The Contribution of Deficits in Emotional Clarity to Stress Responses and Depression

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Abstract

This research investigated the contribution of deficits in emotional clarity to children's socioemotional adjustment. Specifically, this study examined the proposal that deficits in emotional clarity are associated with maladaptive interpersonal stress responses, and that maladaptive interpersonal stress responses act as a mechanism linking deficits in emotional clarity to childhood depressive symptoms. Participants included 345 3rd graders (*M* age = 8.89, *SD* = .34) assessed at two waves, approximately one year apart; youth completed self-report measures of emotional clarity, responses to interpersonal stress, and depressive symptoms. Results supported the hypothesized process model linking deficits in emotional clarity, maladaptive interpersonal stress responses, and depressive symptoms, adjusting for prior depressive symptoms. Findings have implications for theories of emotional competence and for depression-intervention efforts aimed at fostering emotional understanding and adaptive interpersonal stress responses.

Keywords

depressive symptoms; emotional clarity; interpersonal stress responses; middle childhood

Several theories have been proposed to explain the onset and recurrence of depression. These theories implicate cognitive (e.g., Abramson, Metalsky, & Alloy, 1989; Beck, 1967), interpersonal (e.g., Coyne, 1976), environmental (e.g., Brown & Harris, 1989; Monroe & Harkness, 2005), and genetic (e.g., Sullivan, Neale, & Kendler, 2000) risk factors. Surprisingly, relatively little research has examined individual differences in the experience of emotions that confer vulnerability to depression, particularly during childhood. The goal of the present research was to examine one dimension of children's affective experience— deficits in emotional clarity—that might place them at risk for depressive symptoms. Moreover, this study investigated whether maladaptive interpersonal stress responses serve as one mechanism underlying this link. It was hypothesized that deficits in emotional clarity would interfere with the formulation of adaptive responses to interpersonal stress, thereby heightening vulnerability to depressive symptoms during middle childhood.

Emotional Clarity

Emotional clarity is defined as the ability to identify, understand, and distinguish one's own emotional experiences (Gohm & Clore, 2000, 2002; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Emotional clarity is a critical dimension of one's affective experience, in that the awareness and understanding of one's internal emotional state allows for the development of more sophisticated emotion-related skills, such as understanding the

emotional displays of others and the refinement of emotion regulation capabilities (for a review, see Saarni, 2007). Indeed, high levels of emotional clarity are linked to a broad range of indices of positive adjustment in adults (e.g., adaptive attributional styles, positive well-being; Gohm & Clore, 2002). It is theorized that the ability to clearly perceive and discriminate among emotions allows individuals to allocate fewer resources toward understanding emotional experiences and, in turn, to direct more resources toward the formulation of goal-oriented cognition and behavior (Gohm & Clore, 2000, 2002). In contrast, individuals who have difficulty understanding their emotions are thought to spend greater time and effort managing their emotional experiences and, consequently, to have greater difficulty directing resources toward goal-oriented cognition and behavior (Gohm & Clore, 2000, 2002). Deficits in emotional clarity may therefore shape responses to stressful situations that demand the regulation of negative affect and the mobilization of internal resources to formulate coping responses. Consistent with this notion, deficits in emotional clarity are associated with higher levels of maladaptive stress responses and lower levels of adaptive stress responses in adults (Gohm & Clore, 2000; Gohm, Corser, & Dalsky, 2005).

Emotional Competence and Responses to Stress

Although emotional clarity has not been examined during childhood, theory and research suggest that children's emotional capabilities are associated with how they respond to stress. For instance, it has been proposed that children's understanding of emotion-evoking experiences influences the appraisal process and, consequently, coping responses (Stein & Hernandez, 2007; Stein & Levine, 1999). In addition, emotional understanding is a fundamental component of emotional competence, which has been theorized to contribute to children's adaptive resilience following the experience of stress (for a review, see Saarni, 2000). Indeed, research shows that children with low self-awareness of their emotional experiences identified fewer constructive coping strategies for dealing with stress (i.e., the experience of negative affect) (Shields et al., 2001). Similarly, young adolescents with poor emotional awareness reported a diminished ability to cope with negative emotions (Sim & Zeman, 2005, 2006). Finally, children who were taught emotional understanding skills subsequently displayed heightened interpersonal competence which involves, in part, the ability to respond adaptively to interpersonal stress (Denham & Burton, 1999).

Building on this theory and preliminary research, the present study examined whether emotional clarity, a dimension of emotional understanding, is linked to children's stress responses. A recent conceptualization of youths' stress responses distinguishes between goal-directed, voluntary coping responses and involuntary, dysregulated reactions. Voluntary coping responses are defined as effortful, controlled, and conscious efforts to modify stressors or to adapt oneself to stressors, whereas involuntary responses are defined as automatic, uncontrolled reactions (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Responses are further distinguished as involving engagement (i.e., orientation toward stressors) versus disengagement (i.e., orientation away from stressors) (Compas et al., 2001). This conceptual framework classifies stress responses into four higher-order categories: engagement coping (i.e., primary and secondary control coping; e.g., problem solving, cognitive restructuring, positive thinking), disengagement coping (e.g., denial, avoidance, wishful thinking), involuntary engagement (e.g., rumination, intrusive thoughts, impulsive action), and involuntary disengagement (e.g., escape, inaction, cognitive interference) (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). This conceptualization of youths' stress responses has advantages over other frameworks in that it incorporates a broad and comprehensive range of stress responses that reflect contemporary theoretical conceptualizations of responses to stress.

Children with high levels of emotional clarity are likely more adept at processing their emotions and, consequently, engaging in effortful attempts to resolve stressors. Conversely,

children with deficits in emotional clarity might become overly taxed by or preoccupied with their emotions, and either purposefully disengage or respond to stress in involuntary and dysregulated ways. Accordingly, the first goal of this study was to examine the hypothesis that deficits in emotional clarity would be associated with maladaptive stress responses in the form of *lower* levels of engagement coping and *higher* levels of disengagement coping, involuntary engagement, and involuntary disengagement. In particular, this study focused on stress responses within an interpersonal context. Emotional clarity might be particularly relevant to the manner in which children respond to interpersonal stress because these types of stressors are likely to elicit negative affective reactions that require the appropriate identification and management of emotions in order to be resolved.

