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The relationship between perceived emotional intelligence and depressive symptomatology: The mediating role of perceived stress

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A B S T R A C T

This study investigated the mediating role of perceived stress in the relationship between perceived emotional intelligence and depressive symptoms in adolescence. A total of 661 high school Spanish students participated in the study. The analyses indicated that the effects of each of the perceived emotional intelligence sub-scales (namely, Attention, Clarity and Repair) on depressive symptomatology were partially mediated by perceived stress. Specifically, the mediating effect was negative for Clarity and Repair, but positive for attention. The analysis also showed that the direct effects were positive for all sub-scales. These results suggest that the promotion of stress management skills may be core in the development of prevention and treatment programs for depression in adolescents, and possibly more beneficial than the promotion of emotion regulation skills. Our findings, along with previous evidence, suggest that emotional attention, as measured in the present study, may be targeting a pathological type of attention.

Epidemiological studies conducted in Spain have estimated that the prevalence of clinical depression during adolescence ranges between 4% and 14% (Aláez, Martínez, & Rodríguez, 2000; Bragado, et al., 1995; Subira, Obiols, Mitjavila, Cuxart, & Domenech-Llavería, 1998); the second most prevalent in this country (Aláez et al., 2000). In United States, the figures are considerably different depending on the type of depression being examined. The prevalence of clinical depression is estimated in 3.1% at age 16 (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), whereas of subclinical levels of depression ranges from 20% to 50% (Kessler, Avenevoli, & Merikangas, 2001; Petersen, Compas, Brooks-Gunn, & Stemmler, 1993).

Depression during childhood and adolescence has been associated to higher risk of developing several problems, such as depressive disorder during the adulthood, suicidal behavior, functional deterioration, antisocial behavior, and academic related problems (Fergusson, Horwood, Ridder, & Beautrais, 2005; Fröjd et al., 2008; Lewinsohn, Solomon, Seeley, & Zeiss, 2000; Ritakallio et al., 2008). This has motivated clinical and researchers to devote much effort to detect and target depression at early stages (Lynch, Glod, & Fitzgerald, 2001; Najman et al., 2008).

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Part of these efforts have focused on identifying the variables that may pose a risk for the development of depression as well as those that may serve as protective factors. Among the risk factors for the development of depression, we highlight stress, whose relation with the former is widely recognized in the scientific literature. The relation between life stress and risk of depression has been demonstrated for acute (Kendler, Karkowski, & Prescott, 1998) and chronic stress (see Hammen, 2005; for a review). Moreover, life stress has been associated to the onset of depression (Kendler, Karkowski, & Prescott, 1999), as well as depressive relapse (Swindle, Cronkite, & Moos, 1989), recurrence of depression (see Burcusa & Iacono, 2007; for a review) and the intensification of depressive symptoms (Lewinsohn, Hoberman, & Rosenbaum, 1988). This relation has been reported in all developmental periods, including adolescence (see Tram & Cole, 2000; for effects in adolescence).

Regarding the protective factors, recent research is proving evidence in favor of emotional intelligence (EI) as a key concept in the study of adolescent mental health, since it is considered to be a protective factor against negative moods and, therefore, against mental illness (Mayer & Salovey, 1997). EI involves the ability to (a) accurately perceive, appraise, and express emotion; (b) access and/or generate feelings that facilitate thought; (c) understand emotion and emotional knowledge; and (d) regulate emotions in order to promote emotional and intellectual growth (Mayer & Salovey, 1997). EI as defined by Mayer and Salovey is assessed with the Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995), which includes three subscales: (1) Attention to Feelings (or Attention) assesses the ability to observe and think about own feelings and moods; (2) Emotional Clarity (or Clarity) evaluates the understanding of one's emotional states; and (3) Mood Repair (or Repair) assesses the individuals' beliefs about their ability to regulate their feelings.

Research has generally shown that EI is related to depression-proneness in adolescence (Extremera, & Fernández-Berrocal, 2006; Extremera-Pacheco, Fernández-Berrocal, Ruiz-Aranda, & Cabello, 2006; Fernández-Berrocal, Alcaide, Extremera, & Pizarro, 2006; Fernandez-Berrocal, Extremera, & Ramos, 2004; Rude & McCarthy, 2003; Salovey et al., 1995; Salovey, Stroud, Woolery, & Epel, 2002). However, while the protective role of Clarity and Repair has been consistently found, the role of Attention is not that clear. Some studies have reported a positive association with depression (Extremera, & Fernández-Berrocal, 2006; Extremera-Pacheco, et al., 2006; Fernandez-Berrocal et al., 2004), while some others have failed to find significant relation between these two variables (Fernández-Berrocal et al., 2006; Rude & McCarthy, 2003; Salovey et al., 1995; Salovey et al., 2002).

