressive symptoms was significant at high ($B = 0.30$, $SE = 0.13$; $t = 2.32$, $p = .025$; 95% CI [0.04, 0.56]), but not average ($B = 0.06$, $SE = 0.10$; $t = 0.64$, $p = .524$; 95% CI [−0.14, 0.27]) or low ($B = -0.17$, $SE = 0.17$; $t = -0.99$, $p = .325$; 95% CI [−0.51, 0.17]) levels of deficits in emotional clarity. The Johnson–Neyman technique revealed that for emotional clarity deficit scores above 15.32, the association between exposure to maternal threatening behaviors and depressive symptoms was significantly positive (34% of observations were above this value).[2]

4. Discussion

The present investigation examined the interactive effects of exposure to parental threatening behaviors and emotional clarity deficits in relation to depression severity among trauma-exposed inpatient adolescents. Given that this patient population represents a particularly vulnerable group, identifying those who are most at risk for depressive symptomology has the potential to inform the field about the variables that are most critical to address for symptom improvement. Analyses revealed that the interaction between childhood exposure to parental threatening behavior and emotional clarity significantly predicted current depressive symptom severity. Specifically, there was a positive significant relationship between childhood exposure to parental threat and depressive symptomatology among adolescents with high—but not average or low—deficits in emotional clarity. These findings indicate that even in the context of high childhood exposure to parental threatening behaviors, adolescents who can more aptly identify, understand, and process negative emotional experiences may experience lower depression symptoms. Notably, the effect size of this interaction—accounting for an additional 5% of variance—was large; changes in R^2 due to interaction effects are typically small, with effects as small as 1% often considered noteworthy (McClelland and Judd, 1993).

Table 2
Summary of regression analysis testing the interaction of childhood exposure to maternal threatening behaviors and emotional clarity in predicting depressive symptoms, controlling for age ($N = 50$).

Variable	*B*	*SE*	*t*	95% CI
PTI	0.06	0.10	0.64	[−0.14, 0.27]
DERS-EC	1.08***	0.27	4.04	[0.54, 1.62]
PTI x DERS-EC	0.05*	0.02	2.08	[0.002, 0.10]
Age	−2.06*	0.89	−2.31	[−3.86, −0.27]
R^2	0.45***			
F	9.23***			
ΔR^2 due to interaction	0.05*			

Note. PTI = parental threat inventory; *DERS-EC* = difficulties in emotion regulation scale, emotional clarity subscale; *CI* = confidence interval.
*$p < .05$; **$p < .01$; ***$p < .001$.

These findings provide compelling preliminary support for emotional clarity as a protective factor against the well-documented effects of exposure to parental threatening behaviors on adolescent depressive symptoms (Gilbert et al., 2003; Scher et al., 2002). Indeed, youth who are subjected to parental threatening behaviors are vulnerable to experiencing more frequent and intense negative cognitions and emotions (McLeod et al., 2007). High emotional clarity may allow such youth to quickly identify and process negative emotions, thereby preventing ruminative responses or feelings of hopelessness, and instead leading to more adaptive coping. Indeed, there is evidence that emotional clarity is linked to adaptive attributes (e.g., high self-esteem, positive attributional style; Gohm and Clore, 2002) that protect against depression in adults. Conversely, adolescents with negative parental histories *yet* low emotional clarity may struggle to process negative emotions, which may lead to feelings of inadequacy and hopelessness. Over time, these emotion regulation difficulties may contribute to the development of a mood disorder. Although there is evidence that high emotional clarity may buffer the effects of certain depressive risk factors (e.g., negative cognitive styles; Stange et al., 2013) on depressive symptom severity in adolescents, research on adolescent samples is limited. The current investigation expands this literature by identifying the protective effects of emotional clarity against depression severity for trauma-exposed adolescents exposed to negative parenting in childhood—a population with heightened vulnerability to emotional dysregulation and mood-related difficulties (Burns et al., 2010; Ford et al., 2010; Shipman et al., 2007).

