

Perceived emotional intelligence as predictor of psychological adjustment in adolescents: a 1-year prospective study

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Abstract In recent years, emotional intelligence has appeared as a predictor of adults' mental health, but little research has examined its involvement in adolescents' psychological adjustment. In this paper, we analyzed the predictive validity of perceived emotional intelligence (attention to feelings, emotional clarity, and emotional repair) over psychological adjustment in an adolescent sample at two temporal stages with a 1-year interval. At Time 1, the results indicated that adolescents with high scores in attention to feelings and low scores in emotional clarity and repair display poorer psychological adjustment, concretely, higher levels of anxiety, depression, and social stress and lower levels of general mental health. At Time 2, attention to feelings and emotional repair significantly predicted adolescents' psychological well-being, even when the effects of previous psychological adjustment were controlled for. The findings suggest that perceived emotional intelligence is a stable predictor of adolescent adjustment and may serve as a useful resource for preventive interventions.

Keywords Trait meta-mood · Adolescence · Psychological adjustment · Emotional intelligence · Prospective study

Introduction

An overview of Child Well-being in Rich Countries (UNICEF 2007) acknowledged severe problems of deprivation and psychological maladjustment among children and teenagers

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and that disorderly behavior has increased substantially in the last 20 years. The repercussions of psychological problems are many and varied, affecting several developmental areas and ecosystems in which the adolescent is involved, as well as compromising long-term mental health (European Pact for Mental Health and Well-being 2008). Therefore, adolescence emerges as a period of increased risk of psychological maladjustment where the physical, psychological, and social transformations lead to adolescents experiencing more frequent and more intense emotions than younger and older individuals (Larson and Lampman-Petratis 1989).

In order to implement effective preventive and health-promotion efforts, identification of psychological adjustment protector and risk factors during adolescence has become an important goal in research in the last decade, and many studies have been conducted (see Evans et al. 2005, for a review). Particularly, emotional abilities appear as predictive factors, depending on the characteristics of the individual (Durlak 1998). Some research has explored the role of emotion regulation processes in psychological maladjustment, such as depression or anxiety (Silk et al. 2003), but few studies have been conducted to explore the function of emotional abilities, working together and integrated in a theoretical model, to explain individual differences in the development of psychological well-being during adolescence. In this study, we shall focus on the ability model of emotional intelligence (Mayer and Salovey 1997) to examine the validity of perceived emotional intelligence (PEI) to predict diverse indicators of psychological adjustment in adolescence.

Emotional intelligence

Emotional intelligence (EI) appeared two decades ago as a new framework to explain human outcomes as a result of a set of abilities to process and utilize emotional information (Mayer et al. 2008). This perspective is based on the hypothesis that people who are capable of expressing and understanding emotions, assigning meaning to emotional experience, and regulating their feelings will be better adjusted, psychologically and socially (Ciarrochi et al. 2001). Among the many definitions of the concept (for a review, see Mayer et al. 2000), Mayer and Salovey's (1997) ability model, which considers EI as the capacity to process emotional information, has found widespread acceptance in the scientific community (Mayer et al. 2008). Briefly, these authors conceive EI as "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer and Salovey 1997, p. 10).

Following the model of Mayer and Salovey (1997), diverse measures have been developed to assess EI as an ability (such as the Mayer–Salovey–Caruso Emotional Intelligence Test, MSCEIT, Mayer et al. 2001), or to assess PEI. Within this group, one of the most widely used instruments has been the Trait Meta-Mood Scale, or TMMS (Salovey et al. 1995). The TMMS assesses the meta-knowledge individuals have about their own emotional abilities through three key dimensions—attention to feelings, a tendency to pay attention to and to monitor one's own mood and emotions; emotional clarity, the perceived ability to discriminate clearly among feelings; and emotional repair, the perceived ability to regulate negative moods and prolong positive ones (Fernández-Berrocal and Extremera 2008; Salovey et al. 1995). The TMMS has been extensively used in the specialized literature as a measure of PEI when dealing with basic aspects of EI from an intrapersonal perspective (Extremera et al. 2009; Fernández-Berrocal, and Extremera 2008; Salovey et al. 1995; Thompson et al. 2007).

Perceived emotional intelligence and psychological adjustment

Emotional intelligence has lately been suggested to be an important factor to predict mental and physical health (Salovey and Mayer 1990). The relation between PEI, as measured by TMMS, and emotional disorders such as depression and anxiety and overall physical and mental health has been well documented in research. For instance, in two recent meta-analytic studies about the predictive value of diverse measures of emotional intelligence, the TMMS showed a moderate effect in the prediction of mental and psychosomatic health independently of gender (Martins et al. 2010; Schutte et al. 2007). Likewise, in a review of the literature using this scale, individuals with poor psychological adjustment generally reported greater attention to their feelings, lower clarity of them, and inability to regulate their own mood states (Fernández-Berrocal and Extremera 2008), with PEI dimensions showing incremental validity over classic psychological constructs such as personality and general intelligence in several studies. Moreover, a longitudinal study (3 months) reported that attention to feelings was the most highly predictive factor of concurrent and longitudinal emotional distress, whereas clarity and mood repair predicted psychological well-being (Shulman and Hemenover 2006).

