The Role of Emotional Intelligence in Anxiety and Depression among Adolescents

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ABSTRACT - This study examined the relationship between emotional intelligence, anxiety and depression among adolescents. Two hundred and fifty high-school students were administered the Trait Meta-Mood Scale (TMMS), a self-report measure of emotional intelligence, along with measures of thought suppression, self-esteem, anxiety, and depression. It was hypothesized that emotional abilities would predict psychological adjustment above and beyond factors that have been previously associated with poor adjustment (i.e., self-esteem and thought suppression). The study revealed two main findings. First, self-reported ability to regulate mood (Emotional Repair) was positively related to self-esteem. Second, self-reported emotional intelligence was negatively related to levels of depression and anxiety. Specifically, the ability to discriminate clearly among feelings (Emotional Clarity) and the ability to self-regulate emotional states were associated with better psychological adjustment, independent of the effects of self-esteem and thought suppression. The results provide support for the hypothesis that emotional abilities are an important and unique contributor to psychological adjustment.

Given recent interest by researchers in the emotional intelligence (EI) construct, it is not surprising that various instruments have been developed that attempt to measure EI as an ability. Although recently, ability-based EI measures have been constructed in order to avoid problems associated with self-report (e.g., the MSCEIT, and its precursor, the MEIS; Mayer, Salovey, & Caruso, 2002), the use of self-report measures of EI have maintained their popularity. For example, Petrides and Furnham (2000, 2001) have proposed that self-reported EI should be termed “trait EI” or “emotional self-efficacy” and they defend their

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application with respect to ability measures (see also Austin, Saklofske, Huang, & McKenney, 2004). Specifically, these authors argue that the intrapersonal component of EI, as measured by self-report measures of EI, seems to be resistant to maximum-performance measurement (Petrides & Furnham, 2003).

One of the most widely used of these self-report measures of EI is the Trait Meta-Mood Scale (TMMS), which is a measure of what Salovey’s research group has termed Perceived Emotional Intelligence (PEI), or the knowledge individuals have about their own emotional abilities (Salovey, Woolery & Mayer, 2001; Salovey, Woolery, Stroud, & Epel, 2002). Specifically, the TMMS is a measure of beliefs concerning one’s own emotional Attention (amount of attention paid to one’s own emotional states), Clarity (understanding of one’s emotional states), and Emotional Repair (the ability to regulate one’s emotional states). Various studies (conducted across the world) have used the TMMS as a self-report measure of EI, and have documented the relationship between self-reported EI and behavior in laboratory settings as well as in ‘real world’ settings under which individuals engage in coping strategies (Ciarrochi, Chan, & Bajgar, 2001; Extremera & Fernandez-Berrocal, 2002; Goldman, Kraemer, & Salovey, 1996; Salovey, Bedell, & Detweiler, 1999; Salovey, Bedell, Detweiler, & Mayer, 2000; Salovey, Mayer, Goldman, Turvey & Palfai, 1995; Salovey et al., 2002).

The relationship between emotional intelligence (as measured by the TMMS) and psychological adjustment variables such as depression, anxiety, and overall physical and mental health has been well documented in adult samples. For instance, individuals who pay greater attention to their own emotions, individuals who score lower on emotional clarity, and individuals who report an inability to regulate their own emotional states show poor emotional adjustment on a number of measures (see Salovey, 2001 for a review; see also Fernandez-Berrocal, Salovey, Vera, Extremera, & Ramos, 2005). Conversely, individuals reporting greater emotional clarity and a greater ability to repair their own emotional states report higher levels of self-esteem, another important indicator of mental health (Salovey et al., 2002). Emotional repair is also associated with the ability to control intrusive and ruminative thoughts that often accompany stressful situations (Salovey et al., 1995).

However, recently Davis, Stankov, and Roberts (1998) have posited that self-report measures of EI are only predictors of adjustment because they are highly correlated with stable traits measured by common personality measures. For instance, they argued that the emotional repair subscale of TMMS is potentially just another measure of neuroticism and it may be the underlying cause of the relationship between self-report measures of EI and emotional adjustment. In order to explore these associations, Saklofske, Austin, and Minski (2003) showed that self-reported EI accounted for variance in happiness and well-being above and beyond personality measures.