Also consistent with extant literature (Flynn and Rudolph, 2010; Resurrección and Salguero, 2014; Stange et al., 2013), bivariate correlations revealed that emotional clarity deficits was significantly associated with depressive symptom severity. This finding is in line with several investigations showing that deficits in emotional clarity signal adolescents' inability to understand and alleviate negative emotional states, which may lead to negative self-views, beliefs of inadequacy, and feelings of hopelessness—all of which reflect manifestations of depression (Flynn and Rudolph, 2014). In addition, the association between childhood exposure to maternal threatening behaviors and adolescent depressive symptom severity approached significance

[2] In order to account for the possible effects of a mood disorder diagnosis on the covariance between exposure to parental threatening behaviors and depressive symptom severity, analyses were also conducted controlling for the presence of a mood disorder diagnosis (0 = absent; 1 = present), as well as age. Results were nearly identical and the interaction between exposure to maternal threatening behaviors and emotional clarity remained significant (F [1, 44] = 4.28, $\Delta R^2 = 0.05$, $p = .04$; $B = 0.05$, $SE = 0.02$, $t = 2.07$, 95% CI [0.001, 0.10]).

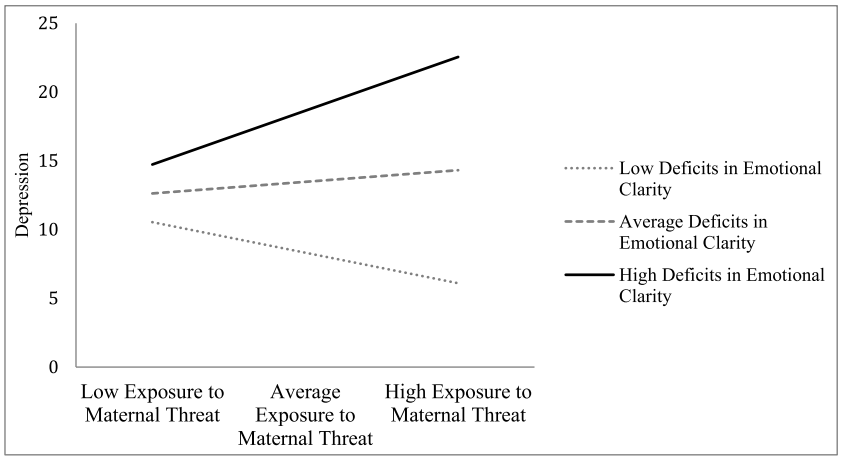

Fig. 1. Predicted levels of depression symptom severity among adolescents as a result of the interactive effect of childhood exposure to maternal threat and deficits in emotional clarity.
Notes. Depression symptom severity derived from Child Depression Inventory. Childhood exposure to maternal threat derived from the Parental Threat Inventory. Deficits in emotional clarity derived from the Difficulties in Emotion Regulation Scale-Emotional Clarity subscale.

(p = .060). This is also consistent with extant literature identifying childhood psychological maltreatment—and parental threatening behaviors more specifically—as a risk factor for the subsequent development of depression (Scher et al., 2002).

Results from the present investigation have several notable clinical implications. First, addressing emotional clarity deficits in the context of parental threatening behaviors may inform the clinical conceptualization of—and interventions for—adolescents with depression symptoms. Specifically, when faced with parental threats, a child who has limited emotional clarity may struggle to recognize complex emotions related to this stressor (e.g., overlapping feelings sadness, anger, guilt, and worry; Shipman et al., 2005, 2000; Ehring and Quack, 2010). This in turn may interfere with adolescents' ability to appropriately process these emotions, resulting in negative forms of coping (e.g., ruminating and self-blaming, instead of cognitively reframing the incident or seeking social support). Given the important role that parents play in children's socioemotional development (Eisenberg and Valiente, 2004), clinicians should consider the potential benefits of family-based therapies for youth with emotional clarity difficulties and exposure to parental threatening behaviors. These therapeutic approaches have been found to be effective in reducing adolescent depression and suicidality, as well as increasing positive emotions, improving parenting skills, and increasing positive family interactions (Kaslow et al., 2012).