Interestingly, EI has also been related to psychological stress, both at theoretical and empirical levels. Theoretically, Bar-on and Parleer (2000) have claimed that stress management is one of the major elements of EI. Empirically, there is a burgeoning body of evidence suggesting that perceived EI is related to stress. Most of the evidence comes from studies on stress coping. Thus, research during adolescence has shown that whereas Clarity and Repair are related to the utilization of adequate stress coping strategies (Fernández, Velasco, & Campos, 2003; Saklofske, Austin, Galloway, & Davidson, 2007); Attention relates to maladjusted stress coping strategies, such as rumination thinking (Saklofske et al., 2007).

Taken together, the above findings suggest that the utilization of adaptive stress coping strategies may be the mechanism underlying the relation between EI and depressive symptoms during adolescence. No study, however, has tested this hypothesis to date. The present study aims at filling this gap by analyzing the data provided by a sample of Spanish adolescents. Following the literature, we hypothesized that EI would be negatively related to stress, which in turn would be positively related to depression.

Method

Participants

Randomized cluster sampling was used to select participants. The unit (cluster) was the school. The sampling frame was all the public schools in the target region, from which schools were selected using probability proportional to school size. That is, each school on the list was assigned a weighting equivalent to the number of students attending the school. All the selected schools agreed to participate in the study. The final sample included 661 students (324 males and 337 females) with a mean age of 14.0 years (SD = 1.42). The students were attending five different schools (four of them situated in urban areas with a population of over 2000 people, and one situated in a rural area) and 35 classrooms. Students were distributed in first, second, third and fourth year secondary school classes according to the following percentages: 21.1%, 18.5%, 31.8% and 27.7%, respectively. The educational level of their mothers was as follows: 3.8% did not receive any education; 23.8% attended primary education; 22.4% attended secondary education; 12.9% received higher education; and 37.1% did not answer or did not know this information. As for their fathers' educational level, 4.8% did not receive any education; 24.0% attended primary education; 21.3% attended secondary education; 16.0% received higher education; and 33.8% did not answer or did not know this information.

Procedure

Research was conducted in compliance with APA ethical standards. Firstly, the approval from the Provincial Board of Education and Science was obtained to perform the study. Secondly, we contacted the principal of each school to explain the aim of the research and requested their permission. Next, passive consent was obtained from parents or guardians; they received written notice from the school that their children would be participating and were invited to contact the school if they did not want their child to participate. On the day of the survey, students were invited to participate and assured that the

survey was anonymous and voluntary. With the purpose of trying to reduce the possible effect of social desirability, they were informed that the researchers were interested in knowing what they thought and felt about themselves and that there were not right or wrong answers. Students filled out the questionnaires in a classroom. At least one qualified researcher (researcher with Ph.D.) was present during the administration of the instruments to provide students with the necessary support to complete the questionnaires.

Measures

Perceived emotional intelligence

We used the Spanish version of the TMMS (Fernandez-Berrocal et al., 2004). The scale contains three sub-scales with eight items each. The subscale Attention to Feelings assesses the degree to which people believe they pay attention to their feelings, with items like "I think about my mood constantly"; the subscale Emotional Clarity assesses people's self-reported ability to perceive their emotions, with items such as "I frequently make mistakes about my feelings"; the subscale Mood Repair assesses people's belief in their capacity to interrupt negative moods and prolong positive ones, with items such as "Although I sometimes feel sad, I usually have an optimistic outlook". The factorial structure of the Spanish version has been repeatedly confirmed with adolescents samples (e.g., Extremera, & Fernández-Berrocal, 2006; Fernández et al., 2003; Fernández-Berrocal et al., 2006). Items on each subscale are rated on a 7-point Likert-type scale ranging from 1 (Do not agree at all) to 7 (Completely agree), with an intermediate rating of 4 (Pretty much agree). In our data, McDonald's omega reliability for the Attention, Clarity and Repair sub-scales were .88, .88 and .83, respectively.

Center of Epidemiological Studies Depression Scale (CESD; Radloff, 1977)

The Spanish version of the CESD (Herrero & Meneses, 2006) is a 7-item scale which evaluates the presence of depressive symptomatology over the last month, and it has been validated with an adolescent sample. This shortened version includes three items tapping dysphoric mood (e.g., "I felt sad "), and one item for each of the following domains: motivation (e.g., "I felt everything I did was an effort"), concentration (e.g., "I had trouble keeping my mind on what I was doing"), pleasure (e.g., "I enjoyed life") and poor sleep (e.g., "My sleep was restless"). It also provides a global measure of depressive mood, which was used in this study. Responses are rated on a scale of 1 (never) to 7 (always). In this study, McDonald's omega reliability for this instrument was .76.

