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Emotional Functioning in Children and Adolescents
with Elevated Depressive Symptoms

Abstract

Difficulties with emotion and its regulation are of central importance to the aetiology and course of depression. The current study investigated these constructs in relation to childhood and adolescence by comparing the emotional functioning of 170 9- to 15-year-olds reporting high levels of depressive symptoms (HD) to a matched sample of 170 children and adolescents reporting low levels of depressive symptoms (LD). Compared to LD, HD participants reported significantly greater shame proneness, poorer functioning on emotion regulation competencies (emotional control, self-awareness and situational responsiveness), less healthy emotion regulation strategy use (less reappraisal and greater suppression), and lower levels of guilt. Empathic concern did not differ between the two groups. The findings enhance current knowledge by providing a more comprehensive profile of the emotional difficulties experienced by children and adolescents with elevated depressive symptoms.

Keywords: depression, self-conscious emotions, emotion regulation, children, adolescents

Depression has been described as “a prototypical disturbance of emotion” (Izard, Youngstrom, Fine, Mostow, & Trentacosta, 2006, p. 258). Affective symptoms of depression include loss of interest and pleasure, increased sadness, irritability and anger, and feelings of worthlessness and guilt (American Psychiatric Association (APA), 2000). As such, difficulties with emotion and its regulation are of central importance in understanding the aetiology and course of depression (Durbin & Shafir, 2008). Although a marked increase in the prevalence of depression has been observed from late childhood into adolescence (Avenevoli, Knight, Kessler, & Merikangas, 2008), research examining the relationship between emotional functioning and depression during these developmental periods has been notably sparse. To address this, the current study examined various aspects of emotional functioning (i.e., proneness to shame, guilt and empathy, emotion regulation competencies and strategy use) in children and adolescents at risk for depression.

Shame and guilt are self-conscious moral emotions. They differ from basic emotions such as sadness, happiness and fear in that they require a capacity for self-awareness (Tracy & Robins, 2004). Inconsistencies in research findings regarding the relationships between shame, guilt, and psychological adjustment have led to much debate over the nature of these emotions. Although studies have consistently reported shame to be associated with psychological problems including depression (Cheung, Gilbert, & Irons, 2004; Ferguson, Stegge, Eyre, Vollmer, & Ashbaker, 2000; Harder, Cutler, & Rockart, 1992), findings regarding guilt are varied. Some studies have reported guilt to be positively correlated with psychological problems (Ghatavi, Nicolson, MacDonald, Osher, & Levitt, 2002; Harder, et al., 1992), whilst others have reported it to be positively correlated with socially desirable traits and negatively correlated, or unrelated, to psychological problems (Baumeister, Stillwell, & Heatherton, 1994; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996). The source of these inconsistencies appears to be construct definition and

measurement.

Although the terms shame and guilt have been used interchangeably in the literature, Tangney (1996) has argued that these emotions can be reliably differentiated. According to Tangney, shame arises when an individual makes negative evaluations of the self in response to a transgression, with such responses typically evoking avoidant and withdrawal behaviours. In contrast, guilt arises when an individual perceives responsibility for a transgression and feels remorse, with such feelings typically evoking reparative behaviours. In essence, whereas shame focuses on the self (e.g., *I did that horrible thing*), guilt focuses on the behaviour (e.g., *I did that horrible thing*). When this conceptualisation is applied empirically, shame proneness in adults is associated with greater psychological maladjustment, whilst guilt proneness is associated with better psychological adjustment, or is unrelated (Pineles, Street, & Koenen, 2006; Tangney, Burggraf, & Wagner, 1995). Few studies, however, have applied this conceptualisation to the study of psychopathology in children or adolescents. Thus, it has not yet been established whether the same pattern of relationships found in adult research applies to these developmental periods.