Additionally, these findings suggest that targeting emotion dysregulation—and emotional clarity in particular—within the context of youth depression protocols may be worthwhile. The malleability of emotion regulation abilities is well-documented in both the adult (Nelis et al., 2011) and child (Scarpa and Reyes, 2011) literature. Moreover, such an approach would be consistent with recent trends towards treatments for depression that focus on improving emotional understanding (Berking et al., 2013). Finally, these data inform efforts aimed at improving the identification of adolescents at greater risk for depressive disorders. Specifically, findings underscore the clinical utility of assessing exposure to parental threatening behaviors and emotion dysregulation among trauma-exposed samples; these variables may offer incremental knowledge regarding factors contributing to depression as well as inform treatment decisions for this population. Measures assessing these constructs are brief, free, and easily obtained by contacting the authors of these questionnaires (Foa et al., 2001; Gratz and Roemer, 2004; Scher et al., 2002)

The findings of the current investigation should be interpreted in the context of several limitations. First, cross-sectional data precludes any causal inferences about the directionality of associations between study variables. While most studies suggest that negative parenting contributes to the development of depression (e.g., McLeod et al., 2007), researchers have also recognized that depressed behaviors in youth may also influence their parents' behaviors, resulting in a feedback loop (e.g., Pardini, 2008; Wang and Kenny, 2014). Extending this investigation to a longitudinal design would confirm whether exposure to parental threatening behaviors indeed precipitates depressive symptoms. Second, the present study assessed emotional clarity as a trait variable, which may not fully capture this multidimensional construct. The DERS requires the respondent to report their ability to understand and differentiate between different emotions *in general*, without providing the opportunity to elaborate on specific types of emotions (e.g., sadness vs. anger) or specific contexts that give rise to those emotions (e.g., social contexts). A series of behavioral tasks, assessing emotional clarity regarding different emotions and in different contexts, may provide a multi-layered conceptualization of this construct (see Cole et al.,2004 for a discussion on methodological approaches for measuring emotion regulation more broadly). The self-report approach to assessing emotional clarity is, nonetheless, a useful one that has been used in numerous previous research investigations with proven clinical utility (Vine and Aldao, 2014).

Third, the present study examined only maternal threatening behaviors. Although census data show that mothers typically play a larger role in child-rearing in the U.S. (e.g., Pew Research Center, 2013), examining the effects of *paternal* threatening behaviors can shed light on the unique role that fathers may play in adolescent emotional functioning. Future studies may build upon extant literature by examining and comparing the effects of maternal and paternal threatening behaviors. Finally, the relatively low internal consistency of the emotional clarity subscale in the present sample should be noted. Investigations of nonclinical adolescent and undergraduate samples reported internal consistencies for the DERS emotional clarity subscale ranging from 0.76 to 0.84, which are lower than those of the other DERS subscales (Gratz and Roemer, 2004; Tull and Roemer, 2007; Weinberg and Klonsky, 2009). Thus, it is plausible that emotional clarity is difficult to capture via self-report, particularly among clinical samples of adolescents with high levels of emotional dysregulation.

Overall, the present investigation contributes to the adolescent depression literature by demonstrating a significant interactive effect of childhood exposure to maternal threatening behaviors and deficits in emotional clarity in relation to depressive symptomatology in a sample of trauma-exposed adolescents in inpatient psychiatric care. In addition to identifying emotional clarity as an important construct to assess in this population, the findings set the stage for additional research that evaluates whether interventions targeting emotional clarity lead to reductions in depressive symptom severity.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Conflicts of interest

The authors have no conflicts of interest to declare.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

Parental and adolescent informed consent was obtained from all individual participants included in the study.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.psychres.2019.04.009.

References

American Psychiatric Association, 2013. Diagnostic and Statistical Manual of Mental Disorders, fifth ed. American Psychiatric Publishing, Arlingon, VA.

Avenevoli, S., Swendsen, J., He, J.-P., Burstein, M., Merikangas, K., 2015. Major depression in the national comorbidity survey-adolescent supplement: prevalence, correlates, and treatment. J. Am. Acad. Child Adolesc. Psychiatry 54, 37–44. https://doi.org/10.1016/j.jaac.2014.10.010.Major.

