

## **ARE EMOTIONALLY INTELLIGENT STUDENTS MORE RESILIENT TO STRESS? THE MODERATING EFFECT OF EMOTIONAL ATTENTION, CLARITY AND REPAIR**

Sabina Hodzic<sup>1</sup>, Pilar Ripoll<sup>2</sup>, Hilda Costa<sup>2</sup> and Franck Zenasni<sup>1</sup>

<sup>1</sup>*Université Paris Descartes (France);* <sup>2</sup>*University of Valencia (Spain)*

### **Abstract**

The current study aims to examine the moderating effect of different dimensions of Trait Meta Mood Scale (TMMS) in the relationship between perceived stress and life satisfaction and mental health. We believe that the three TMMS dimensions (emotional attention, clarity and repair) will have different moderating effects. 835 university students from Spain, Portugal and Brazil participated in the investigation completing the short version of the trait meta-mood scale (TMMS24), Perceived Stress Scale, Satisfaction with life scale and General Health Questionnaire. The hierarchical regression analyses indicated different interactive effects of different TMMS-24 dimensions and stress in predicting life satisfaction and mental health. The only TMMS-24 dimension found to interact significantly with stress in predicting life satisfaction was emotional repair. When students perceive increased stress, the ones with lower emotional repair reported less satisfaction with life.

KEY WORDS: *perceived stress, emotional intelligence, life satisfaction, mental health.*

### **Resumen**

El objetivo del presente estudio es examinar el efecto modulador de las diferentes dimensiones de la "Escala rasgo de metaconocimiento de los estados emocionales" (*Trait Meta Mood Scale*, TMMS) en la relación entre el estrés percibido y la satisfacción con la vida y la salud mental. Se espera que las tres dimensiones de la TMMS (atención, claridad y reparación emocional) tengan diferentes efectos moduladores. Participaron 835 estudiantes universitarios de España, Portugal y Brasil completando la versión abreviada de la TMMS (la TMMS-24), la "Escala de estrés percibido", la "Escala de satisfacción con la vida" y el "Cuestionario de salud general". El análisis de regresión jerárquica muestra diferentes efectos interactivos de las dimensiones de la TMMS-24 y el estrés en la predicción de la satisfacción con la vida y la salud mental. La única dimensión de la TMMS-24 que ha interactuado de manera significativa con el estrés en la predicción de la satisfacción con la vida fue la reparación emocional. En situaciones de alto estrés, los estudiantes que tienen la reparación emocional más baja se sienten menos satisfechos con la vida.

PALABRAS CLAVE: *estrés percibido, inteligencia emocional, satisfacción con la vida, salud mental.*

## Introduction

Stress can be defined as a particular misbalance between individuals' appraisal of environmental demands and their perceived resources to cope with those demands (Lazarus & Folkman, 1984). A large number of investigations in psychology have demonstrated that stress can have numerous maladaptive outcomes.

The negative outcomes of stress range from physical illness and psychosomatic complaints to psychological problems. Different acute or chronic stressful situations (illness, life events, etc.) can provoke different negative outcomes - anxiety, depression, jealousy and envy, anger and irritation, shame and embarrassment, alternations in the immune system, retardation in disease recovery, behavioral and cognitive deficits (Buunk, De Jonge, Ybema, & De Wolff, 1998). According to Buunk et al. (1998), occupational stress can cause different adverse health consequences (especially in prolonged period), such as burnout, depression, psychosomatic complaints, physical health impairment. Stress is found to be negatively related with life satisfaction and general health in numerous investigations (Chang, 1998; Ciarrochi, Deane, & Anderson, 2002; Parslow, Jorm, Christensen, Rodgers, Strazdins, & D'Souza, 2004; Bovier, Chamot, & Perneger, 2004).

Some cognitive, affective or behavioral characteristics, however, moderate the effects of stress on the experience of negative emotions and health. According to Buunk et al. (1998) the most important moderator variables are personality traits (e.g., locus of control, type A behavior, hardiness) and social support. Others argue that the effort to manage one's own perception and interpretation of stressful events (Le Fevre, Matheny, & Kolt, 2003), positive affect (Folkman & Moskowitz, 2000) or dispositional optimism (Chang, 1998) are the key moderators of the effects of stress.