The aim of this study was to examine the incremental validity of self-reported EI in the predicting depression and anxiety when the effects of self-esteem and
thought suppression were controlled for. We chose these variables because the literature points to strong and significant relationships between self-esteem and thought suppression with depression, and anxiety (Nolen-Hoeksema, 2000; Reinherz, Paradis, Giaconia, Stashwick, & Fitzmaurice, 2003; Rusting & Nolen-Hoeksema, 1998; Salmon, James, & Smith, 1998; Shoham & Rhourbaugh, 1997; Wegner, 1994, 1997; Wegner & Zanakos, 1994; Wenzlaff & Wegner, 2000). Moreover, Nolen-Hoeksema and her colleagues consider that ruminative coping may be the underlying cause of the relationship between personality variables and emotional disorders such as depression and anxiety (Nolen-Hoeksema, Larson, & Grayson, 1999). In addition, we chose to utilize a sample of adolescents, as few studies have documented psychological adjustment at an age in which individuals are, arguably, undergoing challenges that they have not previously faced.

We hypothesize that self-reported EI will contribute uniquely to psychological adjustment in adolescents, independent of its effects upon self-esteem and thought suppression. Specifically, we expect that (1) Clarity and Emotional Repair will be positively related to self-esteem, and (2) that Clarity and Emotional Repair will also predict differences in depression and anxiety in adolescents above and beyond self-esteem, and thought suppression.

Method

Participants and Procedure
Two hundred and fifty adolescents (120 males, 130 females; age 14 to 19; \( M = 14.7, \ SD = 0.63 \)) in a High School in Malaga, Spain completed tests voluntarily. The questionnaires were administered during a weekly course. Respondents were told that their participation would involve completing various emotional inventories investigating the emotional life of adolescents.

Measures

*Trait Meta-Mood Scale (TMMS).* To evaluate emotional intelligence, adolescents completed a Spanish version of the TMMS (Fernández-Berrocal, Extremera, & Ramos, 2004a; Salovey, et. al., 1995). The TMMS consists of forty-eight items asking participants to rate the extent to which they agreed with each item on 5-point likert-type scales ranging from *strongly disagree* (1) to *strongly agree* (5). The TMMS consists of three subscales, each measuring different aspects of intrapersonal emotional intelligence: The *Attention* scale asks individuals to report to what extent they observe and think about their own feelings and mood states (21 items, e.g., “I don’t think it’s worth paying attention to your emotions or moods”); the *Clarity* scale asks participants to evaluate their ability to discriminate among various emotional states (15 items, e.g., “I am usually very clear about my feelings”); the *Repair* scale measures participants’ abilities to regulate their own feelings (12 items, e.g., “Although I am sometimes sad, I have a mostly optimistic outlook”). Previous studies using
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this scale have shown to be internally consistent (reliability for the Spanish adaptation: Attention (Cronbach’s α = .87); Clarity (Cronbach’s α = .81) and Repair (Cronbach’s α = .76).

White Bear Suppression Inventory (WBSI). Participants also completed a Spanish version of the WBSI (Fernández-Berrocal, Extremera, & Ramos, 2004b; Wegner & Zanakos, 1994), a 15-item questionnaire that measures the general tendency to suppress thoughts. Respondents are asked to indicate, on a 5-point scale, the extent to which they agree (1 = strongly disagree; 5 = strongly agree) with statements such as: “There are things I prefer not to think about”, “I have thoughts I cannot stop”, and “There are thoughts that keep jumping into my head”. Results are scored by summing individual items, producing a total score that can range from 15 to 75. The WBSI has demonstrated high internal consistency (Cronbach’s α = .89) and test-retest reliability (r = .80; Muris, Merckelbach, & Horselenberg, 1996).