Berking, M., Ebert, D., Cuijpers, P., Hofmann, S.G., 2013. Emotion regulation skills training enhances the efficacy of inpatient cognitive behavioral therapy for major depressive disorder: a randomized controlled trial. Psychother. Psychosom. 82, 234–245. https://doi.org/10.1159/000348448.

Bernstein, D.P., Fink, L., Handelsman, L., Foote, J., Lovejoy, M., Wenzel, K., Sapareto, E., Ruggiero, J., 1994. Initial reliability and validity of a new retrospective measure of child abuse and neglect. Am. J. Psychiatry 151, 1132–1136.

Birmaher, B., Arbelaez, C., Brent, D., 2002. Course and outcome of child and adolescent major depressive disorder. Child Adolesc. Psychiatr. Clin. 11, 619–638.

Burns, E.E., Jackson, J.L., Harding, H.G., 2010. Child maltreatment, emotion regulation, and posttraumatic stress: the impact of emotional abuse. J. Aggress. Maltreatment Trauma 19, 801–819. https://doi.org/10.1080/10926771.2010.522947.

Cohen, J., Cohen, P., 1983. Applied Multiple Regression For the Behavioral Sciences, second ed. Laurence Erlbaum, Hillsdale, NJ.

Cole, P.M., Martin, S.E., Dennis, T.A., 2004. Emotion regulation as a scientific construct: methodological challenges for child development research. Child Dev. 75, 317–333. https://doi.org/10.1111/j.1467-8624.2004.00673.x.

Cummings, E.M., Davies, P.T., Campbell, S.B., 2002. Developmental Psychopathology and Familial processes: Theory, research, and Clinical Implications. The Guilford Press, New York, NY.

Davila, J., 2008. Depressive symptoms and adolescent romance: theory, research, and implications. Child Dev. Perspect. 2, 26–31. https://doi.org/10.1111/j.1750-8606.2008.00037.x.

Donovan, K.L., Brassard, M.R., 2011. Trajectories of maternal verbal aggression across the middle school years: associations with negative view of self and social problems. Child Abus. Negl. 35, 814–830. https://doi.org/10.1016/j.chiabu.2011.06.001.

Ehring, T., Quack, D., 2010. Emotion regulation difficulties in trauma survivors: The role of trauma type and PTSD symptom severity. Behav. Ther. 41, 587–598. https://doi.org/10.1016/j.beth.2010.04.004.

Eisenberg, N., Valiente, C., 2004. Elaborations on a theme: Beyond main effects in relations of parenting to children's coping and regulation. Parent. Sci. Pract. 4, 319–323. https://doi.org/10.1207/s15327922par0404_2.

Flynn, M., Rudolph, K.D., 2010. The contributions of deficits in emotional clarity to stress responses and depression. J. Appl. Dev. Psychol. 31, 291–297. https://doi.org/10.1016/j.dcn.2011.01.002.

Flynn, M., Rudolph, K.D., 2014. A prospective examination of emotional clarity, stress responses, and depressive symptoms during early adolescence. J. Early Adolesc. 34, 923–939. https://doi.org/10.1177/0272431613513959.

Foa, E.B., Johnson, K.M., Feeny, N.C., Treadwell, K.R.H., 2001. The child PTSD symptom scale: a preliminary examination of its psychometric properties. J. Clin. Child Psychol. 30, 376–384. https://doi.org/10.1207/S15374424JCCP3003.

Ford, J.D., Elhai, J.D., Connor, D.F., Frueh, B.C., 2010. Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents. J. Adolesc. Health 46, 545–552. https://doi.org/10.1016/j.jadohealth.2009.11.212.

Freed, R.D., Rubenstein, L.M., Daryanani, I., Olino, T.M., Alloy, L.B., 2016. The relationship between family functioning and adolescent depressive symptoms: the role of emotional clarity. J. Youth Adolesc. 45, 505–519. https://doi.org/10.1007/s10964-016-0429-y.