Perceived Stress Scale (PSS4; Cohen, Kamarck, & Mermelstein, 1983)

The Spanish version of this scale, adapted by Herrero and Meneses (2006) is a 4-item scale which measures the degree to which respondents appraise situations within the last month as stressful (e.g.,"In the last month, how often have you felt that you were unable to control the important things in your life?"). Items are rated on a scale of 1 (never) to 7 (always). The validation of this Spanish version was conducted on an adolescent sample. In the present study, McDonald's omega reliability for this scale was .80.

Statistical analysis

Descriptive statistics (bivariate correlations, means and standard deviations) were first calculated. This was followed by multivariate inferential analyses using structural equation modeling (SEM). Descriptive statistics and SEM were performed with Mplus 6.1 software (Muthén & Muthén, 1998–2010). For all analyses, a level of .05 was employed for the results to be considered statistically significant.

The data were analyzed using the Robust Maximum Likelihood estimator, which does not require normal distribution of observed variables. A full-information maximum likelihood procedure served to deal with the missing data. The SEM was performed in two steps. In order to assess the psychometric properties of the instruments, measurement models were first performed through a confirmatory factor analysis. The technique of parceling, which consists on combining individual items to form a composite indicator, was used to create the constructs of interest. This technique was used to reduce the number of estimated parameters in the tested model (Landis, Beal, & Tesluk, 2000, p. 187) and hence, to increase the statistical power of the analysis. In order to assure model identification (Bollen, 1989), three parcels were created for each construct except for perceived stress which only included two parcels. Each parcel had two or three items (items employed to form parcels can be found in Table 1).

A series of structural models were then tested to examine the mediating role of perceived stress between emotional intelligence and depressive symptomatology. We performed the causal steps approach (Holmbeck, 1997), according to which, a variable must meet the following conditions to be considered a mediator: a) the fit of the overall model when the dependent variable, C, is regressed on the predictor, A, has to be good (A–C model), and the A–C path coefficient has to be significant, b) the fit of the overall model when the dependent variable, C, is regressed on the mediator, B, and the mediator is simultaneously regressed on the predictor, A, has to be good (A–B–C model), the A–B and B–C path coefficients must also be significant, c) there must not be a significant improvement in fit when comparing A–B–C model when the A–C path coefficient is unconstrained (Unconstrained A–B–C Model), respective to when this path coefficient is constrained to zero (Constrained A–B–C Model). In order to obtain a significance test of the comparison of these two structural models, a Loglikelihood Chi-Square Difference Test was performed. The satisfaction of this condition proves complete mediation. To test

Table 1
Bivariate correlations, means and standard deviations for parcels of items.

Items	Parcel		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1, 2, 3	1	Atten.1														
4, 5, 6	2	Atten.2	.75†													
7, 8	3	Atten.3	.73†	.77†												
9, 10, 11	4	Clar.1	.31†	.20†	.24†											
12, 13, 14	5	Clar.2	.48†	.35†	.41†	.66†										
15, 16	6	Clar.3	.40†	.27†	.33†	.64†	.71†									
17, 18, 19	7	Rep.1	.19†	.05	.09*	.44†	.44†	.48†								
20, 22	8	Rep.2	.32†	.20†	.25†	.41†	.47†	.46†	.70†							
21, 23, 24	9	Rep.3	.36†	.20†	.26†	.38†	.49†	.48†	.58†	.62†						
1, 2	10	Estr.1	.13†	.28†	.21†	−.35†	−.24†	−.28†	−.35†	−.25†	−.28†					
3, 4	11	Estr.2	.16†	.28†	.24†	−.26†	−.15†	−.22†	−.26†	−.15†	−.18†	.62†				
1, 2	12	Depr.1	.28†	.41†	.38†	−.15†	−.04	−.11**	−.17†	−.05	−.07	.58†	.61†			
3, 4	13	Depr.2	.33†	.43†	.38†	−.10*	−.01	−.06	−.18†	−.05	−.09*	.56†	.57†	.76†		
5, 6, 7	14	Depr.3	.21†	.33†	.25†	−.26†	−.10*	−.22†	−.29†	−.16†	−.20†	.61†	.65†	.66†	.67†	
Mean			4.58	4.05	4.16	4.57	4.52	4.57	4.64	4.67	4.97	3.20	3.32	3.02	2.87	2.70
SD			1.30	1.25	1.46	1.21	1.07	1.20	1.29	1.23	1.00	1.30	1.29	1.57	1.44	1.41

Note: SD = Standard deviation; *$p < .05$; **$p < .01$; †$p < .001$.

for partial mediation, an additional condition was added. This condition, condition d, was employed to examine the significance of the indirect effect. When condition c was satisfied, indirect effect was calculated on the Constrained A–B–C Model. To perform the test of the indirect effect, its confidence intervals were calculated using the bootstrap method with 2000 samples. Throughout the whole study, the path coefficients reported were standardized values and were accompanied by their confidence intervals. Effect size magnitudes were interpreted according to guidelines offered by Cohen (Cohen, 1988).