In turn, the inability to resolve interpersonal problems might be linked to depressive symptoms. Whereas the effective management of interpersonal stress might facilitate the development of enduring and supportive relationships, which have been found to protect children against depressive symptoms (Ezzell, Swenson, & Brondino, 2000; Schrepferman, Eby, Snyder, & Stropes, 2006), ineffective interpersonal stress responses might undermine relationships, thereby heightening risk for depression (Rudolph, Hammen, & Burge, 1997). Consistent with this notion, children who respond in an unconstructive fashion to interpersonal stress (i.e., peer victimization) display higher levels of internalizing symptoms (Kochenderfer-Ladd, 2004). Further, children who display heightened passive and avoidant coping responses to *in vivo* peer rejection (Reijntjes, Stegge, Terwogt, Kamphuis, & Telch, 2006) and children who endorse fewer adaptive coping responses to hypothetical peer rejection (Reijntjes, Stegge, & Terwogt, 2006) experience higher levels of depressive symptoms.

More broadly, drawing from Compas and colleagues' (2001) conceptualization of stress responses, lower levels of engagement, active, or approach-oriented coping and higher levels of disengagement coping, involuntary engagement, and involuntary disengagement in response to interpersonal stress are associated with depressive symptoms in youth (Compas et al. 2001; Connor-Smith & Compas, 2002; Connor-Smith et al., 2000; Flynn & Rudolph, 2007, 2010; Wadsworth & Berger, 2006; Wadsworth & Compas, 2002; Wadsworth, Rieckmann, Benson, & Compas, 2004; for reviews, see Clarke, 2006; Compas et al., 2001). Thus, the second goal of this study was to examine whether maladaptive interpersonal stress responses (i.e., *lower* levels of engagement coping and *higher* levels of disengagement coping and involuntary responses) serve as a mechanism linking deficits in emotional clarity to childhood depressive symptoms.

Method

Participants

This study involved the first two waves of the first cohort of the University of Illinois Social Health and Relationship Experiences (SHARE) Project. Children were recruited by distributing consent forms to the caregivers of second graders in seven schools in the Midwest. Consent forms were returned from 447 (90%) of eligible children; exclusion criteria included the presence of severe learning or developmental disabilities that would preclude completion of the questionnaires. Parental written consent for child participation was obtained from 373 (83%) of the returned consent forms. Participants and nonparticipants at Wave 1 (W_1) did not significantly differ in terms of sex, $\chi^2(1) = .25$, *ns*, age, $t(492) = .18$, *ns*, ethnicity (white vs. minority), $\chi^2(1) = .00$, *ns*, or school lunch status (full pay vs. subsidized), $\chi^2(1) = .16$, *ns*. Of the children who participated at W_1, 345 (93%) participated at Wave 2 (W_2); because the emotional clarity questionnaire was only available at W_2, these children comprised the present sample. Participants ranged in age from 8 to 10

years ($M = 8.91$, $SD = .33$; 188 girls, 157 boys; 75% White, 15% African American, 10% other). Participants and nonparticipants at W_2 did not significantly differ in sex, $\chi^2(1) = .01$, *ns*, age, $t(371) = 1.84$, *ns*, or school lunch status, $\chi^2(1) = 2.43$, ns. However, participants and nonparticipants at W_2 did significantly differ in ethnicity, $\chi^2(1) = 8.54$, $p < .01$, such that nonparticipants were more likely to be minority than were participants.

Procedure

Data were collected in the winter of two consecutive school years. Trained graduate students, undergraduate students, and laboratory personnel attained verbal assent from participants, and then administered questionnaires to small groups (e.g., 3 – 4) of children during two classroom visits. Emotional clarity and interpersonal stress responses were assessed at W_2; depressive symptoms were assessed at W_1 and W_2. Children received small gifts on each occasion for their participation, and each classroom received a monetary honorarium.

Measures

Emotional clarity—At W_2, children completed the 7-item Emotional Clarity Questionnaire (ECQ), an adaptation of a measure of emotional clarity commonly used in adults (the Trait Meta-Mood Scale; Salovey et al., 1995). Items were selected based on examination of the highest item-scale loadings during original measure development (Salovey et al., 1995). The original items were modified as necessary (e.g., simplifying wording or vocabulary, eliminating double negatives) to make them more understandable to children. For instance, the original item "I usually know my feelings about a matter" was shortened to "I usually know how I am feeling," and the original negatively keyed item "I can't make sense out of my feelings" was modified to "I often have a hard time understanding how I feel." Interviewers began administration of the questionnaire with the following introduction: "Does everyone know what feelings are? Like when you are feeling happy or sad? Those are examples of different feelings you might have. This is a list of ways that kids experience their feelings. We are interested in how you experience your feelings." Then, interviewers read each item aloud and children provided written responses by checking a box on a 5-point scale (Not at All, A Little Bit, Some, Pretty Much, or Very Much). Positively keyed items were reverse scored and a mean score was computed; higher scores reflect greater deficits in emotional clarity. Adequate internal consistency was found ($\alpha = .74$).

Convergent validity for the ECQ was examined using a subsample of children ($N = 61$) who attended a session conducted in the laboratory. During this visit, children completed the ECQ along with two behavioral tasks involving the processing of facial expressions. The first task was the Chimeric Faces Task (CFT; Levy, Heller, Banich, & Burton, 1983), a free-vision assessment of hemispheric specialization during the processing of facial expressions, a predominantly right hemisphere function. Reduced right hemisphere preference on the CFT is presumed to reflect impairments in the identification and processing of emotional information (Berenbaum & Prince, 1994; Lane, Kivley, Du Bois, Shamasundara, & Schwartz, 1995). As expected, deficits in self-reported emotional clarity were significantly correlated with a reduced right hemisphere preference on the CFT ($r(59) = .35$, $p < .01$).