The White Bear Suppression Inventory has been utilized in various studies as an indicator of the extent to which individuals have intrusive and ruminative thoughts, and has been found to correlate positively with depressive symptoms, anxiety, and obsessive-compulsive behavior (Höpping & Jong-Mayer, 2003; Purdon, 1999).

State-Trait Anxiety Inventory (STAI). Anxiety was assessed using the Spielberger Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1994). The STAI is one of the more popular measures of general and situational anxiety currently in use. It consists of 20 statements in which respondents are asked to rate their level of agreement on 4-point scales (1 = almost never 4 = almost always). Participants are asked to indicate the extent to which they generally felt what was described in the statement (e.g., “I feel nervous and restless”). The validity of the STAI scales is reasonably strong—studies have demonstrated that the scale correlates highly with self-report, behavioral, and physiological measures of anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983).

Beck Depression Inventory (BDI). The BDI is a popular scale used for the assessment of the intensity of depressive symptoms within both psychiatric and normal populations (Beck, Rush, Shaw, & Emery, 1979). The BDI consists of 21-items that assess the intensity of depressive symptomatology, such as negative mood, pessimism, guilt, sense of failure, suicidal thoughts, fatigue, and weight loss. For each item, respondents are asked to indicate which of four statements best describes the way they were feeling during the past week. The statements are scored according to the severity of symptomatology they reflect (0 = symptom is absent; 3 = symptom is present and severe). The BDI is a reliable and well-validated measure of depressive symptoms, discriminates subtypes of depression, and differentiates depression from anxiety (e.g. Beck, Steer, & Garbin, 1988; Beck, Steer, Ball, & Ranieri, 1996). A total depression score is obtained by summing the rating of the 21 items, yielding scores that range from 0-63.
Piers-Harris Children’s Self-Concept Scale (Piers-Harris). The Piers-Harris is a self-report questionnaire consisting of 80-items presented in a yes/no format. The test is standardized and recommended for use with children of ages 8-18 (Jeske, 1985). The Piers-Harris is designed to assess general psychological health, or self-esteem (Piers, 1984). The scale contains six factors: Behavioral adjustment, Intellectual and School Status, Physical Appearance and Attributes, Anxiety, Popularity, and Happiness/Satisfaction. A total Piers-Harris score is obtained by summing the items. Studies show the Piers-Harris to have both high internal consistency (Cronbach’s α =.88) and test-retest reliability (r = 0.77) (Jeske, 1985; Piers, 1984).

General Intelligence Tests-Form 2. (TIG2). A general (“g”) intelligence score was assessed through the Spanish version of the Dominoes test derived from Anstey (1959). Studies have demonstrated that the TIG2 is internally consistent (Cronbach’s α =.90), and is correlated with the Differential Aptitude Tests at .76 (Cordero, Seisdedos, Gonzalez & De la Cruz, 1994).

Results

Table 1 presents the descriptive statistics for the variables used in this study, and Pearson correlations between the TMMS subscales and criterion scales.

Table 1
Means, Standard Deviations, Cronbach Alphas of scales and Pearson Correlations Between all Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Cronbach alphas</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
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<tbody>
<tr>
<td>Attention</td>
<td>3.61</td>
<td>.42</td>
<td>.72</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Clarity</td>
<td>3.08</td>
<td>.53</td>
<td>.73</td>
<td>.08</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repair</td>
<td>3.17</td>
<td>.52</td>
<td>.70</td>
<td>-.12</td>
<td>.40**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BDI</td>
<td>9.57</td>
<td>6.92</td>
<td>.78</td>
<td>.05</td>
<td>-.21**</td>
<td>-.43**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAI</td>
<td>16.77</td>
<td>9.48</td>
<td>.75</td>
<td>.09</td>
<td>-.42**</td>
<td>-.56**</td>
<td>.55**</td>
<td>1</td>
<td></td>
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<tr>
<td>WBSI</td>
<td>44.48</td>
<td>11.13</td>
<td>.84</td>
<td>.07</td>
<td>-.17**</td>
<td>-.20**</td>
<td>.21**</td>
<td>.27**</td>
<td>1</td>
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<tr>
<td>Total H</td>
<td>.76</td>
<td>.12</td>
<td>.84</td>
<td>-.04</td>
<td>.16*</td>
<td>.39**</td>
<td>-.36**</td>
<td>-.53**</td>
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<td>1</td>
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<td>TIG-2</td>
<td>3.02</td>
<td>.74</td>
<td>.90</td>
<td>.12</td>
<td>.02</td>
<td>.01</td>
<td>-.10</td>
<td>-.08</td>
<td>-.07</td>
<td>-.04</td>
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</table>