Friedberg, R.D., Sinderman, S.A., 2011. CDI scores in pediatric psychiatric inpatients: a brief retrospective static group comparison. Depress. Res. Treat. 1–5. https://doi.org/10.1155/2011/134179.

Gewirtz, A., Forgatch, M., Wieling, E., 2008. Parenting practices as potential mechanisms for child adjustment following mass trauma. J. Marital Fam. Ther. 34, 177–192. https://doi.org/10.1111/j.1752-0606.2008.00063.x.

Gilbert, P., Cheung, M.S.-P., Grandfield, T., Campey, F., Irons, C., 2003. Recall of threat and submissiveness in childhood: development of a new scale and its relationship with depression, social comparison, and shame. Clin. Psychol. Psychother. 10, 108–115. https://doi.org/10.1002/cpp.359.

Gohm, C.L., Clore, G.L., 2002. Four latent traits of emotional experience and their involvement in well-being, coping, and attributional style. Cogn. Emot. 16, 495–518. https://doi.org/10.1080/02699930143000374.

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. J. Psychopathol. Behav. Assess. 26, 41–54. https://doi.org/10.1023/B:JOBA.0000007455.08539.94.

Harrington, R., Dubicka, B., 2001. Natural history of mood disorders in children and adolescents. In: Goodyer, I.M. (Ed.), The Depressed Child and Adolescent. Cambridge University Press, Cambridge, UK, pp. 353–381. https://doi.org/10.1017/CBO9780511543821.014.

Hayes, A.F., 2018. Introduction to mediation, moderation, and Conditional Process analyses: A regression-Based Approach, second ed. Guilford Press, New York, NY.

Holmbeck, G.N., 2002. Post-hoc probing of significant moderational and mediational effects. J. Pediatr. Psychol. 27 (1), 87–96.

Jessar, A.J., Hamilton, J.L., Flynn, M., Abramson, L.Y., Alloy, L.B., 2017. Emotional clarity as a mechanism linking emotional neglect and depressive symptoms during early adolescence. J. Early Adolesc. 37, 414–432. https://doi.org/10.1177/0272431615609157.

Johnson, P.O., Neyman, J., 1936. Tests of certain linear hypotheses and their application to some educational problems. Stat. Res. Mem. 1, 57–93.

Kaslow, N.J., Broth, M.R., Smith, C.O., Collins, M.H., 2012. Family-based interventions for child and adolescent disorders. J. Marital Fam. Ther. 38, 82–100. https://doi.org/10.1111/j.1752-0606.2011.00257.x.

Kennedy, L.A., Cohen, T.R., Panter, A.T., Devellis, B.M., Yamanis, T.J., Jordan, J.M., Devellis, R.F., 2010. Buffering against the emotional impact of pain: mood clarity reduces depressive symptoms in older adults. J. Soc. Clin. Psychol. 29, 975–987.

Kovacs, M., 1985. The children's depression inventoy (CDI). Psychopharmacol. Bull. 21, 995–998.

Kovacs, M., 1992. Children's Depression Inventory (CDI) Manual. Multi-Health Systems. North Tonawanda. https://doi.org/10.1007/s10903-013-9955-9.

Matthey, S., Petrovski, P., 2002. The children's depression inventory: error in cut-off scores for screening purposes. Psychol. Assess. 14, 146–149.

McClelland, G.H., Judd, C.M., 1993. Statistical difficulties of detecting interactions and moderator effects. Psychol. Bull. 114, 376–390. https://doi.org/10.1037/0033-2909.114.2.376.

McLeod, B.D., Weisz, J.R., Wood, J.J., 2007. Examining the association between parenting and childhood depression: a meta-analysis. Clin. Psychol. Rev. 27, 986–1003. https://doi.org/10.1016/j.cpr.2007.03.001.

Miller-Perrin, C.L., Perrin, R.D., Kocur, J.L., 2009. Parental physical and psychological aggression: psychological symptoms in young adults. Child Abus. Negl. 33, 1–11. https://doi.org/10.1016/j.chiabu.2008.12.001.