Diverse studies have explored the mechanisms that underlie the association of PEI dimensions and psychological adjustment, finding coping strategies and ruminative thinking as possible mediators in this relation. Concretely, emotional clarity and repair have been related to adequate coping both in natural and laboratory studies, with positive relations with active coping and positive rethinking (Gohm and Clore 2002) or higher emotional adjustment (Berking et al. 2008) and negative relations with passive coping or intrusive thoughts (Ramos et al. 2007; Salovey et al. 2002). However, a high level of attention to and monitoring of one's own feelings and emotions has been indicated as a precursor of ruminative thinking (Fernández-Berrocal and Extremera 2008; Thayer et al. 2003) and a component of self-focused attention (Shulman and Hemenover 2006; Swinkels and Giuliano 1995), variables which have consistently been associated with negative affect and emotional distress (Mor and Winquist 2002; Nolen-Hoeksema et al. 2008).

These results show that paying constant attention to the course of own moods and emotions is not always productive for the individual. This is particularly so when attention to feelings is not followed by sufficient capacity to understand their causes, motives, and consequences, or to repair them (Thayer et al. 2003). Thus, people who attend to their emotions excessively without adequate clarity and emotional repair could develop an emotional spiral that would generate a ruminative and self-focused process, which in turn would maintain, rather than relieve, their negative mood (Extremera and Fernández-Berrocal 2006; Fernández-Berrocal and Extremera 2008; Salguero and Iruarrizaga 2006; Salovey et al. 1995; Thayer et al. 2003).

Perceived emotional intelligence and psychological adjustment in adolescence

Despite these results, most of the research has been conducted with adult samples and not much is known about the impact of PEI on adolescents' lives. Moreover, to date, no longitudinal studies have analyzed the influence of PEI as a predictor of adolescents' psychological adjustment.

The few studies conducted with the TMMS in this population have shown significant relations with psychological adjustment, concretely, high attention to feelings has been related to higher level of depression, whereas emotional clarity and repair were associated with lower levels of depression, anxiety, and perceived stress, independently of the effects of self-esteem or thought suppression (Extremera et al. 2007; Fernández-Berrocal et al. 2006; Montañés and Latorre 2004; Williams et al. 2004). In the same line, previous studies found that adolescents diagnosed with a depressive disorder reported having lower expectations that emotional

regulation strategies would be effective in altering their negative mood than the control group (Garber et al. 1995). Attention to feelings was also able to discriminate an adolescent sex-offender group from a control group (Moriarty et al. 2001), with the group of sex offenders scoring significantly higher than the control group.

Hypotheses

Because of this lack of research on the role of PEI in the prediction of adolescents' psychological adjustment, the current study aimed to examine the associations between attention to feelings, emotional clarity, and emotional repair and diverse indicators of psychological adjustment—*anxiety, depression, social stress (as negative indicators), and general mental health status (as a positive indicator).*

In view of the prior results found in the literature using adult samples and the few with adolescents, PEI is proposed as part of the explanatory basis of psychological adjustment in human lives, with high levels of attention to emotions appearing as a risk factor, whereas emotional clarity and mood repair are considered protector factors. So, in this study, we expected that attention to feelings would be positively related to anxiety, depression, and social stress and negatively related to mental health. We hypothesized the inverse relations for emotional clarity and repair, with negative relations between them and anxiety, depression, and social stress and positive relations with general mental health.

Considering the fast developmental changes at this life stage, both concurrent and longitudinal analyses are needed to determine whether the prediction of psychological health by early PEI is stable over time. For this purpose, we examined associations at two different moments, separated by a 1-year interval, when we expected to find PEI variables as significant predictors of psychological adjustment at both times.

To the extent that youth's PEI predicts relevant present and long-term adjustment outcomes, it may be an important element for educational or clinical intervention and prevention programs.

Method

Participants and procedure

Participants in the study were 358 Spanish adolescents (50% females, 50% males) aged between 13 and 17 years ($M=14.36$, $SD=1.28$), all from secondary schools in the province of Málaga (Spain). Participants completed the measures (PEI and psychological adjustment) at the start of the academic year for the Time 1 procedure; 12 months later, at the start of the next academic year, they completed the psychological adjustment measures for the Time 2 procedure. The assessment was carried out in classrooms during the normal school schedule, with guarantees of the participants' voluntariness and anonymity and with the approval both of the school authorities and the pupils' parents.

