

## The Measurement of Perceived Emotional Intelligence for Spanish Adolescents with Social Anxiety Disorder Symptoms

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**Título:** La medición de la Inteligencia Emocional en adolescentes españoles con trastorno de ansiedad.

**Resumen:** La Inteligencia Emocional (IE) es un concepto que ha sido discutido durante décadas en Psicología pero no ha recibido apoyo empírico hasta hace pocos años, a pesar de ello parece que en las últimas décadas este concepto está suscitando mucho interés entre las diversas áreas de la Psicología. Con este creciente interés, el concepto de percepción de la Inteligencia Emocional está recibiendo mayor atención. Debido a interés mostrado en este concepto, este artículo tiene como objetivo explorar dos aspectos importantes del mismo: la medida de la percepción de la IE y las implicaciones que la percepción de la IE puede tener en adolescentes con un trastorno de Ansiedad Social (TAS). Este estudio explora un cuestionario muy utilizado para evaluar el PEI, llamado Trait Meta-Mood Scale (TMMS). La versión española reducida de dicho cuestionario (TMMS-24) y una serie de cuestionarios muy utilizados para evaluar el TAS fueron administrados a 425 adolescentes españoles. Los resultados del estudio corroboraron que el TMMS-24 posee buenas propiedades psicométricas en adolescentes y que el componente de regulación emocional parece que está involucrado en la ansiedad social.

**Palabras clave:** Adolescentes; instrumentos de evaluación; inteligencia emocional; ansiedad social.

**Abstract:** Emotional Intelligence (EI) is a concept that has been discussed for decades in Psychology but has received very little empirical study until recently. And with this growing interest, its accompanying concept, Perceived Emotional Intelligence (PEI), has also received more attention. It is due to this growing interest in PEI that this paper explores two important aspects of the PEI: the measurement of PEI and the implications PEI may have for adolescent anxiety disorder symptomatology. This study explores a well-known questionnaire of PEI, namely the Trait Meta-Mood Scale questionnaire (TMMS). The Spanish shortened version of the Trait Meta-Mood Scale questionnaire (TMMS-24) and a series of well-known questionnaires of Social Anxiety Disorder symptomatology were administered to 425 Spanish high-school adolescents. The results of this study corroborated that the TMMS-24 has good psychometric properties in adolescents, and that one of its three scales (Emotional Repair) appears to be involved in adolescent SAD symptomatology.

**Key words:** Adolescents; assessment; emotional Intelligence; social anxiety disorder symptoms.

### Introduction

While there is still much controversy about the Emotional Intelligence (EI) construct in terms of its definition and components, the EI construct can be defined as the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them (Mayer, Caruso & Salovey, 1999). While traditional Intelligence Quotient (IQ) measures focus on logical problem-solving strategies, EI focuses on the emotional logic required to coming to solutions (Mayer & Salovey, 1997). This is an important distinction between traditional IQ measures and EI measures.

Salovey & Mayer (1997) postulated that EI composed of four dimensions. These four dimensions are: Emotional perception (the ability to consciously recognize our emotions and identify what we feel), Facilitating emotional (the ability to generate feelings when they facilitate thought), Emotional understanding (the ability to integrate what we feel in our thoughts and know consider the complexity of the emotional changes) and Emotional regulation (the ability to direct and manage emotions both positive and negative effectively).

Due to the growing attention of EI, several EI instruments have been developed (for a review, see: Extremera,

Fernández-Berrocal, Mestre, & Guil, 2004). In general, two types of instruments have been developed to assess EI: the first type are measures that allow estimation of EI as a skill. Among these measures the best known is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Mayer, Salovey, & Caruso, 2001). The second type of EI assessment instruments are those that have been developed to measure the Perceived EI (PEI). Within this second type, the one PEI instrument that is growing in prominence is the Trait Meta-Mood Scale questionnaire (TMMS: Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). The TMMS is the most widely used questionnaire to measure individuals differences in PEI (Fernández-Berrocal & Extremera, 2008). This questionnaire focuses on the reflective process that accompanying emotions, hence is a measure of PEI. The TMMS consists of three subscales: Emotional Attention (a skill to used to identify and recognize one's own feelings and those of the people around you), Emotional Clarity (is the ability to recognize emotions, labels emotions into specific categories and recognize what the underlying cause is behind these emotions) and Emotional Repair (is the ability to regulate your emotions and, by doing so, also help to regulate the emotions of others). Some examples of the questions posed by these subscales are (Salovey, Mayer, Goldman, Turvey & Palfai, 1995): Emotional Attention ("I think about my mood constantly"), Emotional Clarity ("I can never tell how I feel") and Emotional Repair ("Although I am sometimes sad, I have mostly optimistic outlook").