The second task was the Diagnostic Assessment of Nonverbal Accuracy Faces (DANVA2; Nowicki & Carton, 1993). The DANVA2 is a computer task that presents 24 faces displaying four types of emotions (happy, sad, angry, and fearful) at two levels of intensity (high and low). Children are presented with a facial expression and are prompted to indicate the displayed emotion by pressing a button on the computer screen. Scores are computed by calculating the number of errors made in affective facial recognition, with higher scores

reflecting more mistakes. As expected, deficits in self-reported emotional clarity were correlated with the number of mistakes made on the high intensity displays of affective facial recognition ($r(59) = .27$, $p < .05$). Taken together, these findings suggest that the emotional clarity questionnaire maps onto children's "online" identification and processing of emotional information presented via facial expressions. The significant, but moderate, correlations between the ECQ and these behavioral tasks is consistent with the notion that understanding one's own emotional experiences and identifying emotional information presented via facial expressions are overlapping but distinct emotion-related capabilities.

Discriminant validity for the ECQ was examined by correlating children's scores with teacher-reported academic performance. As reflected in the low correlation ($r = −.02$, *ns*), the emotional clarity index did not reflect children's general knowledge or intellectual capacity.

Responses to interpersonal stress—Responses to interpersonal stress were assessed at W_2 using a modified version (Rudolph, Abaied, Flynn, Sugimura, & Agoston, 2010) of the Responses to Stress Questionnaire (RSQ; Connor-Smith et al., 2000), a measure designed to assess youths' effortful, volitional coping and involuntary, dysregulated responses to stress. The RSQ has two primary advantages over other measures of coping in youth. First, it avoids confounding coping strategies with symptoms of psychological distress, a methodological issue that has plagued previous research examining associations between children's stress responses and socioemotional adjustment. Second, it best captures contemporary theoretical frameworks of responses to stress by incorporating of a broad and comprehensive range of effortful and involuntary stress responses, thereby providing a more refined approach to understanding youths' stress responses than other coping measures.

Three steps were taken to revise the measure for this study. First, the probe was modified to assess children's responses to a common type of interpersonal stress (i.e., peer harassment, or other kids being mean to them); this prompt was repeated after every five items. Second, check box and write-in options contained within individual items were removed to simplify the response format. Third, due to procedural time constraints and to make the measure appropriate for administration with young children, the original measure was shortened such that the revised version contained all of the original subscales with one fewer item per subscale (for a similar abbreviation of the RSQ, see Sontag, Graber, Brooks-Gunn, & Warren, 2008). Specifically, the original measure consists of 19 subscales representing 4 larger factors (i.e., effortful engagement and disengagement coping; involuntary engagement and disengagement responses). Each original subscale consists of three items, yielding 57 items on the original measure. For the purposes of this study, item-total correlations were examined by subscale in two samples of youth (samples described in Connor-Smith et al., 2000; Flynn & Rudolph, 2007), and the two highest loading items per subscale were retained in the revised measure. When items loaded in different patterns across the two samples, items were selected based on their relevance to understanding responses to the type of stress assessed in this study or from the sample closer in age to the current participants. Thus, the revised measure dropped one item from each of the 19 subscales (representing the 4 larger factors), with the exception of the effortful disengagement subscale[1], yielding a 41-item measure

Interviewers read each item aloud and children provided written responses by checking a box on a 4-point scale (Not at All, A Little Bit, Pretty Much, or Very Much). The administration manual included definitions of words in the original items that children

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[1]In W_1 of the study, the effortful disengagement scale had only moderate internal consistency; thus, at W_2 the three previously omitted items were included to boost the reliability of the subscale.

potentially might not understand; interviewers provided children with alternative wordings of items when questions arose, albeit rarely, during the administration of the measure. To adjust for response bias and base-rate variation in the endorsement of responses to stress, proportion scores were computed (the total score for each subscale divided by the total score on the RSQ; see also, Connor-Smith et al., 2000; Sontag et al., 2008). This ipsative scaling procedure eliminates response bias by removing variance that is unrelated to the content of the items, and allows for the comparison of subscale scores *relative* to one another (Chan, 2003; Cunningham, Cunningham, & Green, 1977). Accordingly, general profiles of stress responses can be examined across participants, in which higher proportion scores reflect more predominant stress responses within each individual's response repertoire.

In the revised measure, engagement coping (i.e., primary and secondary control coping) consisted of 14 items reflecting active, approach-oriented responses directed toward stressors or adapting oneself to stressors, such as problem solving or positive thinking. Sample items include, respectively, "I do something to try to fix the problem or take action to change things." and "I tell myself that everything will be all right." Disengagement coping consisted of 9 items reflecting purposeful efforts to orient oneself away from stressors or one's response to stressors, such as avoidance or denial. Sample items include, respectively, "I try not to think about it, to forget all about it." and "I try to believe it never happened." Involuntary engagement consisted of 10 items reflecting dysregulated involvement with stressors, such as rumination or physiological arousal. Sample items include, respectively, "I can't stop thinking about what I did or said." and "I feel sick to my stomach or get headaches." Involuntary disengagement consisted of 8 items reflecting involuntary avoidance of stressors, such as escape or emotional numbing. Sample items include, respectively, "I just have to get away, I can't stop myself." and "I don't feel like myself, it's like I'm far away from everything." Confirmatory factor analyses have validated the factor structure of the original measure in youth samples (Connor-Smith et al., 2000; Wadsworth et al., 2004). Further, internal consistency (Connor-Smith et al., 2000; Flynn & Rudolph, 2007, 2010; Sontag et al., 2008; Wadsworth & Compas, 2002; Wadsworth, Raviv, Compas, & Connor-Smith, 2005; Wadsworth et al., 2004), stability (Connor-Smith et al., 2000), and convergent and discriminant validity (Compas et al., 2006; Connor-Smith et al., 2000; Jaser et al., 2007; Jaser et al., 2005; Wadsworth et al., 2004) have been established for the original measure across multiple samples of youth. Internal consistency, stability, and construct validity (i.e., expected associations with children's social goals) also have been established for the revised version (Rudolph et al., 2010). Adequate internal consistency was found for each subscale in the present sample (engagement coping: $\alpha = .84$; disengagement coping: $\alpha = .78$; involuntary engagement: $\alpha = .81$; involuntary disengagement: $\alpha = .73$).