Instruments

Perceived emotional intelligence

The TMMS (Salovey et al. 1995) was used to assess PEI. The TMMS was designed to assess, through a five-point Likert scale, how people reflect upon their moods and manage

their emotions and feelings. The scale has three factors that provide three subscale scores: Attention to feelings (monitoring feelings and emotions, e.g., “*I pay a lot of attention to how I feel*”), Emotional clarity (the ability to discriminate feelings and emotions, e.g., “*I am usually very clear about my feelings*”), and Emotional repair (the ability to regulate unpleasant moods or maintain pleasant ones, e.g., “*No matter how badly I feel, I try to think about pleasant things*”). Evidence of a three-factor structure of TMMS has been found in adults and adolescents using exploratory and confirmatory factor analyses (Palmer et al. 2003; Salguero et al. 2010; Salovey et al. 1995). Moreover, adequate internal consistency, as well as convergent and discriminant validity, has been reported for each subscale (Cronbach’s alpha for Attention to feelings=0.86, Emotional clarity=0.88, Emotional repair=0.82; Salovey et al. 1995). Lastly, the three subscales have been found to be related in different ways to important outcomes, such as mental health or social functioning criteria (see Fernández-Berrocal and Extremera 2008). We used the well-validated Spanish version of the TMMS (Fernández-Berrocal et al. 2004) which has shown adequate psychometric properties in adolescent population (Cronbach’s alpha for Attention to feelings=0.84, Emotional clarity=0.82, Emotional repair=0.81; Salguero et al. 2010).

Psychological adjustment

The Behavior Assessment System for Children (BASC; Reynolds and Kamphaus 2004), adolescent self-report form, was used to assess negative indicators of psychological adjustment through three subscales: Anxiety (15 items; feelings of nervousness, worry, and fear and tendency to be overwhelmed by problems, e.g., “*I’m afraid of a lot of things*”), Depression (15 items; feelings of unhappiness, sadness, and dejection; a belief that nothing goes right, e.g., “*Nothing ever goes right for me*”), and Social stress (13 items; feelings of stress and tension in personal relationships; a feeling of being excluded from social activities, e.g., “*Sometimes, I feel as if I am invisible*”). The BASC is an international well-validated instrument for children and adolescents’ socio-emotional evaluation (Reynolds and Kamphaus 2004); it consists of different adaptive subscales (which measure positive adjustment) and clinical subscales (which measure maladjustment) where participants rate the statements reflecting their personal thoughts and feelings as being *true* or *false*. In the current study, we used the Anxiety, Depression, and Social stress subscales, considering that elevated scores on all three subscales indicate “severe emotional disturbance characterized by depression with great tension and severe, acute distress” (Reynolds and Kamphaus 1992, p. 64). The Spanish version we used has revealed satisfactory psychometrics properties (Cronbach’s alpha for Depression=0.79, Anxiety=0.78, Social Stress=0.79; González et al. 2004).

General mental health status, as a positive indicator of psychological adjustment, was assessed using the five-item Mental Health Inventory (MHI-5; Berwick et al. 1991). The MHI-5 is used as the “mental health” domain of the Medical Outcomes Study 36-Item Short Form Health Survey (SF-36; Ware and Sherbourne 1992); it consists of five items (rated on a six-point scale) reflecting mood in the past 30 days, of which three are distress (negative affect) items (e.g., “*Have you felt very nervous?*”) and two are well-being (positive affect) items (e.g., “*Have you been happy?*”). The MHI-5 is a well-validated and reliable measure of mental health status (Ware and Gandek 1998), and it has been used as a short screening questionnaire for detecting psychopathological disorders including major depression, affective disorders generally, and anxiety disorders (Cuijpers et al. 2009; Berwick et al. 1991; Rumpf et al. 2001). In this study, we used the well-validated Spanish version of the MHI-5, which has shown good psychometric properties (Cronbach’s alpha=0.77), good

discrimination among severity groups, moderate correlations with clinical indicators, and high correlations with other health-related instruments (Alonso et al. 1995; Vilagut et al. 2005).

Results

Bivariate analyses

Means, standard deviations, and reliabilities of psychological adjustment variables and Time 1 and Time 2 correlations with Trait Meta-Mood dimensions are presented in Table 1.

As expected, the TMMS dimensions correlated significantly with psychological adjustment variables both at Time 1 and Time 2. At Time 1, significant positive correlations were found between attention to feelings and two indicators of poor psychological adjustment, anxiety ($r=0.42$) and depression ($r=0.11$). In addition, a greater tendency to attend moods and emotions was significantly and negatively associated with mental health status ($r=-0.18$). The inverse relation was observed for emotional clarity and repair, which were negatively and significantly correlated with anxiety, depression, and social stress (r ranged from -0.12 to -0.22 for emotional clarity; r ranged from -0.16 to -0.26 for emotional repair) and positively and significantly correlated with mental health ($r=0.19$ for emotional clarity; $r=0.23$ for emotional repair). A similar result was shown at Time 2; attention to feelings correlated significantly with all the psychological adjustment variables, showing positive relations with anxiety ($r=0.36$), depression ($r=0.19$), and social stress ($r=0.17$), and negative relations with mental health ($r=-0.23$). Emotional repair also correlated significantly with all adjustment variables, in this case, higher levels of emotional repair were related to lower levels of anxiety ($r=-0.12$), depression ($r=-0.26$), and social stress ($r=-0.21$), whereas a higher perceived ability to repair emotions and moods was positively related to mental health status ($r=0.23$). With

Table 1 Means, standard deviations, reliabilities, and correlations of the variables of interest