National Alliance for Caregiving, AARP Public Policy Institute, 2015. Caregiving in the U. S. [WWW Document]. URL https://www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states-2015-report-revised.pdf (accessed 2.10.19).

Nelis, D., Quoidbach, J., Hansenne, M., Kotsou, I., Weytens, F., Dupuis, P., 2011. Increasing emotional competence improves psychological and physical well-being, social relationships, and employability. Emotion 11, 354–366.

Neumann, A., van Lier, P.A.C., Gratz, K.L., Koot, H.M., 2010. Multidimensional assessment of emotion regulation difficulties in adolescents using the difficulties in emotion regulation scale. Assessment 17, 138–149. https://doi.org/10.1177/1073191109349579.

Nock, M.K., Green, J.G., Hwang, I., McLaughlin, K.A., Sampson, N.A., Zaslavsky, A.M., Kessler, R.C., 2013. Prevalence, correlates, and treatment of lifetime suicidal behavior among adolescents. JAMA Psychiatry 70, 300–310. https://doi.org/10.1001/2013.jamapsychiatry.55.

Pardini, D.A., 2008. Novel insights into longstanding theories of bidirectional parent-child influences: introduction to the special section. J. Abnorm. Child Psychol. 36, 627–631. https://doi.org/10.1007/s10802-008-9231-y.

Parker, G., Tupling, H., Brown, L.B., 1979. A parental bonding instrument. Br. J. Med. Psychol. 52, 1–10.

Pew Research Center, 2013. Modern parenthood: roles of moms and dads converge as they balance work and family [WWW Document]. URL http://www.pewsocialtrends.org/2013/03/14/modern-parenthood-roles-of-moms-and-dads-converge-as-they-balance-work-and-family/ (accessed 2.10.19).

Puig-Antich, J., Kaufman, J., Ryan, N.D., Williamson, D.E., Dahl, R.E., Lukens, E., Todak, G., Ambrosini, P., Rabinovich, H., Nelson, B., 1993. The psychosocial functioning and family environment of depressed adolescents. J. Am. Acad. Child Adolesc. Psychiatry 32, 244–253.

Reinherz, H.Z., Giaconia, R.M., Carmola Hauf, A.M., Wasserman, M.S., Silverman, A.B., 1999. Major depression in the transition to adulthood: risks and impairments. J. Abnorm. Psychol. 108, 500–510. https://doi.org/10.1037/0021-843X.108.3.500.

Resurrección, D.M., Salguero, J.M., 2014. Emotional intelligence and psychological maladjustment in adolescence: a systematic review. J. Adolesc. 37, 461–472. https://doi.org/10.1016/j.adolescence.2014.03.012.

Rubenstein, L.M., Hamilton, J.L., Stange, J.P., Flynn, M., Abramson, L.Y., Alloy, L.B., 2015. The cyclical nature of depressed mood and future risk: depression, rumination