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Although the TMMS is a self-report measure, this measure assesses PEI in adults and adolescents, which, according to Ciarrochi, Deane, and Anderson (2002) is one of the most effective ways to understand the emotional and affective aspects of the person and can serve as a predictor of actual competence in EI. In the study by Ciarrochi, Chan, and Bajgar (2001), it was demonstrated that self-report measures are reliable and valid for adolescents. In addition, the self-report measures are easy to administrate and interpret, hence can be used in the school environment. Moreover, recently the TMMS has been validated for Spanish adolescents, showing that it is a good measure for use in this population (Salguero, Fernández-Berrocal, Balluerka, & Aritzeta, 2010).

While PEI is a relatively new paradigm, previous EI research has been conducted in the fields of education science (Parker, Summerfeldt, Hogan, & Majeski, 2004; Petrides, Frederickson, & Furnham, 2004; Ulutas & Ömeroglu, 2007) and the study of psychopathology. In respect to the latter, PEI has been related to several psychopathological disorders such as depression, substance abuse and general stress. For example, it has been shown that people with high PEI are less likely to have depression (Ciarrochi, et al., 2002; Saklofske, Austin, & Minski, 2003). It also was found that depressed people with high PEI reduce the risk of worsening (Ciarrochi et al., 2002). And moreover, persons in depression remission with high PEI are less likely to relapse since they both seek and are able to receive more support from their significant others (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007). Studies have shown that PEI is negatively related to alcohol abuse (Austin, Saklofske, & Egan, 2005). Moreover, researchers such as Gohm, Corser, and Dalsky (2005) and Schutte et al. (2007) have demonstrated that high PEI is associated with stress management and have even found a positive relationship between low stress and PEI (Piñar, & Fernández-Castro, 2011). Finally, Tsaousis (2005) found that high levels of PEI were associated with both general health as well as psychological health.

While PEI has been primarily studied in adults, as noted in the aforementioned studies, there are much fewer adolescent studies. This is curious since the development of psychopathological disorders, such as depression and anxiety, many times first occur during the adolescence (e.g., Hale, Raaijmakers, Muris, Van Hoof, & Meeus, 2009).

Of the few studies have been conducted with adolescents, these studies have been conducted primarily with community population. Studies show that PEI is important in this population as they have found that a low PEI (specifically low Emotional Clarity and Emotional Regulation) is related to high scores on depression and anxiety (Fernández-Berrocal, Alcaide, Extremera, & Pizarro, 2006; Fernández-Berrocal, Alcaide, & Ramos, 1999; Latorre & Montañes, 2004; Liao, Liao, Teoh, & Liao, 2003; Williams, Fernández-Berrocal, Extremera, Ramos, & Joiner, 2004). A longitudinal study of community adolescents (Salguero, Palomera, & Fernández-Berrocal, 2012) demonstrated that high scores in emotional Attention and low scores on Emotional Clarity

and Emotional Regulation after one year was associated with poorer psychological adjustment, such as higher anxiety, depression, social stress and low levels of general mental health. In respect to adolescent anxiety, one PEI study found in adolescent community population that adolescents with high scores for Social Anxiety Disorder (SAD) symptoms had lower scores on Emotional Clarity and Mood Repair and also had very high scores on Emotional Attention (Díaz-Castela, Espinosa-Fernández, García-Lopez, & Muela, 2008).

Moreover, studies have also found differences in PEI for adolescent boys and girls, these has been found for male and female adults (Gartzia, Aritzeta, Balluerka & Barberá, 2012) and adolescents is the developmental phase that differences begin to appear. In adolescents, girls score higher on the TMMS Emotional Attention (Fernández-Berrocal et al., 1999; Salguero et al., 2010), and these differences increase as the adolescents age (Salguero et al., 2010). It has also been found that adolescent boys perceive more Emotional Clarity and Emotional Regulation than adolescent girls (Fernández-Berrocal et al., 1999).

However, all these previous PEI adolescent studies did not study adolescents with a specific anxiety disorder symptomatology as defined by the DSM-IV-TR (American Psychiatric Association, 2000), and, instead used general measures of anxiety in determining differences in PEI scores. Furthermore, these previous studies did not specifically examine the factor structure of the TMMS using modern statistical analyses such as Confirmatory Factor Analyses (CFA). Therefore, for this study, the objectives were two-fold. The first objective was to verify that the TMMS-24 is a good measure for use for adolescents with and without the diagnosis of Social Anxiety Disorder (SAD) symptomatology (please, see García-Lopez & Storch, 2008; García-Lopez, Piqueras, Díaz-Castela, & Ingles, 2008, for a review on SAD). The second goal of this study was to determine whether adolescents with the diagnosis of SAD have lower PEI scores than adolescents that did not run a heightened risk for SAD symptomatology.