	1	2	3	4	5	6	7	8	9	10	11
Attention to feelings	–										
Emotional clarity	.26**	–									
Emotional repair	.10	.45**	–								
Anxiety T1	.42**	-.12*	-.16**	–							
Depression T1	.11*	-.22**	-.26**	.40**	–						
Social stress T1	.02	-.20**	-.25**	.43**	.69**	–					
Mental health T1	-.18**	.19**	.23**	-.36**	-.37**	-.31**	–				
Anxiety T2	.36**	-.06	-.12*	.61**	.30**	.32**	-.27**	–			
Depression T2	.19**	-.13*	-.26**	.32**	.58**	.48**	-.33**	.49**	–		
Social stress T2	.17**	-.13*	-.21**	.39**	.50**	.55**	-.34**	.54**	.74**	–	
Mental health T2	-.23**	.09	.23**	-.34**	-.26**	-.24**	.36**	-.51**	-.46**	-.44**	–
M	2.95	3.04	3.11	.48	.19	.24	4.25	.43	.18	.21	4.26
SD	.79	.79	.84	.21	.19	.21	.92	.23	.19	.21	.92
α	.84	.82	.79	.73	.80	.79	.75	.79	.80	.79	.78

* $p < .05$

** $p < .01$

respect to emotional clarity, significant negative correlations were found between this dimension and depression ($r=-0.13$) and social stress ($r=-0.13$). It is noteworthy that some correlations in both Time 1 and Time 2, although statistically significant, were low. Two examples are the correlation between attention to feelings and depression at Time 1, and the correlation between emotional repair and anxiety at Time 2 (Table 1).

Regression analyses

With the purpose of examining the predictive validity of the TMMS for psychological adjustment in adolescents, hierarchical multiple regression analyses were conducted, running independently for each adjustment variable. Because of the differences found in sex and age in the TMMS dimensions in other studies (Salguero et al. 2010), these variables were introduced as covariates. Therefore, to carry out the regression analysis at Time 1, covariates sex and age were entered at Step 1. At Step 2, the three TMMS subscales (attention to feelings, emotional clarity, and emotional repair) were entered simultaneously to determine the unique contribution of each one. To carry out the regression analysis at Time 2, covariates sex and age were also entered at Step 1, the criterion variable at Time 1 was entered at Step 2, and the TMMS subscales at Time 1 were entered at Step 3.

All cross-sectional models were significant for TMMS dimensions (Table 2). Scoring higher in anxiety, depression, and social stress were associated with a high tendency to pay attention to feelings and with a low ability to understand and repair one's own feelings (with models accounting for 12% to 26% of the total variance); on the other hand, mental health status was predicted by lower attention to feelings and higher emotional clarity and repair (accounting for 12% of the total variance). When examining the prospective validity of the TMMS dimensions, different longitudinal models were significant for attention to feelings and emotional repair (Table 3). Specifically, participants who reported a greater tendency to attend to and monitor their feelings and lower perceived ability to repair them at Time 1 were more likely to report higher levels of depression and social stress and lower levels of mental health at Time 2. However, attention to feelings was a prospective predictor of anxiety, with high-anxiety individuals at Time 2 reporting more attention at Time 1. Moreover, all these effects remained significant even after controlling for the covariates and

Table 2 Hierarchical regression analyses of perceived emotional intelligence dimensions on psychological adjustment variables at Time 1

Time 1	Anxiety			Depression			Social Stress			Mental Health		
	R^2	F	β	R^2	F	β	R^2	F	β	R^2	F	β
Step 1	.04	7.27		0.01	1.01		.03	5.03		.01	2.71	
Age			-.01			.03			-.06			-.06
Sex			.11*			-.12*			-.20**			-.04
Step 3	.26	24.73		.13	10.23		.12	9.44		.12	9.81	
Attention to feelings			.47**			.20**			.11*			-.24**
Emotional clarity			-.19**			-.19**			-.14*			.18**
Emotional repair			-.11*			-.20**			-.22**			.16**

Note: Betas from the final step of the regression.

* $p < .05$

** $p < .01$

Table 3 Hierarchical regression analyses showing amount of variance in psychological adjustment variables at Time 2 accounted for by initial levels of psychological adjustment and perceived emotional intelligence dimensions

Time 2	Anxiety			Depression			Social Stress			Mental Health		
	<i>R</i> ²	<i>F</i>	β	<i>R</i> ²	<i>F</i>	β	<i>R</i> ²	<i>F</i>	β	<i>R</i> ²	<i>F</i>	β
Step 1	.04	7.71		.005	0.84		.02	3.21		.01	2.15	
Age			-.11**			-.02			-.01			-.01
Sex			.05			-.07			-.09			-.02
Step 2	.39	76.05		.34	61.05		.31	53.02		.13	18.20	
Time 1 variable			.54**			.53**			.50**			.28**
Step 3	.40	39.97		.38	35.43		.35	31.57		.19	13.89	
Attention to feelings			.13**			.15**			.19**			-.19**
Emotional clarity			-.01			.01			-.04			.003
Emotional repair			-.04			-.15**			-.10*			.19**

Note: Betas from the final step of the regression

* $p < 0.05$

** $p < 0.01$

the criterion variables at Time 1. Contrary to our expectations, neither of the longitudinal models for clarity of feelings reached significance.