One of these moderators of stress is emotional intelligence (EI). Different aspects of EI (attending to moods, discriminating between feelings or regulating emotions) help in choosing efficient coping behaviors and are crucial for adaptive stress management (Extremera, Duran, & Rey, 2009). Moreover, perception individuals have about their own emotional abilities rather than their actual emotional abilities can be a strong protective factor when dealing with stressful situations (Ciarrochi et al., 2002; Extremera et al., 2009). Relevant aspects of individuals' perception of their emotional abilities are often referred to as Perceived Emotional Intelligence (PEI) (Extremera & Fernández-Berrocal, 2005) or trait meta-mood (Extremera et al., 2009). Some evidence suggest that EI measured as a trait and assessed with self-report measures is more strongly related to mental health than EI measured as an ability and assessed through ability measures (Martins, Ramalho, & Morin, 2010).

The aim of the present study is to explore whether different dimensions of EI, measured as trait, can buffer the negative effects of stress on psychological well-being. According to Mayer and Salovey, EI "*involves 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 & Salovey, 1997, p. 10).

In the present study, we focus on intrapersonal component of these abilities. More precisely, on individual differences in the way people assess their own *emotional attention* (the ability to attend to own feelings), *emotional clarity* (the ability to discriminate among feelings) and *emotional repair* (the ability to repair a bad mood) and whether these aspects interact with stress in predicting psychological well-being.

As for the theoretical approaches to EI in the current literature, EI is viewed from two different perspectives. From the *trait perspective*, EI represents a combination of emotion-related dispositions at hierarchically lower position than personality trait (Petrides, Pita, & Kokkinaki, 2007). Different models include different dispositions, but one of the most detailed models is Petrides and Furnham's (2001) model that encompasses factors like well-being (optimism, happiness, self-control (regulation of emotions), emotionality (emotional perception and expression) and sociability (assertiveness, management of emotions). The *ability perspective*, however, contemplates EI as individual differences in a specific emotion-related ability (or mix of different abilities).

In order to overcome the limitations and downsides of these approaches, Joseph and Newman (2010) proposed a new theoretical model of EI, a cascading model, which integrates emotional abilities with the well-known personality dimensions (cognitive ability, conscientiousness and emotional stability). Although the authors use EI abilities as predictors of job performance, the model provides better insight on the relationship between different EI dimensions and the antecedents of the EI process.

In an attempt to validate the concept, EI researchers have explored the link between EI and numerous emotion-related aspects. For instance, the importance of EI for health and well-being has been investigated in numerous studies. Most of the previous studies about the benefits of EI focused on direct effects of EI on well-being (Carmeli, Yitzhak-Halevy, & Weisberg, 2009; Extremera & Fernández-Berrocal, 2005; 2006; Gallagher & Vella-Brodrick, 2008).

As for the research regarding the direct effects of trait meta mood dimensions mentioned above, the results revealed that higher levels of emotional attention have been related with worse mental health and social functioning (Extremera & Fernández-Berrocal, 2006) and more depressive symptoms (Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). On the contrary, higher levels of emotional clarity have been associated with better life satisfaction (Extremera & Fernández-Berrocal, 2005; Palmer, Donaldson, & Stough, 2002) and mental health (Extremera & Fernández-Berrocal, 2006; Fernández-Berrocal & Extremera, 2006; Ramos, Fernández-Berrocal, & Extremera, 2007). Likewise, higher levels of emotional repair have been linked with better psychological and physical adjustment in numerous

studies (Extremera & Fernández-Berrocal, 2002; Extremera & Fernández-Berrocal, 2006; Fernández-Berrocal, Salovey, Vera, Extremera, & Ramos, 2005).