In the present study, these four conditions were tested for each of the EI sub-scales (Attention, Clarity and Repair) while the other sub-scales were introduced in the analysis as covariates. This allowed the assessment of role played by each sub-scale in the model when the influence of the other sub-scales was statistically controlled. The introduction of the covariates had some consequences in the models. First, in the Constrained A–B–C Model, the path coefficients between the three predictors and the dependent variable were constrained to zero. Second, in the Unconstrained A–B–C Model, the path coefficient between the predictor evaluated and the dependent variable was unconstrained, whereas the path coefficients between the rest of the predictors and the dependent variable were constrained to zero.

The following goodness-of-fit indices were reported: Chi-square test of model fit (X^2), Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Standardized Root Mean Square Residual (SRMR). Although a Chi-square test of model fit was also reported, it was not used to interpret the fit of the model, since all the proposed models are rejected with large sample sizes, as is our case. A model would be considered to have a good fit when RMSEA, SRMR and CFI jointly had appropriate values. Following Browne and Cudeck (1993)'s indications, RMSEA values lower than .05, close to .08 and higher than .1 indicate good, reasonable and bad fit, respectively. Alternatively, the upper confidence interval of the RMSEA should not exceed .08 (Hu & Bentler, 1998). For the SRMR, values lower than .08 were interpreted as good fit (Hu & Bentler, 1999). Finally, for CFI a value of .90 was seen as a reasonable minimum for model acceptance (Bentler, 1990).

After the mediation analysis, we calculated the average of the total effect that the emotional intelligence sub-scales had on depressive symptomatology. With the purpose of comparing our result with the results obtained in the Spanish TMMS validation study (Fernandez-Berrocal et al., 2004), we also calculated the average total effect for that study. To make both studies comparable, the average effect was not calculated for the zero-order correlations, but for the correlation that each EI sub-scale had on depression, after controlling for the effect of the other sub-scales. The average of total effects was calculated as it is described by Borenstein, Hedges, Higgins, and Rothstein (2011, pp. 233–235), and using the software package Comprehensive Meta-Analysis (Version 2.2). In order to determine the heterogeneity between studies, the *Q*-statistic was calculated.

Finally, *R* Square for the Perceived Stress and Depressive Symptomatology in the Unconstrained A–B–C model was calculated.

Results

Descriptive statistics

Table 1 shows the descriptive statistics (bivariate correlations, means and standard deviations) for the parcels used in the study.

Measurement model

The fit indices for the measurement model were as follows: $\chi^2 = 235.08$, $df = 67$, $p < .01$; CFI = .96, RMSEA = .06, 90% CI [.05, .07], SRMR = .06. These values prove that the measurement model had an adequate fit.

Structural models for mediation analysis

Table 2 shows the results of the mediation analyses conducted on each EI sub-scale. We observe that in the three cases, all conditions were satisfied, except for condition c, since the difference test was statistically reliable, $p < .01$. This exception indicated that there was not complete mediation.

Importantly, condition d showed a significant indirect effect in all the three analyses, indicating a partial mediation. This significant indirect effect is a reflection of significant associations between EI sub-scales and Perceived Stress, and between Perceived Stress and Depressive Symptomatology in the A–B–C model. The indirect effect of Attention and Clarity was strong, $\beta = .50$ and $\beta = -.58$ respectively, and that of Repair was medium, $\beta = -.29$. A point of particular interest is that indirect effects were negative for Clarity and Repair, but positive for Attention. That is, higher Clarity and Repair values were indirectly associated with lower Depressive Symptomatology values. On the contrary, higher Attention values were associated with higher Depressive Symptomatology values. The direct relation between the EI sub-scales and Depressive Symptomatology when the mediator was introduced in the model (Unconstrained A–B–C model), yielded medium, positive and significant effects, $\beta = .21$, $\beta = .24$ and $\beta = .22$ for Attention, Clarity and Repair respectively, $ps < .01$. This means that for Clarity and Repair direct and indirect effects were of opposite signs.

The analysis of the A–C models revealed that the total effect was small, negative and non-significant for Repair, $\beta = -.14$, $p > .05$; medium, negative and significant for Clarity, $\beta = -.36$, $p < .01$; and strong, positive and significant for Attention, $\beta = .68$, $p < .01$. The average effect of all the EI sub-scales on Depressive Symptomatology was small, positive and significant, $\beta = .10$, 95% CI [.03, .18], $z = 2.67$, $p < .01$. However, the average effect observed in the Spanish validation of the TMMS (Fernandez-Berrocal et al., 2004) was small, negative and non-significant, $\beta = -.07$, 95% CI [.19, .04], $z = -1.25$, $p > .05$. Examination of the Q statistic indicated that the difference between studies was statistically significant, $Q(1) = 6.338$, $p < .05$.