Discussion

Despite the accumulative evidence showing the importance of PEI in predicting psychological adjustment in adults, little research has examined the role of PEI in adolescents' lives, and no study has conducted a longitudinal design to analyze the effect of these dimensions on adolescents' psychological adjustment over time. In order to study this issue, the present research employed a longitudinal design with a 1-year follow-up to test the predictive validity of perceived attention to feelings, emotional clarity, and emotional repair dimensions for negative (anxiety, depression and social stress) and positive (general mental health status) indicators of psychological adjustment in a sample of adolescents.

At the cross-sectional level, the results indicate that adolescents with high scores in attention to feelings and low scores in perceived emotional clarity and repair show poorer psychological adjustment, concretely, higher levels of anxiety, depression, and social stress and lower levels of general mental health. According to previous research, these results suggest that, when in a negative mood, adolescents who pay too much attention to their own feelings—but who believe that they cannot discriminate well between them or repair this negative mood—may have difficulties engaging in a functional self-regulatory process to manage and use emotional information adequately. This combination could give rise to ruminative thinking, in which they constantly attend to and think about their feelings in order to find out how to improve their mood, thereby perpetuating, rather than alleviating, their negative mood state and preventing them from using more adequate strategies to cope with stress (Fernández-Berrocal and Extremera 2008; Gohm and Clore 2002; Lischetzke and Eid 2003).

Regarding the longitudinal level, attention to feelings and perceived emotional repair significantly predicted adolescents' psychological well-being, even when the effects of previous psychological adjustment were controlled for. Attention to feelings appears as the most important long-term PEI predictor of psychological adjustment, predicting increased levels of anxiety, depression, and social stress and decreased levels of mental health. This result is coherent with a previous longitudinal study presented with adult samples, in which attention to one's own mood was a long-term predictor of emotional distress (Shulman and Hemenover 2006) and with other studies in which a high level of attention to feelings has consistently been revealed as an important factor predicting mental health problems (Schutte et al. 2007). For example, it emerges as a predictor of the number of visits to the medical center and of reporting clinical symptoms under periods of general stress (Goldman et al. 1996) or as an explanatory factor of diverse pathologies such as eating or schizotypal disorders (Kerns 2005; Leible and Snell 2004). Focusing one's attention inward on one's mood increases the intensity and duration of negative affect and prevents the use of adequate emotional regulation strategies (Mor and Winquist 2002; Nolen-Hoeksema et al. 2008). In this sense, constant monitoring of feelings and moods may lead to a self-focused attention process, which in turn implies some degree of vigilance and higher involvement in the affective state and increases and maintains the intensity of negative states (Swinkels and Giuliano 1995). On the other hand, the act of paying attention to one's own feelings may worsen the current mood by enhancing the perception of discrepancies between the current and the ideal mood state (Larsen 2000). This negative effect of attention to feelings may be still more important at a stage like adolescence, when the hormonal, neural, and cognitive systems that underlie emotional self-regulation appear to mature (Spear 2000), and emotional experience is at the most intense level (Larson and Lampman-Petráitis 1989).

With respect to emotional repair, our results show that the perceived ability to repair negative moods or maintain positive ones significantly predicted decreased depression and social stress, and increased general mental health 1 year later. These findings are supported by previous research conducted with adults in which belief in one's ability to terminate or alleviate a negative mood state was associated with psychological well-being (Shulman and Hemenover 2006), mental and physical health (Schutte et al. 2007), higher emotional adjustment (Berking et al. 2008), or adequate coping strategies (Ramos et al. 2007; Salovey et al. 2002). In addition, the relation between emotion regulation strategies and psychological adjustment has been previously examined in adolescents. For example, previous studies found that adolescents diagnosed with a depressive disorder reported lower expectations than the control group that emotional regulation strategies would be effective in altering their negative mood (Garber et al. 1995), and depressive symptomatology was associated with the use of rumination thinking during adolescence (Herman-Stahl et al. 1995). In contrast, there is evidence to suggest that the more competent and supported adolescents feel, the more likely they are to overcome adversity (Scales and Leffert 1999). Along with our data, these results suggest that the belief that one can successfully regulate one's own affective states is associated with lower psychological problems from adolescence to adulthood.