Note: *p < .05, **p < .001

Preliminary analyses

As expected, the psychological adjustment variables (BDI and STAI) were highly related, r (250) = .55, p < .001. The correlations among the TMMS subscales with other measures were in the expected direction. The Emotional Repair subscale was correlated positively with the Emotional Clarity subscale, but not with the Attention subscale. Both were negatively associated with
depression (BDI), anxiety (STAI), and thought suppression (WBSI), and positively correlated with Self-Esteem (Piers-Harris). Additionally, thought suppression (WBSI) was positively correlated with depression and anxiety. Finally, self-esteem was negatively correlated with depression and anxiety. Intelligence (TIG-2) was not significantly related to any of the other variables in this study, and as such was eliminated from further analyses.

**Relations between EI and Self-Esteem**

To explore whether self-reported EI predicted self-esteem, we conducted a series of stepwise multiple regression analyses using the subscales of the TMMS as independent variables, and the Piers-Harris total score and factor scores as dependent variables. The first regression model accounted for 8.5% of the variance. Emotional Repair \((R^2 = 0.08, \beta = 0.29, p < .001)\) was the only significant predictor in this model. The second regression model accounted for 7% of the variance in the Piers-Harris subscales of Intellectual and School Status. Emotional Repair was, again, the only significant predictor in this model \((R^2 = 0.07, \beta = 0.26, p < .01)\). No variables significantly predicted Physical Appearance and Attributes scores. The fourth regression model accounted for 15% of the variance in Anxiety. Once again, Emotional Repair was the significant predictor in this model \((R^2 = 0.15, \beta = 0.25, p < .01)\). None of the EI variables significantly predicted Popularity scores. The sixth model accounted for 6% of the variance in the Happiness/Satisfaction subscales. The significant predictor in this model was Emotional Repair \((R^2 = 0.06, \beta = 0.25, p < .01)\). Finally, the last model accounted for 14% of the variance in Piers-Harris Total. The significant predictor in this model was, again, Emotional Repair \((R^2 = 0.14, \beta = 0.37, p < .001)\).

**The Effects of EI, Self-Esteem, and Thought Suppression on Depression and Anxiety**

In order to examine whether self-reported EI, self-esteem, and thought suppression independently accounted for variance in depression and anxiety, two hierarchical regression analyses were conducted with the BDI and the STAI as dependent variables (as displayed in Table 2). The first regression model accounted for 29% of the variance in depression. The significant predictors in this model were the Emotional Repair subscale and self-esteem (Piers-Harris Total). Results of the regression analyses are presented in Table 2. The second regression model accounted for 54% of the variance in anxiety. The significant predictors in this model were Emotional Repair, Clarity, thought suppression, and self-esteem (Piers-Harris Total).

**Analysis of Variance**

We analyzed the EI profile of those students whose results on the BDI were extreme. Students were grouped in two categories: non-dysphoric and dysphoric.
On the basis of past recommendations and previous studies (Beck, 1967; Lyubomirsky, Tucker, Caldwell, & Berg, 1999), students with BDI scores of 12 or above were included in the dysphoric group and students scoring below 5 were included in the non-dysphoric group.