and deficits in emotional clarity in adolescent girls. J. Adolesc. 42, 68–76. https://doi.org/10.1016/j.adolescence.2015.03.015.
Rudolph, K.D., 2009. Adolescent depression. In: Gotlib, I.H., Hammen, C.L. (Eds.), Handbook of Depression. The Guilford Press, New York, NY, pp. 444–466. https://doi.org/10.3109/03009739809178946.
Salguero, J.M., Extremera, N., Fernández-Berrocal, P., 2013. A meta-mood model of rumination and depression: preliminary test in a non-clinical population. Scand. J. Psychol. 54, 166–172. https://doi.org/10.1111/sjop.12026.
Salguero, J.M., Palomera, R., Fernández-Berrocal, P., 2012. Perceived emotional intelligence as predictor of psychological adjustment in adolescents: a 1-year prospective study. Eur. J. Psychol. Educ. 27, 21–34. https://doi.org/10.1007/s10212-011-0063-8.
Scarpa, A., Reyes, N.M., 2011. Improving emotion regulation with CBT in young children with high functioning autism spectrum disorders: a pilot study. Behav. Cogn. Psychother. 39, 495–500. https://doi.org/10.1017/S1352465811000063.
Scheering, M.S., Zeanah, C.H., 2001. A relational perspective on PTSD in early childhood. J. Trauma. Stress 14, 799–815. https://doi.org/10.1023/A:1013002507972.
Scher, C.D., Stein, M.B., 2003. Developmental antecedents of anxiety sensitivity. J. Anxiety Disord. 17, 253–269. https://doi.org/10.1016/S0887-6185(02)00202-5.
Scher, C.D., Stein, M.B., Ingram, R.E., Malcarne, V.L., McQuaid, J.R., 2002. The parent threat inventory: development, reliability, and validity. Child Abus. Negl. 26, 207–225. https://doi.org/10.1016/S0145-2134(01)00317-9.
Schwartz, O.S., Dudgeon, P., Sheeber, L.B., Yap, M.B.H., Simmons, J.G., Allen, N.B., 2012. Parental behaviors during family interactions predict changes in depression and anxiety symptoms during adolescence. J. Abnorm. Child Psychol. 40, 59–71. https://doi.org/10.1007/s10802-011-9542-2.
Shipman, K.L., Edwards, A., Brown, A., Swisher, L., Jennings, E., 2005. Managing emotion in a maltreating context: a pilot study examining child neglect. Child Abus. Negl. 29, 1015–1029. https://doi.org/10.1016/j.chiabu.2005.01.006.
Shipman, K.L., 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. Soc. Dev. 16, 268–285. https://doi.org/10.1111/j.1467-9507.2007.00384.x.
Shipman, K.L., Zeman, J., Penza, S., Champion, K., 2000. Emotion management skills in sexually maltreated and nonmaltreated girls: a developmental psychopathology perspective. Dev. Psychopathol. 12, 47–62. https://doi.org/10.1017/S0954579400001036.
Stange, J.P., Alloy, L.B., Flynn, M., Abramson, L.Y., 2013. Negative inferential style, emotional clarity, and life stress: integrating vulnerabilities to depression in adolescence. J. Clin. Child Adolesc. Psychol. 42, 508–518. https://doi.org/10.1080/15374416.2012.743104.
Tabachnick, B.G., Fidell, L.S., 2007. Using Multivariate Statistics, fifth ed. Allyn & Bacon/Pearson Education, Boston, MA.
Tull, M.T., Roemer, L., 2007. Emotion regulation difficulties associated with the experience of uncued panic attacks: evidence of experiential avoidance, emotional nonacceptance, and decreased emotional clarity. Behav. Ther. 38, 378–391. https://doi.org/10.1016/j.beth.2006.10.006.
Viana, A.G., Dixon, L.J., Berenz, E.C., Espil, F.M., 2017. Trauma and deliberate self-harm among inpatient adolescents: the moderating role of anxiety sensitivity. Psychol. Trauma Theory Res. Pract. Policy 9, 509–517. https://doi.org/10.1037/tra0000161.
Viana, A.G., Woodward, E.C., Raines, E.M., Hanna, A.E., Zvolensky, M.J., 2018. The role of emotional clarity and distress tolerance in deliberate self-harm in a sample of trauma-exposed inpatient adolescents at risk for suicide. Gen. Hosp. Psychiatry. https://doi.org/10.1016/j.genhosppsych.2017.10.009.
Vine, V., Aldao, A., 2014. Impaired emotional clarity and psychopathology: a transdiagnostic deficit with symptom-specific pathways through emotion regulation. J. Soc. Clin. Psychol. 33, 319–342. https://doi.org/10.1521/jscp.2014.33.4.319.
Wang, M.Te, Kenny, S., 2014. Longitudinal links between fathers' and mothers' harsh verbal discipline and adolescents' conduct problems and depressive symptoms. Child Dev. 85, 908–923. https://doi.org/10.1111/cdev.12143.
Weinberg, A., Klonsky, E.D., 2009. Measurement of emotion dysregulation in adolescents. Psychol. Assess. 21, 616–621. https://doi.org/10.1037/a0016669.