In addition, previous studies show that EI plays an important role in stress resiliency. These studies suggest that individual differences in EI determine the way people react to stress and negative emotions and how they cope with stress and regulate their emotions (Gohm, 2003; Montes-Berges & Augusto, 2007). Gohm (2003) showed that people differ in emotional reactions depending on the combination of emotional traits they possess. Thus, people who experience intense emotions, pay attention to them and understand them showed to maintain negative emotions longer than the ones who attend to their emotions but lacked clarity about them in situations of induced negative emotions. Individuals who cannot identify well what they are feeling tend to quickly repair negative states and avoid the negative feelings. Although this type of reaction might be useful in some situations, Gohm (2003) argues that it can be counter-productive in other situations where the use of emotions might be important for making decisions or judgments. In another study, Montes-Berges and Augusto (2007) showed that emotional clarity and repair were the main predictors of subjective and objective social support among nursing students. On the other hand, high emotional attention was associated with bad coping strategies, like cognitive and behavioral avoidance strategies.

From different EI dimensions, previous research usually mentions emotional repair as an important factor in stress management and link it to less self-reported physical and psychological symptoms (Extremera & Fernández-Berrocal, 2002; Salovey, Stroud, Woolery, & Epel, 2002). Emotional repair, mediated through different variables (such as positive affect or self-efficacy), can help in successful stress management by enabling people to choose better and more productive coping strategies, such as problem-focused strategies or positive appraisal of stressful events (Folkman & Moskowitz, 2000; Houghton, Wu, Godwin, Neck, & Manz, 2012). Moreover, the relationship between the specific Trait Meta Mood Scale (TMMS) dimensions and stress has also been investigated in more controlled conditions (Fernández-Berrocal & Extremera, 2006). However, this study focuses on more "acute stressors" and uses only two negative moods (anger and sadness) to test the role of EI in the mood response.

Therefore, beyond the potential direct influences on psychological well-being, some authors have pointed out that EI might interact significantly with stress in the prediction of life satisfaction and well-being (Ciarrochi et al., 2002; Extremera et al., 2009; Mikolajczak, Luminet, & Menil, 2006;). These studies suggest that people generally differ in their reactions to stressful situations and events depending on their level of EI. Still, different researches highlight different EI dimensions as the most protective ones. Some results suggest that emotional clarity is the strongest protective factor from high perceived stress (Extremera et al., 2009). According to Extremera et al. (2009), students who understand well their own emotions and emotional experiences, can respond better to those stressful environmental demands. Other results show that managing other's emotions is the best protective factor (Ciarrochi et al., 2002), while others say that it is actually self-control (perceived abilities regarding emotion regulation and stress

management) that will protect psychological and physical health in stressful situations (Mikolajczak et al., 2006). Moreover, different results suggest that not all dimensions of EI act in the same way in this interaction with stress. In a study by Ciarrochi et al. (2002), emotional perception turned out to enhance the negative effects of stress on mental health. On the other hand, Extremera et al. (2006) argue that a moderate level of emotional attention combined with high level of emotional clarity and regulation should be the key to adequate personal and social well-being. These different findings and somewhat controversial role of emotional attention need to be considered when hypothesizing about different interactions.

Furthermore, despite an elevated research interest in EI and its links to health related variables, many of the previous studies lack the theoretical clarity regarding EI construct (Joseph & Newman, 2010). In addition, different studies include different types of measuring EI, such as TMMS (Extremera et al., 2009), Trait Emotional Intelligence Questionnaire (TEIQue, Mikolajczak et al., 2006) or Schutte's self-report questionnaire (Ciarrochi et al., 2002). This makes it more difficult to conceptually position emotional intelligence and to compare different results.

The present study extends and strengthens previous findings by analyzing the moderator role of EI in the relationship between stress and psychological well-being. In the study of psychological well-being, authors have included different aspects as key components in defining psychological well-being. For the purposes of the present study, we have operationalized it through two components - life satisfaction and mental health. Life satisfaction refers to a cognitive assessment of a person's overall life (Diener, Emmons, Larsen, & Griffin, 1985), while mental health (according to World Health Organization) is defined as a state of a satisfactory psychological, behavioral and social functioning. More precisely, we aim at exploring the specific interaction of different EI dimensions with stress in predicting satisfaction with life and mental health, using one of the most widely used self-report measures for evaluation of trait EI - the Trait Meta Mood Scale (more precisely, the short 24-item version - TMMS-24).

Considering the findings of the previous studies, we expect the negative effects of stress on psychological well-being to be lower in people with lower levels of emotional attention than in people with high levels of emotional attention (hypothesis 1). We also expect the negative effects of stress on psychological well-being to be lower in people with higher levels of emotional clarity and repair than in people with lower levels of emotional clarity and repair (hypothesis 2).