## Method

### Subjects

The sample used in the study consisted of 425 Spanish adolescents aged between 12 and 19 years old ( $M = 15.40$ ,  $SD = 1.32$ ) of which 200 were boys (47.1%) and 225 girls (52.9%). The educational level of the adolescent boys and girls was as follows: 1<sup>o</sup> and 2<sup>o</sup> ESO (Boys  $N = 22$ ; Girls  $N = 19$ ), 3<sup>o</sup> and 4<sup>o</sup> ESO (Boys  $N = 118$ ; Girls  $N = 137$ ), 1<sup>o</sup> Bachillerato and 2<sup>o</sup> Bachillerato (Boys  $N = 59$ ; Girls  $N = 68$ ).

The total sample was divided into two groups: 127 adolescents diagnosed with Social Anxiety Disorder symptomatology (by means of the Anxiety Disorders Interview Schedule for DSM-IV Child Version: ADIS-IV-C: Silverman & Albano, 1996) and a control group of 298 adolescents.

The sample was selected from 11 secondary schools in the city of Jaen (Spain) and nearby suburbs.

### Procedure

To conduct this research we approached secondary schools of the city of Jaen and surrounding suburbs. We informed these schools as to the objectives of the study and requested their cooperation. Adolescents who agreed to participate and who also provided a signed parental consent form, filled out three questionnaires in the classroom, namely the Social Phobia and Anxiety Inventory-Brief (SPAI-B; Garcia-Lopez, Beidel, Hidalgo, Olivares, & Turner, 2008) and the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998), in their own school. Those students who scored higher than the cut-off score proposed by Olivares, Garcia-Lopez, Turner, La Greca, and Beidel (2002) for SAS-A and the cut-off score proposed by Garcia-Lopez et al. (2008) were subsequently interviewed with the Anxiety Disorders Interview Schedule for DSM-IV: Child version (ADIS-IV-C) (Silverman & Albano, 1996) to confirm whether these adolescents would run a high risk of developing Social Anxiety Disorder (SAD) symptomatology. Also an equal number adolescents who did not surpass the cut-off score (potentially non-socially anxious adolescents) were interviewed to confirm having a low risk of developing SAD symptomatology. This interview was carried out by eight graduate students of Psychology from the University of Jaén. These eight graduate students were previously trained in the use of diagnostic interview, ADIS-IV-C (Silverman & Albano, 1996) and also were under the supervision of two persons (the first and fifth authors) who have broad expertise with these instruments. The researchers conducted diagnostic interviews to adolescents individually in a private room or office. Later on, Meta-Mood Scale 24 (TMMS-24; Salovey et al., 1995) questionnaire was completed in a group setting, in a common room of the institute. Before the ADIS-IV-C interview, the students received a series of verbal instructions in which they talked about the reason for the interview, the process to follow and the way they had to complete the questionnaire. The time required to conduct the assessment instrument and the questionnaire was about two hours. At all times adolescents were accompanied by one of the researchers.

### Instruments

#### *Anxiety Questionnaire Screen*

The Social Anxiety Scale for Adolescents (SAS-A; La Greca & López, 1998) is a questionnaire that assesses Social Anxiety Disorder symptomatology in adolescents. The SAS-A consists of 18 items that are answered in a Likert scale of 5 points (1 = *Never* to 5 = *Always*). This questionnaire has three subscales: Fear of Negative Evaluation (FNE), consisting of 8 items; Social Anxiety and Avoidance of strangers

(SAD-N) with 6 items and Social Anxiety and Avoidance to people in general (SAD-G) with 4 items. Using both adolescent community and clinical populations, researchers have reported good internal consistencies (ranging from .76 to .91; La Greca & Lopez, 1998). Furthermore, test-retest reliabilities range from .54 to .78 for a 2-month interval (La Greca & Lopez, 1998). Studies have also shown the good psychometric properties and invariance of the questionnaire in both a Chinese population (Zhou, Xu, Inglés, Hidalgo, & La Greca, 2008) and a Spanish population (Inglés, La Greca, Marzo, Garcia-Lopez, & Garcia-Fernandez, 2010; Olivares et al., 2005; Olivares, Garcia-Lopez, Hidalgo, & Caballo, 2004).

#### *Social Phobia and Anxiety Inventory-Brief*

The Social Phobia and Anxiety Inventory, Brief form (SPAI-B; Garcia-Lopez et al., 2008) is a questionnaire that assesses social phobia symptomatology in adolescents. The SPAI-B consists of 16 items that are answered with a Likert scale of 5 points. The respondents have to answer how often that happens the situation described in the item (1 = *Never*, 5 = *Always*). The scale has shown good psychometric properties in Spanish and Portuguese adolescents and young adults (Garcia-Lopez et al., 2008; Piqueras, Espinosa-Fernandez, Garcia-Lopez, & Beidel, 2012; Vieira, Salvador, Matos, Garcia-Lopez, & Beidel, in press). The authors have revealed that the internal consistency estimate for Spanish-speaking adolescents was .92 and the item-total correlation mean was .68 ( $SD = .06$ ) and ranged from .54 to .75. The test-retest stability was  $r = .60$ . The correlation between the SPAI and the SPAI-B is high ( $r = .88$ ) (Garcia-Lopez et al., 2008)