A third construct related to self-conscious emotion which has been of interest to depression aetiology is empathy. Empathy is an affective response arising from awareness of what another person is feeling (Eisenberg, et al., 1994). The response may be similar to the other person's emotional state and may involve feelings of compassion for another's distress (Eisenberg, 2000). Empathy is closely related to guilt, in that feelings of guilt may result from the confluence of empathy and the awareness of having caused another's distress (Zahn-Waxler, 2000). Although empathy and guilt are both considered adaptive affective states that help to maintain positive interpersonal relationships, it has been argued that excessive, prolonged, or inappropriate levels of such emotions may become maladaptive (Clark & Watson, 1994). In particular, high levels of empathy are thought to place individuals at

greater risk for depression due to frequent or excessive negative affect experienced in response to others' distress (Zahn-Waxler, Cole, & Barrett, 1991). As females tend to be more empathic (Tangney & Dearing, 2002a), such an effect may partly explain why, from around the age of 13 years, females are twice as likely to experience depression compared to males (Avenevoli, et al., 2008). Consistent with this, studies have reported that higher levels of empathy predict higher levels of depressive symptoms in both adults (Schieman & Turner, 2001) and adolescent females (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). Of interest in the current study was an aspect of empathy labelled empathic concern.

Empathic concern reflects feelings of compassion and warmth for another's plight and thus is an other-focused state (Davis, 1983). For example, feeling sad when someone is hurt. It is distinct from the construct of personal distress which reflects self-focused feelings of distress prompted by another's distress (Davis, 1983). For example, become apprehensive or uncomfortable in emotional situations. Contrary to findings regarding general empathy (Bandura, et al., 2003; Schieman & Turner, 2001) and personal distress (Ghorbani, Bing, Watson, Davison, & LeBreton, 2003; Joireman, 2004; Lee, 2009; O'Connor, Berry, Weiss, & Gilbert, 2002), empathic concern has been found to be associated with lower levels of depressive symptoms (Ghorbani, et al., 2003) or unrelated to depressive symptoms and self-esteem (Joireman, 2004; Lee, 2009; O'Connor, et al., 2002). However, relationships between empathic concern and risk for depression have not previously been investigated during childhood and adolescence as previous studies have been limited to young adults.

A further aspect of emotional functioning which may confer risk for depression is the way individuals regulate their emotions. Emotion regulation (ER) is broadly defined as the processes through which emotional awareness and experience are monitored, evaluated, maintained, and modified (Thompson, 1994). Difficulties with these processes have been proposed to increase risk for depression by disrupting the down regulation of negative affect

and the up-regulation and maintenance of positive affect (Yap, Allen, & Sheeber, 2007). In line with this, previous research has reported that suboptimal ER competencies including poor emotional awareness, ineffective regulation of negative affect, and low ER self-efficacy are related to depressive symptoms in children and adolescents (Garber, Braafladt, & Weiss, 1995; Penza-Clyve & Zeman, 2002; Silk, Steinberg, & Morris, 2003; Zeman, Shipman, & Suveg, 2002). However, one limitation to this research is that little attention has been given to the social context of ER despite this being fundamental to the functionality of ER processes (Thompson, 1994). In particular, the ability to regulate emotion in a socially appropriate manner has important implications for interpersonal relationships and, in turn, overall well-being (Halberstadt, Denham, & Dunsmore, 2001). For example, the ability to reciprocate positive affective communications, to curtail negative emotional expressions such as anger, and to respond with concern for another person's plight are typical of positive social interactions. Thus, it is important that studies of the relationships between ER competencies and depression examine both internal processes of ER such as emotional awareness and modulation, and social context factors such as socially appropriate emotional responsiveness. Currently, there is scant research examining the relation of such aspects to depressive symptomatology during childhood and adolescence.

In addition to general ER competencies, the use of specific ER strategies has recently received increased attention in relation to psychological wellbeing. Cognitive reappraisal and expressive suppression are two such strategies which have been described within Gross' (1998) process model. This model poses that ER strategies are employed over a timeline of unfolding emotional response. *Cognitive reappraisal*, is employed prior to the generation of an emotional response and involves changing the way one thinks about a situation in order to change its emotional impact. In contrast, *expressive suppression* is employed subsequent to the generation of an emotional response and involves suppressing or hiding one's emotional

response from others. In general, reappraisal has been conceptualised as a healthy ER strategy as, when used effectively, it can prevent or reduce the experience of negative affect and thus has the potential to reduce subsequent negative outcomes (Gross & John, 2003). In contrast, suppression is proposed to be a less healthy ER strategy. In support of this, research has demonstrated that, despite inhibiting the *expression* of negative affect, the level of *experienced* negative affect remains unchanged or may increase (Gross & John, 2003). Further, research using the Emotion Regulation Questionnaire (Gross & John, 2003) has indicated that greater use of reappraisal and less use of suppression are associated with better psychological wellbeing in adult (e.g., Gross & John, 2003; Nezlek & Kuppens, 2008) and adolescent samples (Betts, Gullone, & Allen, 2009). Research using the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2008) has also found greater use of reappraisal to be associated with lower levels of depressive symptoms in adults (Garnefski & Kraaij, 2008) and adolescents (d'Acremont & Van der Linden, 2007), but not children (Garnefski, Rieffe, Jellesma, Meerum Terwogt, & Kraaij, 2007).