**Table 2**

*Hierarchical Regression Analysis Results Predicting Depression and Anxiety from Emotional Intelligence, Thought-suppression, and Self-Esteem*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Total R²</th>
<th>Increment in R²</th>
<th>F</th>
<th>β</th>
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<tr>
<td><strong>BDI</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Step 1</td>
<td>.16</td>
<td>.16**</td>
<td>21.94**</td>
<td></td>
</tr>
<tr>
<td>PH Total</td>
<td></td>
<td></td>
<td></td>
<td>-.40**</td>
</tr>
<tr>
<td>Step 2</td>
<td>.18</td>
<td>.02</td>
<td>12.23**</td>
<td></td>
</tr>
<tr>
<td>WBSI</td>
<td></td>
<td></td>
<td></td>
<td>.13</td>
</tr>
<tr>
<td>Step 3</td>
<td>.29</td>
<td>.11**</td>
<td>8.81**</td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td></td>
<td></td>
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<td>-.03</td>
</tr>
<tr>
<td>Clarity</td>
<td></td>
<td></td>
<td></td>
<td>.04</td>
</tr>
<tr>
<td>Repair</td>
<td></td>
<td></td>
<td></td>
<td>-.37**</td>
</tr>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td>.28</td>
<td>.28**</td>
<td>46.19**</td>
<td></td>
</tr>
<tr>
<td>PH Total</td>
<td></td>
<td></td>
<td></td>
<td>-.53**</td>
</tr>
<tr>
<td>Step 2</td>
<td>.32</td>
<td>.04*</td>
<td>27.62**</td>
<td></td>
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<tr>
<td>WBSI</td>
<td></td>
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<td>Step 3</td>
<td>.54</td>
<td>.22**</td>
<td>26.78**</td>
<td></td>
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</tr>
<tr>
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<td>-.18*</td>
</tr>
<tr>
<td>Repair</td>
<td></td>
<td></td>
<td></td>
<td>-.42**</td>
</tr>
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</table>

* p<.01. ** p<.001.

The results show adolescents in a normal state differ from those classified as dysphoric in that their scoring on Clarity (M5= 3.20 and 2.91, respectively; F(1,135) = 9.48; p < .01) and Emotional Repair (M5= 3.38 and 2.94, respectively; F(1,136) = 28.95; p<.001), and Piers-Harris Total (M5=.81 and .70, respectively; F(1,135) = 19.14; p<.001) were superior. On the other hand,
students classified as dysphoric had higher levels of thought suppression and anxiety (for STAI, $M_s = 10.83$ and 22.28, respectively; $F(1,135) = 78.22; p < .001$; and for WBSI, $M_s = 41.52$ and 47.28, respectively; $F(1,136) = 9.82; p < .001$).

**Discussion**

The results of this study revealed two main findings that provided support for the incremental validity of self-reported EI in predicting psychological adjustment. First, consistent with our hypothesis, the ability to repair emotional states predicted various aspects of self-esteem in adolescents. Second, we found that self-reported EI is related to emotional adjustment. Specifically, adolescents reporting higher ability to discriminate clearly among feelings and to regulate emotional states showed less anxiety and depression, independent of the effects of self-esteem and thought suppression. This last result is valuable because both self-esteem and thought suppression are well-documented predictors of anxiety and depression. In addition our findings confirm and extend previous results with university students to a more representative sample as adolescents (see also Williams, Fernández-Berrocal, Extremera, Ramos, & Joiner, 2004).

Although the current study was limited in its reliance on self-report measures of EI, which focus on individual’s beliefs about emotional intelligence but not tap directly into people’s emotional competencies, because people usually act in accord with their stated beliefs (Bandura, 1997), the self-report approach to measuring EI can still be a useful tool as a relatively easy way to predict psychological adjustment (Petrides & Furnham, 2003; Saklofske, Austin, & Minski, 2003). Nevertheless, further studies should include both ability measures and self-report measures of EI in order to investigate their incremental validities on psychological adjustment. Finally, given the correlational nature of this study, one cannot determine the direction of causality. On one hand, as we argued, individuals high in self-reported EI might be better able to regulate negative affect. However, it is also possible that those students who report higher levels of depression are ill-equipped to regulate affect, because negative affect may impair cognitive and emotional abilities. Despite these limitations, the results provide support for the hypothesis that self-reported EI accounts for variance in psychological adjustment not accounted for by self-esteem and thought suppression.

**Author Note**

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