#### *DSM-IV Anxiety Interview (for running a high risk for SAD symptomatology)*

The Anxiety Disorders Interview Schedule for DSM-IV: Child Version (ADIS-IV-C) (Silverman & Albano, 1996) is a very widely used interview in research to diagnose DSM-IV anxiety disorders in children and adolescents (Schniering, Hudson, & Rapee, 2000). It is a semi-structured diagnostic interview that emphasizes anxiety disorders and other major childhood disorders, including the affective and externalizing disorders based on DSM-IV criteria. The ADIS-IV-C evaluates most of the child and adolescent psychopathological disorders of the DSM-IV (American Psychiatric Association, 2000), of which one is SAD. The duration of this interview between 60 and 120 minutes. Previous studies have found good psychometric properties for the ADIS-IV-C interview (Puliafico, Comer, & Kendall, 2007; Rao et al., 2007; Silverman, Saavedra, & Piña, 2001; Wood, Piacentini, Bergman, McCrackne, & Barrios, 2002). Specifically, test-retest reliability using the ADIS-IV-C (Silverman et al., 2001) was examined in approximately 40% of the present sample of youths and parents using a retest interval of 7 to 14 days. Re-

liability of anxiety disorder diagnoses revealed that the diagnoses derived using the ADIS-IV-C were highly reliable (Silverman et al., 2001). In a Spanish study, the kappa coefficients for Separation Anxiety Disorder, Social Anxiety Disorder, Specific Phobia, and Generalized Anxiety Disorder were all excellent ( $\kappa = .80$  to  $.92$ ) and suggests its utility in the Spanish population (García-Lopez, 2007).

#### *Perceived Emotional Intelligence Questionnaire*

The Spanish translation of the TMMS-24 (Fernández-Berrocal, Extremera, & Ramos, 2004), a shortened version of the original TMMS, was used in this study. The TMMS is a 24-item Likert-type scale on which participants are required to rate the extent to which they agree which each item on a 5-point scale with anchor of 1 = strongly disagree to 5 = strongly agree. The TMMS-24 consists of 24 items and has been found to have good psychometric properties; acceptable reliability and similar relations with criterion variables also found for the English version (Fernández-Berrocal et al., 2004). The internal consistency of the subscales was as high as in previous studies of the reliability of the English version (all Cronbach alphas were above  $.85$ ). The test-retest correlations after 4 weeks were good: Emotional Attention ( $r = .60$ ), Emotional Clarity ( $r = .70$ ) and Emotional Repair ( $r = .83$ ). The inter-correlations between the Spanish version of TMMS and the English version are very good: Emotional Attention ( $r = .90$ ), Emotional Clarity ( $r = .90$ ) and Emotional Repair ( $r = .86$ ). Additionally, Extremera and Fernández-Berrocal (2005) noted that the TMMS is the most widely used PEI instrument in Psychology research in Spain and much of Latin America. In Table 1, the items of the TMMS-24 are presented.

#### *Strategy of Analysis*

We aimed to explore if the PEI reports of adolescents free from the community sample differed from adolescents running a high risk of developing Social Anxiety Disorder symptomology. However, since the TMMS-24 has not yet been validated for adolescents we first conducted tests of the internal consistency of the subscales. We then conducted Confirmatory Factor Analysis (CFA) to validate the theoretical three-factor structure as compared to a one-structure factor (which would assume that all the items measure approximately the same general construct without differentiating between the theoretical three factors). These models were conducted in *Mplus* (Muthén & Muthén, 2006). The fit of the models was evaluated by means of two indices: the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Model fit is satisfactory if CFI is close to  $.90$ ; and the RMSEA is close to  $.08$  (Kline, 2005).

**Table 1.** Items of TMMS-24 (Fernández-Berrocal et al. 2004).

Item 1	I pay much attention to my feelings.
Item 2	Usually I care much about what I'm feeling
Item 3	It is usually a waste of time to think about your emotions.
Item 4	I think it's worth paying attention to your emotions or moods.
Item 5	I let my feelings interfere with what I am thinking.
Item 6	I think about my mood constantly.
Item 7	I often think about my feelings.
Item 8	I pay a lot of attention to how I feel.
Item 9	I am usually very clear about my feelings.
Item 10	I am rarely confused about how I feel.
Item 11	I usually know my feelings about a matter
Item 12	I can make sense out of my feelings.
Item 13	I often aware of my feelings on a matter.
Item 14	Always I can tell how I feel.
Item 15	Sometimes I can tell what my feelings are.
Item 16	I almost always know exactly how I am feeling.
Item 17	Although I am sometimes sad, I have mostly optimistic outlook.
Item 18	No matter how badly I feel, I try to think about pleasant things.
Item 19	When I am upset, I think of all the pleasure of life.
Item 20	I try to think good thoughts no matter how badly I feel.
Item 21	If I find myself getting mad, I try to calm myself down.
Item 22	I worry about being in too good a mood.
Item 23	I have much energy when I am happy.
Item 24	When I am angry I don't usually let myself feel that way.