Taken together, the above research supports the characterisation of depression as a disorder of emotion with difficulties observed in relation to both the experience of specific emotional states and the regulation of emotional responses. Nonetheless, there are significant gaps and inconsistencies in extant research on emotional functioning and depression during childhood and adolescence. Therefore, the current study aimed to advance knowledge in this area by examining multiple aspects of emotional functioning in a sample of 9- to 15-year-olds reporting high levels of depressive symptoms (HD) compared to a matched sample of children and adolescents reporting low levels of depressive symptoms (LD). On the basis of theoretical proposals and relevant research, it was hypothesised that, compared to the LD sample, the HD sample would report greater proneness to feelings of shame, poorer functioning with regard to ER competencies (lower emotional control, self-awareness, and

situational responsiveness) and less healthy ER strategy use (greater use of expressive suppression and less use of cognitive reappraisal). In addition, given inconsistencies in previous studies, it was expected that the HD sample would report either lower or equal levels of guilt proneness and empathic concern compared to the LD sample. Interactions with child sex and age were explored due to reported differences in depressive symptomatology and emotional functioning related to sex and age (Avenevoli, et al., 2008; Gullone, Hughes, King, & Tonge, 2010; Zahn-Waxler, 2000).

Method

Participants

The sample comprised 340 participants (126 males, 214 females) aged 9 to 15 years ($M = 12.26$ years, $SD = 1.55$) drawn from a larger study of child and adolescent emotional development ($N = 1,392$) originally recruited from 15 primary schools and 9 secondary schools in metropolitan Melbourne, Australia. The HD group ($n = 170$; age $M = 12.28$ years, $SD = 1.53$) comprised all participants in the larger sample who scored ≥ 20 on the Children's Depression Inventory (CDI; Kovacs, 1992). This represented 12.3% of participants in the larger study. This cut-off is recommended by Kovacs (1992) for screening contexts as it corresponds to a standardised T -score between 60 and 65. In general, a T -score of ≥ 65 is considered as clinically significant. The LD group ($n = 170$; age $M = 12.24$ years, $SD = 1.57$) was randomly selected from participants in the larger study who scored $< 0.5 SD$ above the sample mean on the CDI (i.e., < 14.7) and were matched on sex, age, and ethnicity to the at-risk group (see Table 1). The cut-off for the control group was selected to maximise meaningful differentiation between groups, and equates to a maximum T -score between 53 and 58. CDI scores for the LD ($M = 6.81$, $SD = 3.78$, range 0 – 14.5) and HD ($M = 26.89$, $SD = 5.92$, range 20.3 – 46.7) groups were significantly different ($t_{(338)} = 37.28$, $p < .001$, Cohen's $d = 4.06$).

Measures

Depressive Symptomatology.

The CDI (Kovacs, 1992) is a 27-item self-report measure of depressive symptomatology. Each item comprises three statements reflecting varying severity of a given symptom (e.g., “I am sad once in a while”, “I am sad many times”, “I am sad all the time”). Items are scored from 0 to 2 and a total score is calculated by summing all items. In the current study, the suicide ideation item was omitted from the CDI as required by the institutional ethics committee and participating schools. The 26-item total score was adjusted to conform to the 27-item total score [26-item total + (26-item total /26)] (Twenge & Nolen-Hoeksema, 2002). Extensive research has demonstrated the reliability and validity of the CDI, including convergence with other self-report measures of depression and psychological well-being, and discrimination between groups of depressed and non-depressed children (see Sitarenios & Stein, 2004 for a comprehensive list of studies). In the current study, the internal consistency coefficient of the CDI was .92.

Self-Conscious Emotions.