Depressive symptoms—Depressive symptoms were assessed at both waves using the short form of the Mood and Feelings Questionnaire (SMFQ; Angold, Costello, Messer, & Pickles, 1995), a 13-item scale of recent (i.e., in the previous two weeks) depressive symptoms. Items were selected based on their successful discrimination between clinically depressed and nondepressed children (Angold et al., 1995). This scale includes more depression-specific items than other measures of children's depressive symptoms, and the items were written so as to be understandable to children (Kuo, Stoep, & Stewart, 2005). The original SMFQ was modified to provide a response format similar to the other questionnaires in the administration packet. Specifically, the response options were changed from a 3-point (Never, Sometimes, Always) to a 4-point (Not at All, A Little Bit, Pretty Much, Very Much) scale (see also, Liang & Eley, 2005). Sample items include "I felt I was a bad person." and "I didn't enjoy anything at all." A mean score was calculated such that higher scores reflect higher levels of depressive symptoms. The SMFQ has strong internal consistency in both clinical (Angold et al., 1995) and community (Sharp, Goodyer, & Croudace, 2006) samples; convergent and discriminant validity have been established

(Angold et al., 1995). In the present sample, strong internal consistency was found at both waves (αs > .87).

Results

Intercorrelations Among the Measures

Table 1 displays the descriptive information and intercorrelations among the variables at W_2 (i.e., the wave at which emotional clarity and stress responses were assessed). Deficits in emotional clarity, engagement coping, involuntary engagement, involuntary disengagement, and depressive symptoms were significantly intercorrelated in the anticipated directions. Disengagement coping was not significantly associated with deficits in emotional clarity or depressive symptoms and was excluded from subsequent analyses.

Structural Equation Modeling Analyses

Structural equation modeling using AMOS 7.0 (Arbuckle, 2006) was conducted to test the proposed mediational model. All analyses adjusted for W_1 depressive symptoms. In each analysis, deficits in emotional clarity were represented by a manifest variable. For the purposes of data reduction and to capture variance unique to each stress response subscale, a latent variable representing maladaptive stress responses was created reflecting lower levels of engagement coping, and higher levels of involuntary engagement and disengagement. Finally, to reduce the skew of the depressive symptom scores (Hau & Marsh, 2004; Nasser & Wisenbaker, 2003), the 13 items from the measure were parceled into two packages of four items and one package of five items (Kishton & Widaman, 1994; Little, Cunningham, Shahar, & Widaman, 1999). Accordingly, depressive symptoms were represented by a latent variable with three indicator variables at both waves.

Following the recommendations set forth by Baron and Kenny (1986), three criteria must be met to establish mediation. First, the independent variable (i.e., deficits in emotional clarity) must be associated with the mediator (i.e., maladaptive stress responses). Second, the mediator must be associated with the dependent variable (i.e., depressive symptoms) after including the independent variable in the model. Finally, the association between the independent variable and the dependent variable should be reduced to nonsignificance after including the mediator in the model.

To examine mediation, a model was created that included the path from W_2 deficits in emotional clarity to W_2 depressive symptoms, the path from W_2 deficits in emotional clarity to W_2 maladaptive stress responses, the path from W_2 maladaptive stress responses to W_2 depressive symptoms, and the stability path from W_1 to W_2 depressive symptoms (see Figure 1). Results revealed that this model provided an adequate fit to the data, $\chi^2(29) = 94.62$, $p < .01$, $\chi^2/df = 3.26$, CFI = .97, IFI = .97, RMSEA = .08. Examination of the standardized path coefficients revealed a significant path between W_2 deficits in emotional clarity and W_2 maladaptive stress responses, and a significant path between W_2 maladaptive stress responses and W_2 depressive symptoms. In addition, the total effect of W_2 deficits in emotional clarity on W_2 depressive symptoms was significantly attenuated ($t(343) = 4.60$, $p < .01$; Clogg, Petkova, & Haritou, 1995) and reduced to nonsignificance when W_2 maladaptive stress responses were included in the model.

As further evidence of mediation, the model including the direct effect between W_2 deficits in emotional clarity and W_2 depressive symptoms did not provide a significantly better fit than the model without the direct effect, $\Delta\chi^2(1) = 2.21$, ns. Additionally, the indirect effect of W_2 deficits in emotional clarity on W_2 depressive symptoms was significant (IE = .14, $Z = 4.23$, $p < .001$; Sobel 1982, 1986). Finally, the effect proportion (indirect effect/total effect; Shrout & Bolger, 2002) indicated that 88% of the total effect of W_2 deficits in

emotional clarity on W_2 depressive symptoms was accounted for by W_2 maladaptive stress responses. Taken together, these indicators suggest that W_2 maladaptive stress responses mediated the association between W_2 deficits in emotional clarity and W_2 depressive symptoms, adjusting for W_1 depressive symptoms.

Discussion

The guiding premise of this research was that deficits in emotional clarity predispose children to enact maladaptive interpersonal stress responses, which are linked to depressive symptoms. Specifically, it was hypothesized that children with deficits in emotional clarity might become more preoccupied with, or overwhelmed by, their emotional experiences, thereby disrupting the allocation of resources toward goal-directed cognition and behavior and increasing the likelihood of enacting maladaptive interpersonal stress responses. In turn, it was proposed that difficulty resolving interpersonal stressors might undermine interpersonal relationships and heighten children's vulnerability to depressive symptoms. Consistent with these hypotheses, findings revealed significant associations among deficits in emotional clarity, maladaptive interpersonal stress responses (i.e., less engagement coping and more involuntary engagement and disengagement), and depressive symptoms, adjusting for prior depressive symptoms. Moreover, maladaptive interpersonal stress responses mediated the association between deficits in emotional clarity and depressive symptoms.

The fact that deficits in emotional clarity were associated with maladaptive interpersonal stress responses is consistent with the idea that such deficits interfere with children's ability to direct resources toward resolving or adapting themselves to interpersonal problems. Rather, difficulty understanding emotional experiences was associated with uncontrolled, dysregulated stress responses oriented both toward (e.g., rumination) and away from (e.g., escape) stressors. Contrary to hypotheses, deficits in emotional clarity were not associated with disengagement coping. Perhaps this is because children do not need to have a sophisticated degree of emotional understanding to deny (e.g., try to believe it never happened), avoid (e.g., try to stay away from), or wishfully think about (e.g., wish that things would be different) stressors. One goal of future research will be to elucidate precisely how emotional understanding is linked to children's stress responses. For instance, children who understand their emotional experiences may be better able to identify their intra- and interpersonal needs, such as security and companionship; knowledge of personal needs might allow children to effectively redirect themselves following stressful experiences and focus on efforts to restore stability.