Regarding the percentage of variability explained by the models, R Square for the Perceived Stress in the Unconstrained A–B–C model ranged from 44.2% to 51.2%, whereas for Depressive Symptomatology ranged from 80.0% to 86.3%. Therefore, an important amount of variability of these dependent variables was explained by the models.

Discussion

The current study investigated the mediating role of perceived stress in the relationship between EI and depressive symptoms in adolescence. The results revealed that EI was significantly correlated to depressive symptoms through the mediating role of perceived stress. This mediation was partial rather than complete. That is, EI was both directly and indirectly related to depressive symptoms. Mediational models showed to have a good explanatory capacity, since percentages of variability of depressive symptoms explained by perceived EI sub-scales ranged from 80.0% to 86.3%.

Table 2
Fit indices and path coefficients for Attention, Clarity and Repair.

Latent variable	Cond.	Model	Fit index							Path coefficient			
			χ^2	*df*	RMSEA	90% CI		CFI	SRMR	Relation	β	95% CI	
						LL	UL					LL	UL
Attention	A	A–C	186.91†	48	.07	.06	.08	.96	.06	A–C	.68†	.60	.76
	B	A–B–C	274.50†	70	.07	.06	.08	.95	.07	A–B	.69†	.60	.77
										B–C	.90†	.85	.94
	C	Cons. A–B–C	274.50†	70	.07	.06	.08	.95	.07	–	–	–	–
		Uncons. A–B–C	242.66†	69	.06	.05	.07	.96	.06	A–C	.21†	.15	.28
		Diff. test	34.04†	1	–	–	–	–	–	–	–	–	–
	D	Indirect effect test	–	–	–	–	–	–	–	–	.50†	.42	.57
Clarity	A	A–C	186.91†	48	.07	.06	.08	.96	.06	A–C	–.36†	–.52	–.21
	B	A–B–C	274.50†	70	.07	.06	.08	.95	.07	A–B	–.48†	–.64	–.33
										B–C	.90†	.85	.94
	C	Cons. A–B–C	274.50†	70	.07	.06	.08	.95	.07	–	–	–	–
		Uncons. A–B–C	238.2†4	36	.06	.05	.07	.96	.06	A–C	.24†	.15	.33
		Diff. test	42.05†	1	–	–	–	–	–	–	–	–	–
	D	Indirect effect test	–	–	–	–	–	–	–	–	–.58†	–.75	–.40
Repair	A	A–C	186.91†	48	.07	.06	.08	.96	.06	A–C	–.14	–.27	.00
	B	A–B–C	274.50†	70	.07	.06	.08	.95	.07	A–B	–.19*	–.34	–.04
										B–C	.90†	.85	.94
	C	Cons. A–B–C	274.50†	70	.07	.06	.08	.95	.07	–	–	–	–
		Uncons. A–B–C	248.28†	69	.06	.05	.07	.96	.06	A–C	.22†	.13	.31
		Diff. test	29.10†	1	–	–	–	–	–	–	–	–	–
	D	Indirect effect test	–	–	–	–	–	–	–	–	–.29†	–.46	–.12

Note: Cond. = Casual step condition; *df* = Degrees of freedom; RMSEA = Root mean square error of approximation; CFI = Comparative fit index; SRMR = Standardized root mean square residual; CI = Confidence interval; LL = Lower limit; UL = Upper limit; β = Standardized beta weight; Cons. = Constrained; Uncons. = Unconstrained; Diff. test = Loglikelihood chi-square difference test; A = Independent variable (Attention, Clarity or Repair); B = Mediator (Perceived Stress); C = Dependent variable (Depressive symptomatology); *$p < .05$; †$p < .01$.

The association between EI and perceived stress, observed in the mediation analysis, is consistent with the studies that have highlighted the role of EI in the utilization of adaptive coping strategies (Fernández et al., 2003; Saklofske et al., 2007). More importantly, our results replicate previous findings (Extremera, Durán, & Rey, 2009; see Table 1) on the association between EI sub-scales and perceived stress.

Regarding the other association observed in the mediation analysis, the association between perceived stress and depressive symptoms, this is consistent with the well-established relation between stress and depression (Burcusa & Iacono, 2007; Fernandez-Berrocal et al., 2004; Hammen, 2005; Kendler et al., 1998, 1999; Lewinsohn et al., 1988; Swindle et al. 1989; Tram & Cole, 2000).