Shame and Guilt. The Test of Self-Conscious Affect–Adolescent (TOSCA-A; Tangney, Wagner, Gavlas, & Gramzow, 1991) comprises 15 scenarios each accompanied by responses designed to capture phenomenological aspects of Shame, Guilt, Externalisation, Detachment/Unconcern, Alpha Pride, and Beta Pride. Each response is rated on a 5-point scale (i.e., 1 = *very unlike me* to 5 = *very like me*) to indicate the likelihood of responding in that manner. In the current study, only the Shame and Guilt scales were used. In line with Tangney’s (1996) definition, the Guilt scale assesses adaptive, prosocial emotional responses. The TOSCA-A has been shown to have good reliability with samples of adolescents in grades 7 to 11 (Shame $\alpha = .77$ to $.79$; Guilt $\alpha = .81$ to $.84$; Tangney & Dearing, 2002b). Validity of the TOSCA-A has been demonstrated through moderate relationships with measures of

anger, empathy and psychopathology (Tangney, et al., 1996).

As the TOSCA-A was originally designed for use with adolescents aged 12 to 20 years, some scenarios and responses were reworded for age appropriateness. Minor language changes were also made for generalized use with a non-US sample. Analysing data from the larger project sample, this revised version was found to have good reliability with children aged 9 to 11 years (Shame $\alpha = .78$; Guilt $\alpha = .79$) and adolescents aged 12 to 14 years (Shame $\alpha = .78$; Guilt $\alpha = .81$; Watson & Gullone, 2010). The Shame and Guilt scales also correlated in expected directions with measures of temperament and perceived parenting. In the current study sample, the internal consistency coefficients were .78 for the Shame scale and .85 for the Guilt scale.

Empathy. The Index of Empathy for Children and Adolescents (IECA; Bryant, 1982) is a 22-item measure of the emotional responsiveness of children and adolescents to perceived emotional experiences of others. Reported internal consistency coefficients range from .68 (fourth graders) to .79 (seventh graders), and two-week test-retest reliability coefficients range from .74 to .83 (Bryant, 1982). Convergent validity has been demonstrated by moderate to high correlations with other measures of empathy ($r = .42$ to $.77$, seventh grade). Recent factor analytic studies have reported the IECA to be multidimensional (de Wied, et al., 2007; del Barrio, Aluja, & Garcia, 2004). Seven items identified by de Wied et al. as assessing empathic sadness (e.g., “It makes me sad to see a girl who can’t find anyone to play with”) were used in the current study following verification of this factor via confirmatory factor analysis of the sample data. This scale has been shown differentiate between males and females (de Wied, et al., 2007). Items were rated on a 4-point Likert scale (1 = *strongly disagree*, 4 = *strongly agree*) and a total score calculated from the sum of all seven items. For consistency with current empathy literature, this scale construct is herein referred to as empathic concern. Higher scores indicated higher levels of empathic concern. In the current

study, the internal consistency coefficient of this scale was .82.

Emotion Regulation Competencies.

The Emotion Regulation Index for Children and Adolescents (ERICA; MacDermott, Gullone, Allen, King, & Tonge, 2010) is a self-report checklist comprising 16 items rated on 5-point Likert scale (1= *strongly disagree* to 5 = *strongly agree*). It yields three scales reflecting important ER competencies. The 7-item Emotional Control scale reflects the ability to regulate negative affect and restrain from inappropriate emotional displays (e.g., “When things don’t go my way, I get upset easily”; reverse scored). The 5-item Emotional Self-Awareness scale assesses emotional recognition and modulation (e.g., “I am quiet and shy and I don’t show my feelings” reverse scored). The 4-item Situational Responsiveness scale reflects appropriate emotional responses to others’ affective expressions (e.g., “When others are upset, I become sad or concerned for them”). Analysis of larger project sample, demonstrated that the ERICA has adequate reliability (internal consistency $\alpha = .60-.74$; four-week test-retest reliability $r = .64-.76$), and convergent validity including significant correlations with conceptually and empirically related constructs including affect, depressive symptoms and parent bonding (MacDermott, et al., 2010). In the current sample, internal consistency coefficients were .72, .68, and .69 for the Emotional Control, Emotional Self-Awareness, and Situational Responsiveness scales, respectively.

Emotion Regulation Strategies.