Developmental Considerations

This research contributes to both developmental perspectives on emotional understanding and clinical perspectives on depressive symptoms, providing insight into the interplay between emotional and interpersonal processes during middle childhood. This study was novel in its assessment of children's emotional clarity, one component of emotional understanding. Whereas prior research has focused on aspects of emotional understanding such as the ability to identify and distinguish external emotional displays (e.g., affect labeling or recognition) as well as the capacity to recognize the causes and consequences of both internal and external emotional states, emotional clarity reflects the awareness and comprehension of one's *own* affective experiences. The ability to identify and distinguish intrapersonal emotional experiences is particularly critical when children encounter the negative affect and arousal that is elicited by interpersonal stress, and allows for the formulation of adaptive coping responses. In turn, the effective management of interpersonal difficulties likely amplifies children's sense of self-efficacy, fosters the development and maintenance of healthy relationships, and in so doing, protects children against depressive symptoms.

More broadly, emotional understanding is a critical skill that permits the development and mastery of more sophisticated emotional capacities, such as emotional self-regulation and emotional competence (for reviews, see Denham 1998, 2007; Halberstadt, Denham, & Dunsmore, 2001; Saarni, 1991). Middle childhood represents an important developmental period in which to examine children's emotional capabilities due to their rapid maturation during this time. Specifically, children learn to differentiate their emotions, display and communicate emotions, and identify and monitor emotional cues (Denham, 1998, 2007; Halberstadt et al., 2001; Saarni, 1991). This maturation, in combination with simultaneous cognitive and social developments, such as the ability to control behaviors (Kochanska & Akzan, 2006) and the ability to respond to other children's emotional displays in a social context (Denham, 1998, 2007; Halberstadt et al., 2001; Saarni, 1991), has implications for psychological and interpersonal adjustment throughout childhood and adolescence.

In terms of psychological adjustment, this study revealed that deficits in emotional clarity are associated with depressive symptoms at an early stage in childhood. Given that the experience of prior depression is a robust predictor of subsequent depression (e.g., Harrington, Fudge, Rutter, Pickles, & Hill, 1990), children with deficits in emotional clarity may be more likely to encounter a risk-laden developmental trajectory. In terms of interpersonal adjustment, difficulty identifying and interpreting emotions has the potential to interfere with the formation of strong interpersonal skills and, thus, to hinder the development of nurturing and supportive relationships. Indeed, the present findings indicated that deficits in emotional clarity are linked to maladaptive interpersonal stress responses, one manifestation of interpersonal dysfunction. Because this study examined responses to a fairly broad peer stressor, one goal for future research will be to investigate whether emotional clarity is differentially associated with responses to specific types of peer harassment (e.g., physical vs. relational aggression). A complementary aim will be to examine whether a similar pattern of findings holds across other types of interpersonal (e.g., parent-child, sibling) and noninterpersonal (e.g., academic) stress responses.

An additional developmental consideration involves potential determinants of children's emotional clarity. Building on research demonstrating the influence of parental socialization on children's emotional functioning (Denham & Kochanoff, 2002; Eisenberg, Cumberland, & Spinrad, 1998), it will be beneficial to investigate aspects of the parenting environment that contribute to children's emotional clarity. For instance, caregivers with deficits in emotional clarity might be less adept at teaching children to identify and differentiate their emotional experiences or at coaching children to relieve emotional distress, thereby impeding the development of children's emotional understanding. Also, children's temperamental characteristics may contribute to their emerging emotional clarity. For example, children who are easily soothed might not become fraught by emotional distress or develop the inclination to avoid emotional experiences. Consequently, easily soothed children might be more apt to cultivate a sophisticated repertoire of emotional understanding.

Limitations of the Present Research

This study was the first to investigate children's emotional clarity, taking an important first step toward understanding the implications of deficits in emotional clarity for children's development. However, several important limitations of this study warrant mention. First, this study used a subjective assessment of children's *perceived* emotional clarity. Assessing children's emotional clarity using distinct methods, such as third-party informants, detailed interviews, or performance-based assessments will contribute to future research on the correlates and consequences of children's emotional understanding. Relatedly, the study relied on a single method (questionnaires) and a single informant (children), which may have inflated associations among the variables due to shared method variance. Yet, it is

important to note that the constructs of emotional clarity and responses to stress are quite complex and do not have an obvious valence; thus, it is unlikely, for example, that a negative response bias (e.g., children with depressive symptoms perceiving themselves in a more negative light) accounted for the associations among the variables.

Second, although analyses adjusted for prior depressive symptoms, the key mediational pathway was examined concurrently, which precludes a clear interpretation of temporal effects. However, supplemental analyses examining alternative directions of effect (e.g., deficits in emotional clarity as a mediator between depressive symptoms and maladaptive stress responses, or between maladaptive stress responses and depressive symptoms) did not yield significant mediational results, suggesting that the proposed model best represents the structural associations among these variables.[2]

Finally, participants represented a community sample in which overall levels of depressive symptoms were quite low, which is consistent with findings from other research involving community samples of youth (e.g., Angold et al., 1995; Hjemal, Aune, Reinfjell, Stiles, & Friborg, 2007). Of the present sample, 27% scored at or above the standard depression screening cutoff score (i.e., greater than or equal to 8; Angold et al., 1995), suggesting that a meaningful number of children reported high scores on the measure. Yet, it remains unclear whether these results would generalize to clinically depressed children. A primary goal of future research will be to replicate these preliminary findings using a prospective longitudinal design with multiple informants of each construct in both clinical and community samples.