A surprising result in our work is that the average effect that the different EI sub-scales had on depressive symptoms was significantly positive. In the Spanish TMMS validation study (Fernandez-Berrocal et al., 2004), this effect was near zero and non-significant. The *Q* statistic indicated that the results of these studies were significantly different. The fact that the sample in the Spanish TMMS validation study was formed by university students, whereas in our study by high school students, may explain this difference. Another explanation is that in our study we assessed non-clinical depressive symptomatology with the Center of Epidemiological Studies Depression Scale, whereas in the Spanish TMMS validation study, clinical depression was assessed with the Beck Depression Inventory. Thus, it might be the case that EI abilities play a different role on depression depending on the evolution stage, or the type of depression that we assess. We note, however, that although the average effects were different between studies, the zero-order correlation pattern (see Table 1) was the same in both studies. That is, while emotional attention had a positive relation with depression, Emotional Clarity and Repair showed a negative relation.

We believe that the non-negative average effect of EI on depressive symptomatology reflects a problem with the type of attention that the TMMS measures. On this regard, Watkins and Teasdale (2004) have distinguished two types of self-focused attention, with different functional effects on depression: analytical (ruminative) and experiential (mindfulness) self-focused attention. The former is maladaptive and perpetuates depression, while the latter is adaptive, promoting self-knowledge and positive interpretations of negative thoughts and feelings which typically maintain depression. It might be the case that the Attention sub-scale in the TMMS is capturing pathological attention. This hypothesis would be supported by the studies on stress coping (Saklofske et al., 2007) that have demonstrated that emotional attention is related to the use of maladjusted stress coping strategies, such as rumination. Further evidence comes from a study by Hervás and Vázquez (2006) which showed that emotional attention partially mediated between emotional complexity and rumination-proneness. The ruminative aspect of emotional attention as measured with the TMMS can be clearly appreciated in items such as "I think about my mood state constantly". On the other hand, several studies (Nolen-Hoeksema, 1991; 2003) have shown that ruminative responses to depressive symptoms are related to higher levels of depressive symptoms over time, and predict new onsets of depressive episodes and the chronicity of depressive disorders. This body of evidence provides support to the hypothesis that the deleterious influence of emotional attention on depression may result from the promotion of rumination.

Research on mindfulness, one type of healthy attention, is relevant on this regard. It has been shown that mindfulness is negatively related to both stress and depression and that the mechanism by which it may have a beneficial impact on psychological health is by reducing ruminative thinking (Chiesa & Serretti, 2009; 2011). There are recent studies that have combined the assessment of mindfulness and emotion regulation strategies to predict mental health (Coffey & Hartman, 2008; Coffey, Hartman, & Fredrickson, 2010). Consequently, future research on the role of emotion regulation and EI on psychological health and adjustment should try to overcome the problems associated with emotional attention as measured with the TMMS, may be incorporating a measure of healthy attention such as mindfulness.

An important result in our study is that the beneficial effect that EI had on depression was mediated by the reduction of perceived stress. Likewise, our results indicate that the direct effect that EI had on depression was deleterious. Taken together, these results have an important practical implication: prevention and treatment programs for depression in adolescents would benefit from devoting more efforts to training stress management strategies than to teaching EI abilities.

As it has been commented previously, our findings suggest that EI influences depression through the mediation of perceived stress. In contrast, other findings suggest it does so through the mediation of ruminative thinking-proneness (Extremera-Pacheco et al., 2006). Further research should consider examining the role of rumination and stress conjointly in order to find out if they are related to EI sequentially in a sort of four-phase process, namely EI-rumination-stress-depression; or, they are rather parallel and independent processes influencing depression in different ways.

We note that our data are cross-sectional and, consequently, it is not possible to contrast the directionality of the relation among variables because changing the directionality of the relationships between variables would produce equivalent models, that is, models whose overall fit are identical. In spite of this, cross-sectional designs are very common in the scientific literature. In such cases, strong theoretical support is critical for establishing directionality. In line with this, the directionality between variables tested in this work was based on theoretical grounding as well as empirical evidence found in previous studies. Thus, when studying the relation between EI and stress or depression, EI is commonly considered as a predictor. Stronger evidence of directionality may be obtained with longitudinal data (Martens & Haase, 2006), where the temporal ordering of variables is demonstrated. Thus, future research should address this problem by carrying out longitudinal studies.

There are other limitations of this study, affecting the generality of the results, which need to be considered. First, stress was measured through a subjective self-reported instrument. It would be interesting to assess stress through objective measures using physiological markers, such as cortisol levels. Second, we assessed non-clinical depression symptomatology and third, we only collected data from adolescents. Further research might consider expanding the present work to other

measures of the same variables, or examining the present model in other developmental stages, so as to have a bigger picture of the conditions under which EI relates to depressive symptoms, or perceived stress mediates such relation.