© Fernández-Berrocal, Extremera y Ramos (2004)

Note. Emotional Attention (8 items: 1, 2, 3, 4, 5, 6, 7, 8), Emotional Clarity (8 items: 9, 10, 11, 12, 13, 14, 15, 16) and Emotional Repair (8 items: 17, 18, 19, 20, 21, 22, 23, 24).

## Results

We first calculated the internal consistency of the TMMS-24 subscales. The Cronbach alphas for all three scales were strong: Emotional Attention and Emotional Clarity =  $.86$  and Emotional Repair =  $.81$ . We then tested whether the hypothetical three-factor structure was better than one general factor. In Table 2 it is demonstrated that the hypothetical three-factor structure was better than the one general factor structure (i.e., the three factors of PEI fit the data better than just a general structure).

This was the case not just for the entire sample, but also for the community and clinical samples. Hence, the theoretic three-factor structure of the TMMS-24 is supported by these findings for both adolescents running a high risk for Social Anxiety Disorder symptomology (clinical sample) and for adolescents from the general community (community sample).

To determine that the between-group differences reflect true mean-level differences and cannot be solely attributed to different interpretations of items by different groups of people (i.e., the community and the clinical samples), one needs to demonstrate that individuals from different groups with a similar mean-level on a latent factor, also have a similar pattern of scores across the indicators of this latent factor (i.e., the items). For this purpose, metric/scalar invariance

tests were conducted. Establishing metric/scalar invariance involves a comparison of a model in which factor loadings and intercepts of items are constrained to be equal across groups, with a model in which factor loadings and intercepts are freely estimated for the two groups affects model fit (Vandenberg & Lance, 2000).

The combined metric and scalar invariance findings of Table 2 demonstrated that mean-level differences between

the clinical and community samples can be interpreted as true mean-level differences (Vandenberg & Lance, 2000). Hence, the three scales of the TMMS-24 questionnaire can be utilized in both clinical as well as community samples. In Table 3 the Structural Equation Modeling (SEM) factor weights are presented.

**Table 2.** Model Fit Indices for the One-Factor Model and the Three-Factor Model.

	N	$\chi^2$	df	Model fit	
				CFI	RMSEA (90% C.I.)
One-factor model					
Total sample	424	2148.61***	244	.556	.136 (.130 - .141)
Three-factor model					
Total sample	424	584.84***	241	.920	.058 (.052 - .064)
Community sample	297	536.40***	241	.902	.064 (.057 - .072)
Clinical sample	127	379.75***	241	.900	.067 (.054 - .080)
Metric/Scalar Invariance					
Unconstrained	424	953.86***	503	.898	.065 (.059 - .071)
Constrained	424	975.07***	524	.898	.064 (.057 - .070)

Note. df = Degrees of Freedom, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, 90% C.I. = 90% Confidence Interval. \*\*\*  $p < .001$ .

After establishing measurement equivalence, we proceeded to examining mean-level differences. For this purpose, we compared latent factor means instead of observed variable means (such as is done with ANOVA's), because in latent factor mean comparisons measurement error is accounted for (Kline, 2005). Therefore, latent factor mean comparisons are superior to observed mean comparisons. One significant difference emerged. This difference was that of the clinical sample having a significantly lower score than that of the community sample on Emotional Repair ( $\Delta M = -.288, S.E. = .0878, p < .05$ ). However, neither Emotional Attention ( $\Delta M = -.036, S.E. = .065, p > .05$ ) nor Emotional Clarity ( $\Delta M = .164, S.E. = .087, p > .05$ ) were significantly different between the clinical and community samples. Hence, with this more rigorous approach to variance analysis, we can conclude that the Emotional Repair scale is clearly different between the adolescent running a high risk for developing Social Anxiety Disorder symptomatology (clinical) and the community samples.

### Discussion and conclusions

So far few PEI studies have been conducted with adolescents due a scarcity of instruments. But research is needed in this population since, as mentioned earlier, the development of many DSM-IV-TR disorder symptoms begin in adolescence (Hale et al., 2009). The first objective of this study was to determine whether the TMMS-24 has good psychometric properties in adolescent populations, both from community and clinical samples. The CFI results demonstrated that the TMMS-24 is a reliable and valid measure for use in adolescents in both clinical (adolescents running a high risk for developing SAD) and community samples. These results are

consistent with a previous study in community population in adolescents without anxiety disorder symptoms (Salguero et al., 2010) demonstrating that the TMMS can also be used for adolescents.