Clinical Implications and Future Directions

Findings from this research have direct implications for prevention and intervention endeavors. Efforts can be directed toward identifying children with deficits in emotional clarity and implementing services that teach children to identify and label differentiated emotional experiences, as well as to recognize the causes and consequences of emotions, such as the PATHS curriculum (Promoting Alternative THinking Strategies; e.g., Greenberg, Kusche, Cook, & Quamma, 1995) and the Emotions Course (e.g., Izard, Trentacosta, King, & Mostow, 2004). It is plausible that such services ultimately prevent children from developing depression-inducing emotion regulation tendencies, such as rumination and brooding. In a related manner, services can be designed to identify children who respond maladaptively to stress, and to teach strategies to augment the formulation of goal-directed responses. As with all treatment endeavors, however, care must be taken to monitor for potential adverse consequences of efforts to increase children's emotional clarity and goal-directed stress responses. For instance, teaching children living in abusive environments to identify emotional experiences might amplify their experience of negative affect, and the beneficial consequences of enacting goal-directed stress responses might vary as a function of attributes of environmental circumstances, such as the controllability of stressors.

In sum, this study advances our understanding of the manner in which children's emotional and interpersonal functioning jointly contribute to depressive symptoms. Given that this study was novel in its assessment of children's self-reported emotional clarity, one goal of

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[2]An additional analysis was conducted to examine whether the association between W_2 deficits in emotional clarity and W_2 depressive symptoms remained significant after adjusting for the contribution of W_1 depressive symptoms to both variables. The path from W_1 depressive symptoms to W_2 deficits in emotional clarity was positive and significant, yet the path from W_2 deficits in emotional clarity to W_2 depressive symptoms was only slightly reduced and remained significant. These findings support the notion that deficits in emotional clarity are uniquely associated with depressive symptoms beyond the contribution of prior depressive symptoms to both variables.

future research will be to replicate and extend these findings by examining whether similar effects hold across later childhood and adolescence using prospective longitudinal research.

References

Abramson LY, Metalsky GI, Alloy LB. Hopelessness depression: A theory-based subtype of depression. Psychological Review. 1989; 96:358–372.

Angold A, Costello E, Messer SC, Pickles A. Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. International Journal of Methods in Psychiatric Research. 1995; 5:237–249.

Arbuckle, JL. AMOS 7.0 [Computer Software]. Chicago: Small Waters Corp; 2006.

Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology. 1986; 51:1173–1182. [PubMed: 3806354]

Beck, AT. Depression: Clinical, experimental, and theoretical aspects. New York, NY: Harper & Row; 1967.

Berenbaum H, Prince JD. Alexithymia and the interpretation of emotion-relevant information. Cognition and Emotion. 1994; 8:231–244.

Brown, GW.; Harris, TO. Depression. In: Brown, GW.; Harris, TO., editors. Life events and illness. London, UK: Guilford; 1989. p. 49-93.

Clarke AT. Coping with interpersonal stress and psychosocial health among children and adolescents: A meta-analysis. Journal of Youth and Adolescence. 2006; 35:11–24.

Chan W. Analyzing ipsative data in psychological research. Behaviormetrika. 2003; 30:99–121.

Clogg CC, Petkova E, Haritou A. Statistical methods for comparing regression coefficients between models. American Journal of Sociology. 1995; 100:1261–1293.

Compas BE, Boyer MC, Stanger C, Colletti RB, Thomsen AH, Dufton LM, et al. Latent variable analysis of coping, anxiety/depression, and somatic symptoms in adolescents with chronic pain. Journal of Consulting and Clinical Psychology. 2006; 74:1132–1142. [PubMed: 17154742]

Compas BE, Connor-Smith JK, Saltzman H, Thomsen AH, Wadsworth ME. Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. Psychological Bulletin. 2001; 127:87–127. [PubMed: 11271757]

Connor-Smith JK, Compas BE. Vulnerability to social stress: Coping as a mediator or moderator of sociotropy and symptoms of anxiety and depression. Cognitive Therapy and Research. 2002; 26:39–55.

Connor-Smith JK, Compas BE, Wadsworth ME, Thomsen AH, Saltzman H. Responses to stress in adolescence: Measurement of coping and involuntary stress responses. Journal of Consulting and Clinical Psychology. 2000; 68:976–992. [PubMed: 11142550]

Coyne JC. Depression and the response of others. Journal of Abnormal Psychology. 1976; 85:186–193. [PubMed: 1254779]

Cunningham WH, Cunningham ICM, Green RT. The ipsative process to reduce response set bias. Public Opinion Quarterly. 1977; 41:379–384.

Denham, SA. Emotional development in young children. New York, NY: Guilford; 1998.

Denham SA. How children negotiate the worlds of emotions and social relationships. Cognitie Creier Comportament. 2007; 11:1–48.

Denham SA, Kochanoff AT. Parental contributions to preschoolers' understanding of emotion. Marriage & Family Review. 2002; 34:311–343.

Eisenberg N, Cumberland A, Spinrad TL. Parental socialization of emotion. Psychological Inquiry. 1998; 9:241–273. [PubMed: 16865170]

Ezzell CE, Swensen CC, Brondino MJ. The relationship of social support to physically abused children's adjustment. Child Abuse & Neglect. 2000; 24:641–651. [PubMed: 10819096]

Fields L, Pintz RJ. Coping and adjustment during childhood and adolescence. Clinical Psychology Review. 1997; 17:937–976. [PubMed: 9439874]

Flynn M, Rudolph KD. Perceptual asymmetry and youth's responses to stress: Understanding vulnerability to depression. Cognition and Emotion. 2007; 21:773–788.

Flynn M, Rudolph KD. Neuropsychological and interpersonal antecedents of youth depression. Cognition and Emotion. 2010; 24:94–110.

Gohm CL, Clore GL. Individual differences in emotional experience: Mapping available scales to processes. Personality and Social Psychology Bulletin. 2000; 26:679–697.

Gohm CL, Clore GL. Four latent traits of emotional experience and their involvement in well-being, coping, and attributional style. Cognition and Emotion. 2002; 16:495–518.

Gohm CL, Corser GC, Dalsky DJ. Emotional intelligence under stress: Useful, unnecessary, or irrelevant? Personality and Individual Differences. 2005; 39:1017–1028.