Limitations and future research directions

When interpreting the results obtained, it is important to take into account some limitations of this study. Firstly, the sample was mostly made up with Spanish-white adolescent individuals while other cultures or ethnic groups are less well-represented, so future

research should also replicate the current findings with more diversity of samples in order to represent the adolescent reality, especially when socio-economical and socio-cultural factors are related to and influence an individual's psychological maladjustment. Along these lines, it would be very interesting to explore whether PEI displays the same predictive value for psychological adjustment at different developmental stages and also to analyze the differences in the relation between trait meta-mood and psychological adjustment in samples of children, adolescents, and adults. A second limitation was the reliance on self-report measures to evaluate emotional intelligence and psychological adjustment. Although TMMS has been largely used in individual differences research for measuring PEI, it would be beneficial to include measures of abilities or multiple perspectives to reduce the problem of common method variance with outcome variables also measured by self-report. Unfortunately, few instruments have been developed to assess emotional intelligence as ability, even less to be used with the adolescent population, and more effort is needed in this sense in future research. Having reliable and valid ability measures of emotional intelligence in adolescents would allow us to examine the differential role that actual emotional abilities and the perceptions of these abilities have in order to predict adolescents' psychological adjustment. Third, in our study, we focused on a nonclinical sample of the adolescent population. Although this has allowed us to determine the involvement of PEI in the normal population, future research should corroborate our results in clinical samples (for example, people with affective disorders such as anxiety or depression) and analyze the extent to which the dimensions of PEI are useful to understand the onset and maintenance of diverse psychopathologies. Finally, although it was not explored in this study, negative emotions such as anxiety and depression could also lead to greater attention to one's own feelings, making the relationship between attention to feelings and negative emotions a bidirectional one. Also possible is the existence of a third variable, such as neuroticism that might affect both negative emotions and attention to feelings. Neuroticism is a personality trait characterized by proneness to experience negative emotions such as anxiety or depression (Watson 2000), and it has also been related to higher attention to feelings in adolescents (Salguero et al. 2010). It would be an interesting goal for future research to examine the associations among these three variables (attention to feelings, negative emotions, and neuroticism) and explore whether attention to feelings plays a mediator role in the relationship between neuroticism and negative emotions.

Conclusions

Despite these limitations, the present study shows that PEI predicted psychological adjustment in adolescents over 1 year. These findings support most of the previous literature in adult samples and carry on the modest research that began with adolescent population and longitudinal designs.

The present study also attempts to contribute to the design of intervention strategies because determining the protective and vulnerability factors of psychological adjustment in adolescents allows us to know where resources are needed for effective interventions in academic or clinical contexts. Although more research is needed in this sense, our data suggest that the use of emotional activities for promoting adequate attention to feelings—which allows us to be aware of our own feelings so as to use and manage emotional information (but not in an excessive way that maintains and intensifies negative moods)—or to improve the use of strategies to repair negative moods and prolong positive ones,

might be an important part of intervention efforts aimed at preventing and treating emotional and psychological disturbances in adolescence.

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References

- Alonso, J., Prieto, L., & Antó, J. M. (1995). La versión española del SF-36 Health Survey (Cuestionario de salud SF-36): un instrumento para la medida de los resultados clínicos. *Medicina Clínica, 104*, 771–777.
- Berking, M., Orth, U., Wupperman, P., Meier, L. L., & Caspar, F. (2008). Prospective effects of emotion-regulation skills on emotional adjustment. *Journal of Counseling Psychology, 55*, 485–494.
- Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E., Jr., Barsky, A. J., & Weinstein, M. C. (1991). Performance of a five-item mental health screening test. *Medical Care, 29*, 169–176.
- Ciarrochi, J., Chan, A., Caputi, P., & Roberts, R. (2001). Measuring emotional intelligence (EI). In J. V. Ciarrochi, J. P. Forgas, & J. D. Mayer (Eds.), *Emotional intelligence in everyday life* (pp. 25–44). Philadelphia: Psychology Press.
- Cuijpers, P., Smits, N., Donker, T., Ten Have, M., & de Graaf, R. (2009). Screening for mood and anxiety disorders with the five-item, the three-item, and the two-item Mental Health Inventory. *Psychiatry Research, 168*, 250–255.
- Durlak, J. A. (1998). Common risk and protective factors in successful prevention programs. *The American Journal of Orthopsychiatry, 68*, 512–520.
- European Pact for Mental Health and Well-being (2008, June). Summary Report of the *European High Level Conference "Together for Mental Health and Well-being."* Brussels. Retrieved on August, 1, 2009, at http://ec.europa.eu/health/ph_determinants/life_style/mental/docs/pact_en.pdf.
- Evans, D. L., Foa, E. B., Gur, R. E., Hendir, H., O'Brien, C. P., & Seligman, M. E. P. (2005). *Treating and preventing adolescent mental health disorders: What we know and what we don't know. A research agenda for improving the mental health of our youth.* New York: Oxford University Press.
- Extremera, N., & Fernández-Berrocá, P. (2006). Emotional intelligence as predictor of mental, social, and physical health in university students. *The Spanish Journal of Psychology, 9*, 45–51.
- Extremera, N., Durán, A., & Rey, L. (2007). Perceived emotional intelligence and dispositional optimism–pessimism: Analyzing their role in predicting psychological adjustment among adolescents. *Personality and Individual Differences, 42*, 1069–1079.
- 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.
- Fernández-Berrocá, P., & Extremera, N. (2008). A review of trait meta-mood research. *International Journal of Psychology Research, 2*(1), 39–67.
- Fernández-Berrocá, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of Trait Meta-Mood Scale. *Psychological Reports, 94*(1), 751–755.
- Fernández-Berrocá, P., Alcaide, R., Extremera, N., & Pizarro, D. A. (2006). The role of emotional intelligence in anxiety and depression among adolescents. *Individual Differences Research, 4*, 16–27.
- Garber, J., Braafladt, N., & Weiss, B. (1995). Affect regulation in depressed and nondepressed children and young adolescents. *Development and Psychopathology, 7*, 93–115.
- Gohm, C. L., & Clore, G. L. (2002). Four latent traits of emotional experience and their involvement in attributional style, coping and well-being. *Cognition and Emotion, 16*, 495–518.
- Goldman, S. L., Kraemer, D. T., & Salovey, P. (1996). Beliefs about mood moderate the relationships of stress to illness and symptom reporting. *Journal of Psychosomatic Research, 41*, 128–155.
- González, J., Fernández, S., Pérez, E., & Santamaría, P. (2004). *Spanish adaptation of Behavior Assessment System for Children and Adolescents: BASC.* Madrid: TEA.
- Herman-Stahl, M. A., Stemmler, M., & Petersen, A. C. (1995). Approach and avoidant coping: Implications for adolescent mental health. *Journal of Youth and Adolescence, 24*, 649–665.
- Kerns, J. G. (2005). Positive schizotypy and emotion processing. *Journal of Abnormal Psychology, 114*, 392–401.
- Larsen, R. J. (2000). Toward a science of mood regulation. *Psychological Inquiry, 11*, 129–141.