**Table 3.** Standardized Factor Loadings of the Three-Factor Model for the Total Sample After Confirmatory Factor Analysis (Sorted by Size)

TMMS item	Emotional Attention	Emotional Clarity	Emotional Repair
TMMS7	.846		
TMMS8	.818		
TMMS2	.755		
TMMS4	.750		
TMMS6	.649		
TMMS1	.591		
TMMS5	.530		
TMMS3	.501		
TMMS16		.758	
TMMS11		.712	
TMMS10		.701	
TMMS9		.672	
TMMS14		.641	
TMMS15		.604	
TMMS12		.551	
TMMS13		.525	
TMMS20			.874
TMMS18			.837
TMMS19			.781
TMMS17			.674
TMMS21			.516
TMMS24			.420
TMMS22			.259
TMMS23			.233

Note. Emotional Attention (8 items: 1, 2, 3, 4, 5, 6, 7, 8), Emotional Clarity (8 items: 9, 10, 11, 12, 13, 14, 15, 16) and Emotional Repair (8 items: 17, 18, 19, 20, 21, 22, 23, 24).

The second objective was to determine whether adolescents with Social Anxiety Disorder (SAD) symptoms have lower PEI scores than adolescents without these symptoms. We found significant differences in the component of Emotional Repair in adolescents running a high risk for developing SAD symptoms, consistent with a previous study (Díaz-Castela et al., 2008), but we found no significant differences in Emotional Clarity and Emotional Attention. That is, adolescents with these problems are able to feel and express feelings appropriately but they have difficulties in understanding and properly regulating their emotional states compared with adolescents without SAD symptoms. Maybe this deficit in Emotional Repair is a component of adolescent SAD symptomology. An adolescent with a high Emotional Repair may be better able to adapt to his/her social environment. Adolescents with SAD symptomology (characterized with negative thoughts regarding or about social interactions) may simply have low Emotional Repair and that may be a reason why they have more difficulty to control their emotions and negative thoughts in social situations. Parental's expressed emotion level may also play a role, as noted by García-López (2013) and García-López, Muela, Espinosa-Fernández, & Díaz-Castela (2009).

As previously noted, this is the first study of adolescent PEI and SAD symptomology and it is therefore difficult to explain why Emotional Clarity and Emotional Attention were not different among the two adolescent groups. Since this study has a cross-sectional design, it may be that differ-

ences between adolescents without SAD symptomology and adolescents with SAD symptomology can only be detected in a future longitudinal design.

Since it seems that the PEI component of Emotional Repair is involved in adolescent SAD, we believe that further research is necessary as to whether it is useful to use the EI concept in improving the treatment of adolescent SAD. Use of EI in the treatment of adolescent SAD might provide adolescents greater self-awareness of their emotions, help them in identifying the emotional experiences of others, help in the regulation their emotional states, and use their emotions to facilitate thinking. This would help to reduce the anxiety experienced by adolescents with SAD, help them overcome stressful situations, and enable them to improve their relationships and grow emotionally.

As just noted, one limitation of this study that a cross-sectional design was used, which cannot examine how EI affects adolescents with SAD symptomology as they grow older. Another possible limitation is that the TMMS-24 is a self-report measure and may be filled in by the adolescents due to social desirability concerns the adolescents may have. Additionally, adolescents may not have sufficient insight into their emotional intelligence to accurately report it. A final limitation of the study may be the small sample used which may prevent the generalizability. Therefore future studies should be conducted with much larger sample sizes to better allow generalizability in both adolescent clinical and community population.