Greenberg MT, Kusche CA, Cook ET, Quamma JP. Promoting emotional competence in school-aged children: The effects of the PATHS curriculum. Development and Psychopathology. 1995; 7:117–136.

Halberstadt AG, Denham SA, Dunsmore JC. Affective social competence. Social Development. 2001; 10:79–119.

Harrington R, Fudge H, Rutter M, Pickles A, Hill J. Adult outcomes of childhood and adolescent depression: Psychiatric status. Archives of General Psychiatry. 1990; 47:465–473. [PubMed: 2184797]

Hau KT, Marsh HW. The use of item parcels in structural equation modeling: Non-normal data and small sample sizes. British Journal of Mathematical and Statistical Psychology. 2004; 57:327–351. [PubMed: 15511312]

Hjemal O, Aune T, Reinfjell T, Stiles TC, Friborg O. Resilience as a predictor of depressive symptoms: A correlational study with young adolescents. Clinical Child Psychology and Psychiatry. 2007; 12:91–104. [PubMed: 17375811]

Izard CE, Trentacosta CJ, King KA, Mostow AJ. An emotion-based prevention program for Head Start children. Early Education and Development. 2004; 15:407–422.

Jaser SS, Champion JE, Reeslund KL, Keller G, Merchant MJ, Benson MA, et al. Cross-situational coping with peer and family stressors in adolescent offspring of depressed parents. Journal of Adolescence. 2007; 30:917–932. [PubMed: 17241658]

Jaser SS, Langrock AM, Keller G, Merchant MJ, Benson MA, Reeslund K, et al. Coping with the stress of parental depression II: Adolescent and parent reports of coping and adjustment. Journal of Clinical Child and Adolescent Psychology. 2005; 34:193–205. [PubMed: 15677293]

Kishton JM, Widaman KF. Unidimensional versus domain representative parceling of questionnaire items: An empirical example. Educational and Psychological Measurement. 1994; 54:757–765.

Kochanska G, Akzan N. Children's conscience and self-regulation. Journal of Personality. 2006; 74:1587–1617. [PubMed: 17083659]

Kochenderfer-Ladd B. Peer victimization: The role of emotions in adaptive and maladaptive coping. Social Development. 2004; 13:329–349.

Kuo ES, Stoep AV, Stewart DG. Using the Short Mood and Feelings Questionnaire to detect depression in detained adolescents. Assessment. 2005; 12:374–383. [PubMed: 16244118]

Lane RD, Kivley LS, Du Bois MA, Shamasundara P, Schwartz GE. Levels of emotional awareness and the degree of right hemispheric dominance in the perception of facial emotion. Neuropsychologia. 1995; 33:525–538. [PubMed: 7637851]

Levy J, Heller W, Banich MT, Burton LA. Asymmetries of perception in free viewing of chimeric faces. Brain and Cognition. 1983; 2:409–419.

Liang H, Eley TC. A monozygotic twin differences study of nonshared environmental influence on adolescent depressive symptoms. Child Development. 2005; 76:1247–1260. [PubMed: 16274438]

Little TD, Cunningham WA, Shahar G, Widaman KF. To parcel or not to parcel: Exploring the question, weighing the merits. Structural Equation Modeling. 1999; 9:151–173.

Monroe SM, Harkness KL. Life stress, the "kindling" hypothesis, and the recurrence of depression: Considerations from a life stress perspective. Psychological Review. 2005; 112:417–445. [PubMed: 15783292]

Nasser F, Wisenbaker J. A Monte Carlo study investigating the impact of item parceling on measures of fit in confirmatory factor analysis. Educational and Psychological Measurement. 2003; 63:729–757.

Nowicki S, Carton J. The measurement of emotional intensity from facial expressions. Journal of Social Psychology. 1993; 133:749–750. [PubMed: 8283869]

Reijntjes A, Stegge H, Terwogt MM. Children's coping with peer rejection: The role of depressive symptoms, social competence, and gender. Infant and Child Development. 2006; 15:89–107.

Reijntjes A, Stegge H, Terwogt MM, Kamphius JH, Telch MJ. Children's coping with *in vivo* peer rejection: An experimental investigation. Journal of Abnormal Child Psychology. 2006; 34:877–889. [PubMed: 17111114]

Rudolph KD, Abaied JL, Flynn M, Sugimura N, Agoston M. Developing relationships, being cool, and not looking like a loser: Social goal orientation predicts children's responses to peer aggression. Revise and resubmit. Child Development. 2010

Rudolph KD, Dennig MD, Weisz JR. Determinants and consequences of children's coping in the medical setting: Conceptualization, review, and critique. Psychological Bulletin. 1995; 118:328–357. [PubMed: 7501740]

Rudolph KD, Hammen C, Burge D. Interpersonal functioning and depressive symptoms in childhood: Addressing the issues of specificity and comorbidity. Journal of Abnormal Child Psychology. 1994; 22:355–371. [PubMed: 8064038]

Rudolph KD, Hammen C, Burge D. A cognitive-interpersonal approach to depressive symptoms in preadolescent children. Journal of Abnormal Child Psychology. 1997; 25:33–45. [PubMed: 9093898]

Saarni, C. Children's understanding of strategic control of emotional expression in social transactions. In: Harris, PL., editor. Children's understanding of emotion. New York, NY: Cambridge University Press; 1991. p. 181-208.

Saarni, C. Emotional competence: A developmental perspective. In: Bar-On, R.; Parker, JDA., editors. The handbook of emotional intelligence: Theory, development, assessment, and application at home, school, and in the workplace. San Francisco, CA: Jossey-Bass; 2000. p. 68-91.

Saarni, C. The development of emotional competence: Pathways for helping children to become emotionally intelligent. In: Bar-On, R.; Maree, JG.; Elias, MJ., editors. Educating people to be emotionally intelligent. Westport, CT: Praeger Publishers/Greenwood Publishing Group; 2007. p. 15-35.

Salovey, P.; Mayer, JD.; Goldman, SL.; Turvey, C.; Palfai, TP. Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In: Pennebaker, J., editor. Emotion, disclosure, & health. Washington, DC: APA; 1995. p. 125-154.