- Larson, R., & Lampman-Petrattis, C. (1989). Daily emotional states as reported by children and adolescents. *Child Development, 60*(5), 1250–1260.
- Leible, T., & Snell, W. E., Jr. (2004). Borderline personality disorder and multiple aspects of emotional intelligence. *Personality and Individual Differences, 37*, 393–404.
- Lischetzke, T., & Eid, M. (2003). Is attention to feelings beneficial or detrimental to affective well-being? Mood regulation as a moderator variable. *Emotion, 3*, 361–377.
- Martins, A., Ramalho, N., & Morin, E. (2010). A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Personality and Individual Differences, 49*(6), 554–564.
- 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.
- Mayer, J. D., Salovey, P., & Caruso, D. (2000). Models of emotional intelligence. In R. J. Sternberg (Ed.), *The handbook of intelligence* (pp. 393–420). New York: Cambridge University Press.
- Mayer, J. D., Salovey, P., & Caruso, D. (2001). *Technical manual for the MSCEIT v. 2.0*. Toronto: MHS Publishers.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59*, 507–536.
- Montañés, J., & Latorre, J. M. (2004). Anxiety, emotional intelligence and health in adolescence. *Anxiety & Stress, 10*(1), 111–125.
- Mor, N., & Winquist, J. (2002). Self-focused attention and negative affect: A meta-analysis. *Psychological Bulletin, 128*, 638–662.
- Moriarty, N., Stough, C., Tidmarsh, P., Eger, D., & Dennison, S. (2001). Deficits in emotional intelligence underlying adolescent sex offending. *Journal of Adolescence, 24*, 743–751.
- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science, 5*(3), 400–424.
- Palmer, B., Gignac, G., Bates, T., & Stough, C. (2003). Examining the structure of the Trait Meta-Mood Scale. *Australian Journal of Psychology, 55*, 154–159.
- Ramos, N., Fernández-Berrocal, P., & Extremera, N. (2007). Perceived emotional intelligence facilitates cognitive-emotional processes of adaptation to an acute stressor. *Cognition & Emotion, 21*, 758–772.
- Reynolds, C. R., & Kamphaus, R. W. (1992). *Manual for the behavioral assessment system for children*. Circle Pines: American Guidance Service.
- Reynolds, C. R., & Kamphaus, R. W. (2004). *Behavior assessment system for children* (2nd ed.). Circle Pines: American Guidance Service.
- Rumpf, H., Meyer, C., Hapke, U., & John, U. (2001). Screening for mental health: validity of the MHI-5 using DSM-IV Axis 1 psychiatric disorders as gold standard. *Psychiatry Research, 105*, 243–253.
- Salguero, J. M., & Iruarizaga, I. (2006). Relationships between perceived emotional intelligence and negative emotionality: Anxiety, anger and sadness/depression. *Anxiety & Stress, 12*(2–3), 207–221.
- Salguero, J. M., Fernández-Berrocal, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in adolescent population: psychometric properties of the Trait Meta Mood Scale. *Social Behavior and Personality, 38*(9), 1197–1210.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*, 185–211.
- 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. 125–154). Washington, DC: 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 & Health, 17*, 611–627.
- Scales, P., & Leffert, N. (1999). *Developmental assets: A synthesis of the scientific research on adolescent development*. Minneapolis: Search Institute.
- Schutte, N., Malouff, J., Thorsteinsson, E., Bhullar, N., & Rooke, S. (2007). A meta-analytic investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences, 42*, 921–933.
- Shulman, T., & Hemenover, S. (2006). Is dispositional emotional intelligence synonymous with personality? *Self and Identity, 5*, 147–171.
- Silk, J. S., Steinberg, L., & Sheffield Morris, A. (2003). Adolescents' emotion regulation in daily life: Links to depressive symptoms and problem behavior. *Child Development, 74*(6), 1869–1880.
- Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience and Biobehavioral Reviews, 24*(4), 417–463.
- Swinkels, A., & Giuliano, T. A. (1995). The measurement and conceptualization of mood awareness: Monitoring and labeling one's mood states. *Personality and Social Psychology Bulletin, 21*, 934–949.