The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) comprises 10 items assessing the ER strategies of cognitive reappraisal (6 items) and expressive suppression (4 items). Higher scores on each scale indicate greater use of the corresponding strategy. The ERQ has been reported to have high internal consistency ($\alpha = .79$ Reappraisal, .73 Suppression) and 3-month test-retest reliability ($r = .69$ for both scales), as well as sound convergent and discriminant validity with both younger and older adults (Gross & John,

2003; John & Gross, 2004).

A revised version of this measure, the ERQ for Children and Adolescents (ERQ-CA; Gullone, 2010) was used in the current study. The major revisions to the measure were the simplification of some item content (e.g., Suppression: “I control my emotions by not expressing them” became “I control my feelings by not showing them”; Reappraisal: “When I am faced with a stressful situation, I make myself think about it in a way that helps me stay calm” became “When I am worried about something, I make myself think about it in a way that helps me feel better”), and reducing the response scale from a 7-point scale to a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). Psychometric analysis of the ERQ-CA in a sample of 842 children and adolescents aged 10-18 years, some of whom took part in the larger project, reproduced the two factors and found them to have good internal consistency ($\alpha = .82-.86$ Reappraisal, $.69-.79$ Suppression). The ERQ-CA scales correlate in the expected directions with measures of temperament, personality and parent bonding (Gullone, 2010; Jaffe, Gullone, & Hughes, 2010), and show discriminant validity in relation to adolescent depression (Betts, et al., 2009). In the current study, internal consistency coefficients were $.83$ and $.73$ for the Reappraisal and Suppression scales, respectively.

Procedure

The study was approved by the institutional ethics committee, state Department of Education, and Catholic Education Office. Explanatory statements and consent forms were distributed to children at school to be given to their parents and subsequently returned to school by the children. Of those parents who returned a consent form, 80% consented to their child's participation. All children with parental consent and who gave consent themselves completed written questionnaires at school in small groups under the supervision of two researchers and a class teacher. One researcher read the questionnaires aloud while the second assisted children with queries individually, as required. Questionnaires were

administered in counterbalanced order.

Results

Intercorrelations between the emotional functioning variables for the total sample are shown in Table 2. Shame, guilt and empathic concern were significantly positively intercorrelated but were differentially correlated with the ER variables. Shame was significantly negatively correlated with emotional control and self-awareness, positively correlated with suppression, and unrelated to situational responsiveness and reappraisal. In contrast, guilt and empathic concern were significantly positively correlated with situational responsiveness and reappraisal, and unrelated to emotional self-awareness and suppression. Guilt was also significantly positively correlated with emotional control. The ER competencies were significantly positively intercorrelated, and were positively correlated with reappraisal and negatively correlated with suppression. Reappraisal and suppression were unrelated to each other.

Table 3 shows the means and standard deviations of the emotional functioning variables for the LD and HD groups and the statistical analytic results. Three Multivariate Analyses of Variance (MANOVA) were conducted, one for each group of constructs: (i) self-conscious emotions (shame, guilt, empathic concern); (ii) ER competencies (emotional control, emotional self-awareness, situational responsiveness); and (iii) ER strategies (reappraisal, suppression). Group membership (LD v. HD), sex, and age (9-12 v. 13-15 years) were entered as predictors

Each MANOVA yielded significant multivariate effects for group membership as follows: (i) self-conscious emotions (Wilks' Lambda = .828, $F(3,309) = 21.34$, $p < .001$, Partial $\eta^2 = .17$), (ii) ER competencies (Wilks' Lambda = .616, $F(3,306) = 63.48$, $p < .001$, Partial $\eta^2 = .38$), and (iii) ER strategies (Wilks' Lambda = .837, $F(2,312) = 30.35$, $p < .001$, Partial $\eta^2 = .16$). Follow-up univariate tests indicated that compared to the LD group,

participants in the HD group reported greater shame and use of expressive suppression, and less guilt, emotional control, emotional self-awareness, situational responsiveness and use of cognitive reappraisal. Effect sizes ranged from very small (guilt partial $\eta^2 = .03$) to moderate (emotional self-awareness partial $\eta^2 = .33$). Empathic concern did not differ significantly between the two groups, and no significant interaction effects were found between group membership and age or sex in any of the analyses ($p > .05$).