In conclusion, our findings support the idea that perceived stress may partially mediate the relationship between perceived EI and depressive symptoms in adolescence. While the mediating effect was negative for Clarity and Repair, it was positive for attention. In contrast to that, the direct effects were positive for all them. Unexpectedly, and partly as a consequence of the positive relation between attention and depression, the average effect of perceived EI on depressive symptoms was significantly positive. Based on the relation between emotional attention and ruminative thinking-proneness found in previous studies, it is suggested that the emotional attention may measure pathological attention and, therefore, this attesntion could be replaced with a more psychologically healthy attention, such as mindfulness.

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References

Aláez, M., Martínez-Arias, R., & Rodríguez-Sutil, C. (2000). Prevalencia de trastornos psicológicos en niños y adolescentes, su relación con la edad y género. *Psicothema, 12*(4), 525–532.

Bar-on, R., & Parleer, D. (2000). *The handbook of emotion intelligence*. San Francisco: Jossy-Bass Books.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*(2), 238.

Bollen, K. A. (1989). *Structural equation with latent variables*. New York: Wiley.

Borenstein, M., Hedges, L. V., Higgins, J. P., & Rothstein, H. R. (2011). *Introduction to meta-analysis*. John Wiley & Sons.

Bragado, C., Carrasco, I., Sánchez, M. L., Bersabe, R. M., Loriga, A., & Monsalve, T. (1995). Prevalencia de los trastornos psicopatológicos en niños y adolescentes: resultados preliminares. *Clínica y Salud, 6*, 67–82.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen, & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Beverly Hills, CA: Sage.

Burcusa, S. L., & Iacono, W. G. (2007). Risk for recurrence in depression. *Clinical Psychology Review, 27*(8), 959–985.

Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: a review and meta-analysis. *Journal of Alternative and Complementary Medicine, 15*(5), 593–600.

Chiesa, A., & Serretti, A. (2011). Mindfulness based cognitive therapy for psychiatric disorders: a systematic review and meta-analysis. *Psychiatry Research, 187*(3), 441–453.

Coffey, K. A., & Hartman, M. (2008). Mechanisms of action in the inverse relationship between mindfulness and psychological distress. *Complementary Health Practice Review, 13*(2), 79–91.

Coffey, K. A., Hartman, M., & Fredrickson, B. L. (2010). Deconstructing mindfulness and constructing mental health: understanding mindfulness and its mechanisms of action. *Mindfulness, 1*(4), 235–253.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385–396.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*(8), 837–844.

Extremera, N., Durán, A., & Rey, L. (2009). The moderating effect of trait meta-mood and perceived stress on life satisfaction. *Personality and Individual Differences, 47*(2), 116–121.

Extremera, N., & Fernández-Berrocal, P. (2006). Emotional intelligence as predictor of mental, social, and physical health in university students. *The Spanish Journal of Psychology, 9*(1), 45–51.

Extremera-Pacheco, N., Fernández-Berrocal, P., Ruiz-Aranda, D., & Cabello, R. (2006). Inteligencia Emocional, estilos de respuesta y depresión. *Ansiedad y estrés, 12*(2–3), 191–205.

Fergusson, D. M., Horwood, L. J., Ridder, E. M., & Beautrais, A. L. (2005). Subthreshold depression in adolescence and mental health outcomes in adulthood. *Archives of General Psychiatry, 62*, 66–72.

Fernández-Berrocal, P., Alcaide, R., Extremera, N., & Pizarro, D. A. (2006). The role of emotional intelligence in anxiety and depression among adolescents. *Individual Differences Research, 4*(1), 16–27.

Fernandez-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. *Psychological Reports, 94*(3), 751–755.

Fernández, I., Velasco, C., & Campos, M. (2003). Inteligencia Emocional, Alexitimia y Factores Psicosociales. *Encuentros en Psicología Social, 1*(5), 246–250.

Fröjd, S. A., Nissinen, E. S., Pelkonen, M. U. I., Marttunen, M. J., Koivisto, A. M., & Kaltiala-Heino, R. H. (2008). Depression and school performance in middle adolescent boys and girls. *Journal of Adolescence, 31*, 485–498.

Hammen, C. (2005). Stress and depression. *Annual Review of Clinical Psychology, 1*, 293–319.

Herrero, J., & Meneses, J. (2006). Short web-based versions of the perceived stress (PSS) and Center for Epidemiological Studies-Depression (CESD) Scales: a comparison to pencil and paper responses among internet users. *Computers in Human Behavior, 22*(5), 830–846.