- Thayer, J. F., Rossy, L. A., Ruiz-Padial, E., & Johnsen, B. H. (2003). Gender differences in the relationship between emotional regulation and depressive symptoms. *Cognitive Therapy and Research, 27*, 349–364.
- Thompson, B., Waltz, J., Croyle, K., & Pepper, A. (2007). Trait meta-mood and affect as predictors of somatic symptoms and life satisfaction. *Personality and Individual Differences, 43*, 1786–1795.
- UNICEF (2007). *Child poverty in perspective: An overview of child well-being in rich countries*. Paris: Innocenti Research Centre. Report Card 7.
- Vilagut, G., Ferrer, M., Rajmil, M., Rebollo, P., Permanyer-Miralda, G., & Quintana, J. M. (2005). El cuestionario de salud SF-36 español: una década de experiencia y nuevos desarrollos. *Gaceta Sanitaria, 19*, 135–150.
- Ware, J. E., & Gandek, B. (1998). Overview of the SF-36 Health Survey and the International Quality of Life Assessment (IQOLA) Project. *Journal of Clinical Epidemiology, 51*, 903–912.
- Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item short-form health survey (SF-36): Conceptual framework and item selection. *Medical Care, 30*, 473–483.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford.
- Williams, F., Fernández-Berrocal, P., Extremera, N., Ramos, N., & Joiner, T. E. (2004). Mood regulation skill and the symptoms of endogenous and hopelessness depression in Spanish high school students. *Journal of Psychological maladjustment and Behavioral Assessment, 26*, 233–240.

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Current themes of research:

The role of emotional intelligence in predicting psychological and emotional disturbances in adolescents. Development and validation of assessment measures of emotional intelligence. Literacy interventions on emotional intelligence.

Relevant publications:

- Salguero, J.M., Fernández-Berrocal, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in adolescent population: Psychometric properties of the Trait Meta Mood Scale. *Social Behavior and Personality, 38*(9), 1197–1210.
- Ruiz-Aranda, D., Fernández-Berrocal, P., Cabello, R., & Salguero, J. M., (2008). Educando la inteligencia emocional en el aula: Proyecto Intemo [Educating in emotional intelligence in the classroom: Intemo Project]. *Revista de Investigación Psicoeducativa, 6*(2), 240–251.
- Ruiz-Aranda, D., Salguero, J. M., Cabello, R., Palomera, R., & Fernández-Berrocal, P. (in press). Can an emotional intelligence program improve adolescents' psychosocial adjustment? Results of Project Intemo. *Social Behavior and Personality*.

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Current themes of research:

Teacher's emotional intelligence on relation with teaching quality and school social climate. Development and validation of assessment measures of emotional intelligence. Literacy interventions on emotional intelligence.

Relevant publications:

- Gil-Olarte, P., Palomera, R. y Brackett, M. (2006). Relating emotional intelligence to social competence, and academic achievement. *Psicothema*, *18*, 118–123.
- Palomera, R., Fernández-Berrocal, P. y Brackett, M. (2008). Emotional intelligence as a basic competence on teacher's initial education. *Electronic Journal of Research in Educational Psychology*, *6*(2), 437–454.
- Brackett, M. A., Palomera, R., Mojsa, J., Reyes, K., Salovey, P. (2010). Emotion-Regulation Ability, Burnout, and Job Satisfaction among British Secondary-School Teachers. *Psychology in the Schools*, *47* (4), 406–417.

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Current themes of research:

Emotional intelligence on educational context. Development of customized training programs for improving people's emotional intelligence.

Relevant publications:

- Fernández-Berrocal, P., Extremera, N. y Palomera, P. (2008). Emotional Intelligence as a crucial Mental Ability on Educational Context. En A. Valle y J. C. Núñez (Eds.), *Handbook of Instructional Resources and Applications*. New York: Nova Science Publishers.
- Fernández-Berrocal, P. y Ruiz-Aranda, D. (2008). The Emotional intelligence in the school context. *Electronic Journal of Research in Educational Psychology*, *15*, 421–436.
- Extremera, N. & Fernández-Berrocal, P. (2003). La inteligencia emocional en el contexto educativo: hallazgos científicos de sus efectos en el aula. *Revista de Educación*, *332*, 97–116.
- Williams, F., Fernández-Berrocal, P., Extremera, N., Ramos, N., & Joiner, T. E. (2004). Mood regulation skill and the symptoms of endogenous and hopelessness depression in Spanish high school students. *Journal of Psychological maladjustment and Behavioral Assessment*, *26*, 233–240.
- 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*, 16–27.