Given the significant intercorrelations between variables, the unique predictive validity of the variables was examined. A logistic regression analysis was conducted with group membership as the outcome variable. The overall model was significant ($\chi^2(8) = 202.76, p < .001$) and successfully classified 83.6% of cases (83.9% LD; 83.3% HD). As can be seen in Table 4, shame, emotional control and emotional self-awareness each explained a significant amount of unique variance in the final model. The odds ratios indicated that higher levels of shame and lower levels of emotional control and emotional self-awareness were associated with being in the HD group.

Discussion

This study examined the emotional functioning of children and adolescents reporting high levels of depressive symptoms. As expected, compared to those with low levels of depressive symptoms, children and adolescents with high levels of depressive symptoms reported significantly greater levels of shame proneness, poorer ER competencies (i.e., lower emotional control, emotional self-awareness and situational responsiveness), and less healthy ER strategy use (i.e., less cognitive reappraisal and greater expressive suppression). The HD group also reported lower levels of guilt proneness than the LD group. The two groups did not differ in reported levels of empathic concern. Furthermore, shame, emotional control, and emotional self-awareness each made significant unique contributions to the prediction of group membership over and above the remaining emotional functioning variables.

With regard to self-conscious emotions, the finding that proneness to feelings of shame was greater in the HD compared to the LD group, is consistent with past research linking shame proneness to psychological problems (Cheung, et al., 2004; Ferguson, et al., 2000; Harder, et al., 1992). However, the findings that proneness to guilt was lower in the HD compared to the LD group, and that empathic concern did not differ between the two groups contrast with some previous findings and theories in which high levels of guilt and empathy have been linked to increased risk for the development of depression (e.g., Ghatavi, et al., 2002; Zahn-Waxler, et al., 1991). These findings are likely to be due the way in which these constructs were operationalised and measured in the current study. Specifically, guilt reflected appropriate feelings of responsibility for transgressions and was typically accompanied by reparative behaviours. This contrasted with shame which reflected global negative evaluations of the self accompanied by avoidance and withdrawal behaviours. The prosocial responses reflected in guilt proneness are likely to be associated with optimal mental health through the fostering of good interpersonal relationships, whilst shame responses are likely to be associated with poorer mental health outcomes due negative evaluations of self-worth and disturbances to interpersonal relationships (Tangney, 1995, 1996). Negative self-evaluations are a core feature of depression. It is therefore not surprising that a particularly strong association was found between shame and high levels of depressive symptoms, as indicated by its significant unique contribution to the prediction of group membership.

With regard to empathy, the current study assessed empathic concern, a specific aspect of the empathy construct. The current findings are consistent with previous studies with young adults which have reported no relationship between empathic concern and depressive symptoms (e.g., O'Connor, et al., 2002), although other studies have reported a negative correlation (Ghorbani, et al., 2003). Together with past research, these findings suggest that

empathic concern may not confer risk for depressive symptomatology. Nevertheless, it must be noted that personal distress, another aspect of empathy, has been reported to have positive correlations with depressive symptoms in young adults (Ghorbani, et al., 2003; Lee, 2009; O'Connor, et al., 2002). Unlike empathic concern in which feelings of compassion are focused on the other person, personal distress involves self-focused and intense feelings of distress, and thus may increase risk for depression via the internalisation of negative affect (Zahn-Waxler, et al., 1991). Future research on child and adolescent risk for depression may therefore be strengthened by examining empathic personal distress.

The findings regarding ER competencies are consistent with current theories and research linking suboptimal competencies to depressive symptoms in children and adolescents (e.g., d'Acremont & Van der Linden, 2007; Yap, et al., 2007). Specifically, the HD group reported lower levels of emotional control, emotional self-awareness and situational responsiveness. Of particular salience were emotional control and self-awareness, as indicated by significant unique contributions to the prediction of group membership. Taken together these two constructs represent important competencies related to ER, with low levels indicating poor regulation of negative affect and deficits in emotion recognition and modulation. Situational responsiveness, which reflects an inability to initiate socially appropriate emotional responses, did not make a significant unique contribution to the prediction of group membership. This suggests that although interpersonal aspects of ER may be compromised in relation to depressive symptomatology, it is the intrapersonal aspects which are of most importance.