## References

- American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders*, Fourth edition, Text revision (DSM-IV-TR). Washington, DC: American Psychiatric Association.
- Austin, E. J., Saklofske, D. H., & Egan, V. (2005). Personality, well-being and Elath correlates of trait emotional intelligence. *Personality and Individual Differences*, *38*, 547-558.
- Ciarrochi, J.V., Chan, A., & Bajgar, J. (2001). Measuring emotional intelligence in adolescents. *Personality and Individual Differences*, *31*, 1105-1119.
- Ciarrochi, J., Deane, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences*, *32*, 197-209.
- Díaz-Castela, M. M., Espinosa-Fernández, L., García-López, L. J. & Muela (2008). *Inteligencia Emocional en adolescentes con problemas de ansiedad social*. Poster presented at the VII International Congress of the Spanish Society for the study of Anxiety and Strees, Benidorm.
- Extremera, N., & Fernández-Berrocal, P. (2005). Perceived emotional intelligence and life satisfaction: predictive and incremental validity using the Trait Meta-Mood Scale. *Personality and Individual Differences*, *39*, 937-948.
- Extremera, N., Fernández-Berrocal, P., Mestre, J. M. & Guil, R. (2004). Medidas de evaluación de la inteligencia emocional. *Revista Latinoamericana de Psicología*, *36*, 209-228.
- 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.
- Fernández-Berrocal, P., Alcaide, R., & Ramos, N. (1999). The influence of emotional intelligence on the emotional adjustment in high school students. *Bulletin of Kharkov State University*, *439*, 119-123.
- Fernández-Berrocal, P., & Extremera, N. (2008). A review of trait meta-mood research. *International Journal of Psychology Research*, *2*, 39-67.
- Fernández-Berrocal, P., Extremera, N. & Ramos, N. (2004). Validity and Reality of the Spanish modified version of the Trait Meta-Mood Scale. *Psychological Reports*, *94*, 751-755.
- García-López, L. J. (2007). *Examining the efficacy of three cognitive-behavioural treatments aimed at overcoming social anxiety in adolescents*. University of Murcia: Publication Service.
- García-López, L. J. (2013). *Tratando...trastorno de ansiedad social [Tratando...social anxiety disorder]*. Madrid: Piramide.
- García-López, L. J. & Storch, E. A. (2008). Recent advances in anxiety disorders in childhood. Foreword. *Behavioral Psychology-Psicología Conductual*, *16*, 361-363.
- García-López, L. J., Beidel, D. C., Hidalgo, M. D., Olivares, J., & Turner, S. M. (2008). Brief form of the Social Phobia and Anxiety Inventory for adolescents. *European Journal of Psychological Assessment*, *24*, 150-156.
- García-López, L. J., Muela, J. M., Espinosa-Fernández, L., & Díaz-Castela, M. M. (2009). Exploring the relevance of expressed emotion to the treatment of social anxiety disorder in adolescence. *Journal of Adolescence*, *32*, 1371-1376.
- García-López, L. J., Piqueras, J. A., Díaz-Castela, M. M., & Ingles, C. J. (2008). Social anxiety disorder in childhood and adolescents: Current trends, advances, and future directions. *Behavioral Psychology-Psicología Conductual*, *16*, 501-533.
- Gartzia, L., Aritzeta, A., Balluerka, N., & Barberá, E. (2012). Inteligencia emocional y género: más allá de las diferencias sexuales. *Anales de Psicología*, *28*, 567-575.
- Gohm, C. L., Corser, G. C., & Dalsky, D. J. (2005). Emotional intelligence under stress: Useful, unnecessary, or irrelevant? *Personality and Individual Differences* *39*(6): 1017-1028.
- Hale III, W. W., Raaijmakers, Q. A. W., Muris, P., Van Hoof, A., & Meeus, W. (2009). One Factor or Two Parallel Processes?: Comorbidity and