Hervás, G., & Vázquez, C. (2006). Explorando el origen emocional de las respuestas rumiativas: El papel de la complejidad emocional y la inteligencia emocional. *Ansiedad y estrés, 12*(2–3), 279–292.

Holmbeck, G. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65*(4), 599–610.

Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: sensitivity to under parameterized model misspecification. *Psychological Methods, 3*(4), 424–453.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1–55.

Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1998). Stressful life events and major depression: risk period, long-term contextual threat and diagnostic specificity. *Journal of Nervous Mental Disease, 186*(11), 661–669.

Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal relationship between stressful life events and the onset of major depression. *American Journal of Psychiatry, 156*(6), 837–841.
Kessler, R. C., Avenevoli, S., & Merikangas, R. K. (2001). Mood disorders in children and adolescents: an epidemiological perspective. *Biological Psychiatry, 49*, 1002–1014.
Landis, R. S., Beal, D. J., & Tesluk, P. E. (2000). A comparison of approaches to forming composite measures in structural equation models. *Organizational Research Methods, 3*(2), 186–207.
Lewinsohn, P. M., Hoberman, H. M., & Rosenbaum, M. (1988). A prospective study of risk factors for unipolar depression. *Journal of Abnormal Psychology, 97*(3), 251–264.
Lewinsohn, P. M., Solomon, A., Seeley, J. R., & Zeiss, A. (2000). Clinical implications of "subthreshold" depressive symptoms. *Journal of Abnormal Psychology, 109*, 345–351.
Lynch, A., Glod, C. A., & Fitzgerald, F. (2001). Psychopharmacologic treatment of adolescent depression. *Archives of Psychiatric Nursing, 15*, 41–47.
Martens, M. P., & Haase, R. F. (2006). Advanced applications of structural equation modeling in counseling psychology research. *The Counseling Psychologist, 34*(6), 878–911.
Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey, & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp. 3–31) New York: Basic Books.
Muthén, L. K., & Muthén, B. O. (1998–2010). *Mplus User's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
Najman, J. M., Heron, M. A., Hayatbakhsh, M. R., Dingle, K., Jamrozik, K., Bor, W., et al. (2008). Screening in early childhood for risk of later mental health problems: a longitudinal study. *Journal of Psychiatric Research, 42*, 694–700.
Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*(4), 569–582.
Nolen-Hoeksema, S. (2003). The response styles theory. In C. Papageorgiou, & A. Wells (Eds.), *Depressive rumination: Nature, theory, and treatment of negative thinking in depression* (pp. 107–123). New York: Wiley.
Petersen, A. C., Compas, B. E., Brooks-Gunn, J., & Stemmler, M. (1993). Depression in adolescence. *American Psychologist, 48*, 155–168.
Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385–401.
Ritakallio, M., Koivisto, A. M., von der Pahlen, B., Pelkonen, M., Marttunen, M., & Kaltiala-Heino, R. (2008). Continuity, comorbidity and longitudinal associations between depression and antisocial behaviour in middle adolescence: a 2-year prospective follow-up study. *Journal of Adolescence, 31*(3), 355–370.
Rude, S. S., & McCarthy, C. T. (2003). Emotional functioning in depressed and depression vulnerable college students. *Cognition and Emotion, 17*(5), 799–806.
Saklofske, D. H., Austin, E. J., Galloway, J., & Davidson, K. (2007). Individual difference correlates of health-related behaviours: preliminary evidence for links between emotional intelligence and coping. *Personality and Individual Differences, 42*(3), 491–502.
Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), *Emotion, disclosure, and health* (pp. 125–151). Washington: American Psychological Association.
Salovey, P., Stroud, L. R., Woolery, A., & Epel, E. S. (2002). Perceived emotional intelligence, stress reactivity, and symptom reports: further explorations using the Trait Meta-Mood Scale. *Psychology and Health, 17*(5), 611–627.
Subira, S., Obiols, J. E., Mitjavila, M., Cuxart, F., & Domenech-Llavería, E. (1998). Prevalencia del síndrome depresivo en una muestra de adolescentes escolarizados de 13 a 15 años. *Revista de psiquiatría de la Facultad de Medicina, 25*, 86–91.
Swindle, R. W., Cronkite, R. C., & Moos, R. H. (1989). Life stressors, social resources, coping, and the 4-year course of unipolar depression. *Journal of Abnormal Psychology, 98*(4), 468–477.
Tram, J. M., & Cole, D. A. (2000). Self-perceived competence and the relation between life events and depressive symptoms in adolescence: mediator or moderator? *Journal of Abnormal Psychology, 109*(4), 753–760.
Watkins, E., & Teasdale, J. D. (2004). Adaptive and maladaptive self-focus in depression. *Journal of Affective Disorders, 82*(1), 1–8.