Also of importance were the strategies used by children and adolescents to regulate emotion. Consistent with past studies (e.g., Betts, et al., 2009; d'Acremont & Van der Linden, 2007), the HD group reported less use of cognitive reappraisal and greater use of expressive suppression compared to the LD group. There are a number of possible mechanisms by

which the use of these strategies, may be related depressive symptomatology. For example, with regard to reappraisal, the tendency for depressed individuals to make negatively biased interpretations of situations (Gotlib & Krasnoperova, 1998) coupled with a failure to reappraise such interpretations might result in the maintenance or exacerbation of associated negative affect. With regard to suppression, past research has shown that this strategy may maintain, or indeed may even increase, levels of experienced negative affect despite reducing its expression (Gross & John, 2003). Gross and John proposed that suppression creates a sense of inauthenticity which contributes to psychological problems including depression.

The findings of the current study provide important information about the emotional functioning of children and adolescents with high levels of depressive symptoms. Strengths of the study include its relatively large sample size, the examination of a broad age range of participants, and the examination of multiple facets of emotional functioning. Nevertheless, there are a number of limitations which must be acknowledged. Foremost, the study examined cross-sectional relationships only, and prospective studies are needed to examine the important issue of directionality of effects. The current study was also restricted to the examination of elevated levels of self-reported depressive symptoms. Although elevated symptomatology impacts significantly on individual functioning (Gotlib, Lewinsohn, & Seeley, 1995), may indicate the presence of depressive disorder, or may be a precursor to later disorder (Cuijpers & Smit, 2004), the study of clinical samples would greatly strengthen future research. There are also a number of suggested cut-off scores for identification of clinically significant depressive symptoms on the CDI (Kovacs, 1992). Thus, results may vary somewhat depending up the population studied and cut-off utilised. In addition, there is currently somewhat limited validity data for some of the measures utilised (e.g., the revised TOSCA-A and empathic concern scale). Additional validation of these measures would further strengthen the findings regarding these constructs. Finally, all constructs investigated

in the current study were assessed via self report. Given the largely internal and subjective nature of emotional processes and the cognitive maturity of this age group, self reports are an appropriate method of assessment in this field. However, future research may benefit from the inclusion of other informants (e.g., parents, teachers, peers) and other modes of assessment (e.g., physiological, observational) and reduce shared-method variance.

There are many avenues for future research in this area, a number of which have already been highlighted. In particular, prospective multi-wave studies with both clinical and non-clinical populations will add much to the understanding of how emotional difficulties and depression interact over time. It will also be important to examine factors which may contribute concurrently to emotional difficulties and depression (e.g., temperament, parenting), as well as potential mechanisms through which emotional difficulties may impact on risk for depression (e.g., interpersonal relationships). Comparisons across different psychological conditions would also be helpful in elucidating whether the observed emotional difficulties are specific to depressive symptoms. For example, ER difficulties have been reported to be associated with childhood anxiety and externalising problems (Southam-Gerow & Kendall, 2002; Zeman, et al., 2002), indicating that ER difficulties may be related to psychopathology in general. In addition, research which includes in-depth analyses of emotion constructs will serve to provide a greater understanding of how these constructs are related and, importantly, how they are most appropriately conceptualised and assessed. For example, growing evidence for differential outcomes related to shame and guilt (Tangney & Dearing, 2002b) provides a compelling argument for the re-evaluation of excessive guilt as a criterion for the diagnosis of depression (APA, 2000).

Following a period during which emotion was relatively neglected, the past few decades have seen a burgeoning interest in the role of emotion in psychopathology (Rottenberg & Johnson, 2007). The current study further advances knowledge in this field by providing a

more comprehensive profile of the emotional difficulties experienced by children and adolescents reporting high levels of depressive symptoms. Such knowledge and continued research may ultimately lead to a new generation of prevention and intervention programs targeting childhood and adolescent depression, as well as other forms of psychopathology. Indeed, preliminary studies of emotion-focused cognitive behaviour therapy have shown promise for the effective treatment of childhood depression (Kovacs, et al., 2006) and anxiety (Suveg, Kendall, Comer, & Robin, 2006). By identifying the components of emotional functioning of most importance to psychopathology, such programs have the potential to be further tailored in order to optimise therapeutic benefits and long-term outcomes.