- Development of Adolescent Anxiety and Depressive Disorder Symptoms. *Journal of Child Psychology and Psychiatry*, 50, 1218-1226.
- Ingles, C. J., La Greca, A. M., Marzo, J. C., García-Lopez, L. J., García-Fernández, J. M. (2010). Social Anxiety Scale for Adolescents: Factorial invariance and latent mean differences across gender and age in Spanish adolescents. *Journal of Anxiety Disorders*, 24, 847-855.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling, Second edition*. New York: The Guilford Press.
- La Greca, A. M. & López, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, 26, 83-94.
- Latorre, J. M., & Montañes, J. (2004). Ansiedad, Inteligencia Emocional y Salud en la adolescencia. *Ansiedad y Estrés*, 10, 112-125.
- Liau, A. K., Liau, A. W. L., Teoh, G. B. S., & Liau, M. T. L. (2003). The Case for Emotional Literacy: the influence of emotional intelligence on problem behaviours in Malaysian secondary school students. *Journal of Moral Education*, 32, 51-66.
- Mayer, J., Caruso, D., & Salovey, P. (1999) Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27, 267-298.
- Mayer, J. D., & Salovey, P. (1995). Emotional intelligence and the construction and regulation of feelings. *Applied and Preventive Psychology*, 4, 197-208.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey y 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. (2001). *Technical manual for the MSCEIT v.2.0*. Toronto: MHS Publishers.
- Muthen, B. O., & Muthen, L. K. (2006). *Mplus user's guide. Fourth edition*. Los Angeles, CA: Muthen & Muthen.
- Olivares, J., García-Lopez, L. J., Hidalgo, M. D., & Caballo, V. E. (2004). Relationships among social anxiety measures and its invariance: A confirmatory factor analysis. *European Journal of Psychological Assessment*, 20, 172-179.
- Olivares, J., García-Lopez, L. J., Turner, S. M., La Greca, A. M., & Beidel, D. C. (2002). A pilot study on normative data for two social anxiety measures: The Social Phobia and Anxiety Inventory (SPAI), and the Social Anxiety Scale for Adolescents (SAS-A). *International Journal of Clinical and Health Psychology*, 2, 467-476.
- Olivares, J., Ruiz, J., Hidalgo, M.D., García-Lopez, L.J., Rosa, A. I., & Piqueras, J. A. (2005). Social Anxiety Scale for Adolescents (SAS-A): Psychometric properties in a Spanish-speaking population. *International Journal of Clinical and Health Psychology*, 5, 85-97.
- Parker, J. D. A., Summerfeldt, L. J., Hogan, M. J., & Majeski, S. (2004). Emotional intelligence and academic success: Examining the transition from high school to university. *Personality and Individual Differences*, 36, 163-172.
- Petrides, K. V., Frederickson, N., & Furnham, A. (2004). The role of trait emotional intelligence in academic performance and deviant behavior at school. *Personality and Individual Differences*, 36, 277-293.
- Piñar, M. J., & Fernández-Castro, J. (2011). La influencia de la inteligencia emocional en el estrés, la disonancia emocional y el rendimiento de tripulantes de cabina de pasajeros. *Anales de Psicología*, 27, 65-70.
- Piqueras, J. A., Espinosa-Fernandez, L., García-Lopez, L. J., & Beidel, D. C. (2012). Validación del "Inventario de Ansiedad y Fobia Social-Forma Breve" en jóvenes adultos españoles [Validation of the 'Social Phobia and Anxiety Inventory-Brief form' in Spanish young adults]. *Behavioral Psychology-Psicología Conductual*, 20, 505-528.
- Puliafico, A. C., Corner, J. S., & Kendall, P. C. (2007). Social phobia in youth: the diagnostic utility of feared social situations. *Psychological Assessment*, 19, 152-158.
- Rao, P.A., Beidel, D.C., Turner, S.M., Ammerman, T., Crosby, L.E., & Sallee, F.R. (2007). Social anxiety disorder in childhood and adolescence: Descriptive psychopathology. *Behaviour Research and Therapy*, 45, 1181-1191.
- Salguero, J.M., Fernández-Berrocal, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in the adolescent population: Psychometric properties of the Trait Meta-Mood Scale. *Social Behavior and Personality*, 38, 1197-1210.
- Salguero, J. M., Palomera, R., & Fernández-Berrocal, P. (2012) Perceived emotional intelligence as predictor of psychological adjustment in adolescents: a 1-year prospective study. *European Journal of Psychology of Education*, 27, 1, 21-34.
- Salovey, P., & Mayer, J.D. (1994). Some final thoughts about personality and intelligence. In Sternberg, R.J., & Ruzgis, P. (Eds.), *Personality and Intelligence*. (pp. 303-318). New York: Cambridge University Press.
- 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.), *Emotional disclosure and health* (pp. 125-154). Washington, DC: American Psychological Association.
- Saklofske, D. H., Austin, E. J., & Minski, P. S. (2003). Factor structure and validity of a trait emotional intelligence measure. *Personality and Individual Differences*, 34, 1091-1100.
- Schniering, C.A., Hudson, J. L., & Rapee, R. M. (2000). Issues in the diagnosis and assessment of anxiety disorders in children and adolescents. *Clinical Psychology Review*, 20, 453-478.
- Schutte, N.S., Malouff, J.M., Thorsteinsson, E.B., Bhullar, N., & Rooke, S.E. (2007). A meta-analytic investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences*, 42, 921-933.
- Silverman, W. K., & Albano, A. M. (1996). *The Anxiety Disorders Interview Schedule for DSM-IV-Child and Parent Versions*. London: Oxford University Press.
- Silverman, W. K., Saavedra, L., & Pina, A. A. (2001). Test-Retest Reliability of Anxiety Symptoms and Diagnoses with the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Versions. *Journal American Academy Child Adolescent Psychiatry*, 40, 937-944.
- Tsaousis, I. N., I. (2005). Exploring the relationship of emotional intelligence with physical and psychological health functioning. *Stress and Health*, 21, 77-86.
- Ulutas, I. & Ömeroglu, E. (2007). The effects of an emotional intelligence education program on the emotional intelligence of children. *Social Behavior and Personality*, 35, 1365-1372.
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3, 4-70.
- Vieira, S., Salvador, C., Matos, A. P., García-Lopez, L. J., & Beidel, D. C. (in press). "Inventario de Fobia y Ansiedad Social - Versión Breve": Propiedades psicométricas en una muestra de adolescentes portugueses [The Social Phobia and Anxiety Inventory -Brief form: Psychometric properties in a sample of Portuguese adolescents. *Behavioral Psychology-Psicología Conductual*, 21,
- 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.
- Wood, J. J., Piacentini, J. C., Bergman, L. R., McCrackne, J., & Barrios, V. (2002). Concurrent validity of the anxiety disorders section of the ADIS for DSM-IV: Child and parent versions. *Journal of Clinical Child and Adolescent Psychology*, 31, 335-342.
- Zhou, X., Xu, Q., Inglés, C. J., Hidalgo, M. D., & La Greca, Z. M. (2008). Reliability and validity of the Chinese version of the Social Anxiety Scale for Adolescents. *Child Psychiatry and Human Development*, 39, 185-200.

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