Schrepferman LM, Eby J, Snyder J, Stropes J. Early affiliation and social engagement with peers: Prospective risk and protective factors for childhood depressive behaviors. Journal of Emotional and Behavioral Disorders. 2006; 14:50–61.

Sharp C, Goodyer IM, Croudace TJ. The Short Mood and Feelings Questionnaire (SMFQ): A unidimensional item response theory and categorical data factor analysis of self-report ratings from a community sample of 7-through 11-year-old children. Journal of Abnormal Child Psychology. 2006; 34:379–391. [PubMed: 16649000]

Shields A, Dickstein S, Seifer R, Giusti L, Magee KD, Spritz B. Emotional competence and early school adjustment: A study of preschoolers at risk. Early Education and Development. 2001; 12:73–96.

Shrout PE, Bolger N. Mediation in experimental and nonexperimental studies: New procedures and recommendations. Psychological Methods. 2002; 7:422–445. [PubMed: 12530702]

Sim L, Zeman J. Emotion regulation factors as mediators between body dissatisfaction and bulimic symptoms in early adolescent girls. The Journal of Early Adolescence. 2005; 25:478–496.

Sim L, Zeman J. The contribution of emotion regulation to body dissatisfaction and disordered eating in early adolescent girls. The Journal of Early Adolescence. 2006; 35:219–228.

Sobel, ME. Asymptotic intervals for indirect effects in structural equations models. In: Leinhart, S., editor. Sociological methodology 1982. San Francisco, CA: Jossey-Bass; 1982. p. 290-312.

Sobel, ME. Some new results on indirect effects and their standard errors in covariance structure analysis. In: Tuma, N., editor. Sociological Methodology 1986. Washington, DC: American Sociological Association; 1986. p. 159-186.

Sontag L, Graber JA, Brooks-Gunn J, Warren MP. Coping with social stress: Implications for psychopathology in young adolescent girls. Journal of Abnormal Child Psychology. 2008; 36:1159–1174. [PubMed: 18465219]

Stein, N.; Hernandez, MW. Assessing understanding and appraisals during emotional experience: The development and use of the Narcoder. In: Coan, JA.; Allen, JBJ., editors. Handbook of emotion elicitation and assessment. New York, NY: Oxford; 2007. p. 298-317.

Stein, N.; Levine, LJ. The early emergence of emotional understanding and appraisal: Implications for theories of development. In: Dalgleish, T.; Power, MJ., editors. Handbook of cognition and emotion. New York, NY: Wiley; 1999. p. 383-408.

Sullivan PF, Neale MC, Kendler KS. Genetic epidemiology of major depression: Review and meta-analysis. American Journal of Psychiatry. 2000; 157:1552–1562. [PubMed: 11007705]

Wadsworth ME, Berger LE. Adolescents coping with poverty-related family stress: Prospective predictors of coping and psychological symptoms. Journal of Youth and Adolescence. 2006; 35:57–70.

Wadsworth ME, Compas BE. Coping with family conflict and economic strain: The adolescent perspective. Journal of Research on Adolescence. 2002; 12:243–274.

Wadsworth ME, Raviv T, Compas BE, Connor-Smith JK. Parent and adolescent responses to poverty-related stress: Tests of mediated and moderated coping models. Journal of Child Family Studies. 2005; 14:283–298.

Wadsworth ME, Rieckmann T, Benson MA, Compas BE. Coping and responses to stress in Navajo adolescents: Psychometric properties of the Responses to Stress Questionnaire. Journal of Community Psychology. 2004; 32:391–411.
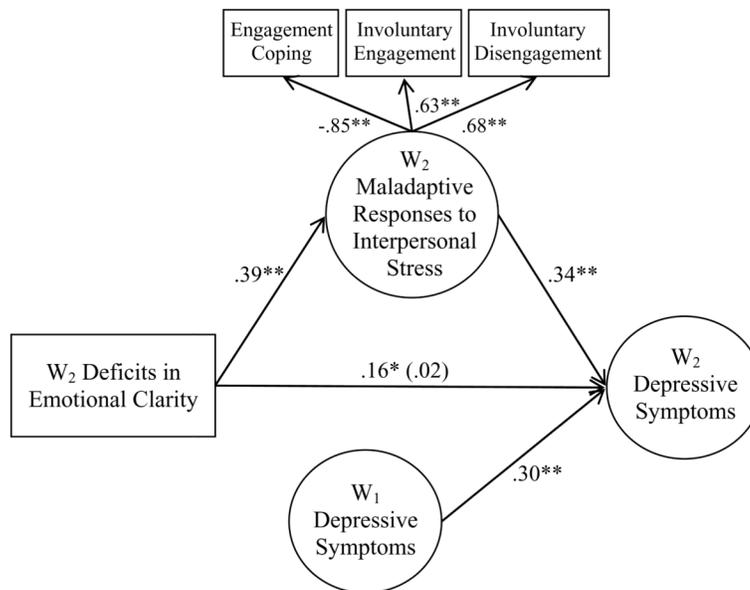
Figure 1.
Structural equation model of the associations among W_2 deficits in emotional clarity,
maladaptive interpersonal stress responses, and depressive symptoms, adjusting for W_1
depressive symptoms. Coefficients without parentheses indicate total effects; coefficient in
parentheses indicates the direct effect. **p < .01.

Table 1

Descriptive Statistics and Intercorrelations Among the W$_2$ Measures

Measure	M (SD)	Range	1	2	3	4	5	6
1. Deficits in Emotional Clarity	2.44 (.81)	1.00 – 5.00	--					
2. Engagement Coping	2.50 (.60)	1.00 – 4.00	−.39**	--				
3. Disengagement Coping	2.36 (.65)	1.00 – 4.00	.02	−.12*	--			
4. Involuntary Engagement	2.08 (.64)	1.00 – 4.00	.17**	−.69**	−.35**	--		
5. Involuntary Disengagement	1.99 (.61)	1.00 – 4.00	.42**	−.72**	−.12*	.21**	--	
6. Depressive Symptoms	1.63 (.60)	1.00 – 3.69	.20*	−.39**	−.08	.40**	.21**	--

*
p < .05.

**
p < .01.

Note. Descriptive information for the stress response subscales are based on raw scores.