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Table 1

Demographic Characteristics of the Total Sample, LD Group and HD Group

	LD	HD	Total
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
<i>N</i>	170	170	340
Sex			
Male	63 (37.1)	63 (37.1)	126 (37.1)
Female	107 (62.9)	107 (62.9)	214 (62.9)
Age			
9 years	13 (7.6)	14 (8.2)	27 (7.9)
10 years	31 (18.2)	29 (17.1)	60 (17.6)
11 years	30 (17.6)	31(18.2)	61 (17.9)
12 years	38 (22.4)	37 (21.8)	75 (22.1)
13 years	29 (17.1)	29 (17.1)	58 (17.1)
14 years	27 (15.9)	28 (16.5)	55 (16.2)
15 years	2 (1.2)	2 (1.2)	4 (1.2)
Ethnicity ^a			
Australia	148 (87.1)	148 (87.1)	296 (87.1)
Oceania (excluding Australia)	5 (2.9)	5 (2.9)	10 (2.9)
South-East Asia	6 (3.5)	6 (3.5)	12 (3.5)
Southern and Central Asia	5 (2.9)	5 (2.9)	10 (2.9)
North-East Asia	3 (1.8)	3 (1.8)	6 (1.8)
Southern & Eastern Europe	1 (0.6)	1 (0.6)	2 (0.6)
North Africa & Middle East	1 (0.6)	1 (0.6)	2 (0.6)
Americas	1 (0.6)	1 (0.6)	2 (0.6)

Note. LD = Low levels of depressive symptoms, HD = High levels of depressive symptoms.

^a Based on major region of birth (Australian Bureau of Statistics, 1998).

Table 2

Intercorrelations of Emotional Functioning Variables for the Total Sample

	1.	2.	3.	4.	5.	6.	7.
Self-conscious emotions							
1. Shame							
2. Guilt	.32***						
3. Empathic concern	.20***	.46***					
ER competencies							
4. Emotional control	-.26***	.27***	.10				
5. Emotional self-awareness	-.44***	.06	-.03	.35***			
6. Situational responsiveness	.03	.59***	.55***	.32***	.22***		
ER strategies							
7. Cognitive reappraisal	-.01	.34***	.18**	.25***	.40***	.38***	
8. Expressive suppression	.37***	.02	-.01	-.16**	-.43***	-.16**	.00

*Note.** $p < .05$, ** $p < .01$, *** $p < .001$, Pearson's correlation

Table 3

Comparisons of Emotional Functioning Between LD and HD Groups

	LD	HD		Partial
	<i>M (SD)</i>	<i>M (SD)</i>	<i>F</i>	η^2
Self-conscious emotions				
Shame	38.5 (8.6)	45.9 (10.5)	30.18***	.09
Guilt	57.8 (9.3)	53.7 (12.5)	9.57**	.03
Empathic concern	18.3 (4.0)	17.2 (5.0)	2.60	.01
ER competencies				
Emotional control	22.2 (4.8)	17.6 (4.5)	47.98***	.14
Emotional self-awareness	19.7 (2.5)	15.0 (3.7)	140.41***	.33
Situational responsiveness	17.1 (2.1)	15.1 (3.4)	7.54***	.08
ER strategies				
Cognitive reappraisal	21.5 (3.6)	18.1 (5.1)	33.73***	.10
Expressive suppression	10.2 (3.0)	12.4 (3.8)	19.35***	.06

Note. LD = Low levels of depressive symptoms, HD = High levels of depressive symptoms, ER = Emotion Regulation.

** $p > .01$, *** $p > .001$

Table 4

Logistic Regression Analysis of Emotional Functioning Predicting Group Membership

Predictor	β	SE β	Wald's χ^2 (<i>df</i> = 1)	Odds Ratio (e^β)	95% CI (e^β)	
					Lower	Upper
Self-conscious emotions						
Shame	.06	.02	8.69**	1.06	1.02	1.11
Guilt	-.01	.02	0.47	0.99	0.95	1.03
Empathic concern	-.06	.04	1.82	0.95	0.87	1.03
ER competencies						
Emotional control	-.14	.04	13.41***	0.87	0.81	0.94
Emotional self-awareness	-.37	.06	3.08***	0.69	0.61	0.79
Situational responsiveness	-.13	.08	2.86	0.88	0.76	1.02
ER strategies						
Cognitive reappraisal	-.09	.05	3.71	0.92	0.84	1.00
Expressive suppression	.04	.05	0.70	1.04	0.94	1.16
<i>Constant</i>	11.76	1.97	35.44***			

Note. ** $p < .01$, *** $p < .001$.