## Method

### *Participants*

The sample involved 835 undergraduate university students who voluntarily participated in the study. The average age was 23.8 years ( $SD= 7.31$ ). The majority of participants were women with 68.2% of the sample. In addition, the majority, 413 of participants, were living in Spain (49.5%), 161 in Portugal (19.3%) and 261 in Brazil (31.3%). The participants came from a variety of disciplines, including

psychology, social work, economics, medicine, marketing, business and engineering.

### *Control variables*

In order to isolate the effects of stress and EI dimensions on psychological well-being from the effects of the different demographic variables, we controlled for age, gender and country of origin. Gender was coded as a Dummy variable (0= Male/1= Female). Country of origin was also included as a Dummy variable. We created two different covariates, comparing Spain and Portugal and Spain and Brazil as follows: Spain= 0 / Portugal= 1; and Spain= 0 / Brazil= 1.

### *Measures*

- a) *Trait Meta-Mood Scale (TMMS)* (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). The Spanish (Fernández-Berrocal, Extremera, & Ramos, 2004) and Portuguese (Queirós, Fernández-Berrocal, Extremera, Carral, & Queirós, 2005) adaptations of the TMMS were used. The TMMS evaluates the extent to which people attend to and value their feelings (Attention), feel clear rather than confused about their feelings (Clarity), and use positive thinking to repair negative moods (Repair). A shorter version of the TMMS with 24 items (eight for each subscale) was used in the present study. The subscales include items such as: "I think about my mood state continuously" (Attention); "I am usually very clear about my feelings" (Clarity) and "Although sometimes I feel sad, I usually have an optimist vision" (Repair). Participants are asked to answer items rated on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability of the TMMS has been shown to be very satisfactory in both Spanish and Portuguese samples with Cronbach's alpha above .80 (Costa, Ripoll, Sánchez & Carvalho, 2013; Fernández-Berrocal et al., 2004; Queirós et al., 2005).
- b) *Perceived Stress Scale (PSS)* (Cohen, Kamarck, & Mermelstein, 1983). The Spanish and Portuguese versions of the PSS were used, which have been adapted by Remor (2006), and Di Bernardi, Oliveira, Zarpellon and Andrade (2007), respectively. The instrument, which consists of 14 items, measures the level of perceived stress during the last month. Sample item: "How often have you felt unable to control the important things in your life?" The response scale is a five-point Likert scale (1= Never, 5= Very often). The Spanish version of the PSS showed good reliability (both with internal consistency check ( $\alpha = .81$ ) and test-retest check ( $r = .73$ )) and validity (Remor, 2006).
- c) *Satisfaction with Life Scale (SWLS)* (Diener et al., 1985). The SWLS is a self-report measure of life satisfaction, where respondents indicate their level of agreement with each of five statements (e.g., "In most ways my life is close to my ideal") on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Spanish and Portuguese versions of the SWLS were used, adapted by Atienza, Balaguer, and Garcia-Merita (2003) and Neto (1993), respectively.

- d) *General Health Questionnaire* (GHQ-12) (Goldberg, 1972). The Spanish (Rodríguez, Hontangas, Bravo, Grau, & Ramos, 1993) and Portuguese (Sarriera, Schwarcz, & Câmara, 1996) versions of the GHQ-12 were used. The participants were asked how they felt during the last weeks. The response scale is a four-point Likert scale (from 0= More than usually, to 3= Very less than usually). The GHQ-12 scale has two dimensions: social dysfunction (e.g., "Were you able to concentrate well on what you did?"), and anxiety/depression dimension (e.g., "Have you felt unhappy and depressed?"). The items from Item 7 to Item 12 were inverted so that high scores on both dimensions - social dysfunction and anxiety/depression - indicate low mental health.

### *Procedure*

Data collection was conducted through questionnaires administered to participants of the study in the university centers between 2007 and 2009. At the beginning, the researchers explained the instructions of the questionnaire and guaranteed confidentiality of data. The completion required approximately 20 minutes.

### *Data analysis*

Descriptive statistics (mean and standard deviation), Pearson correlations and alpha coefficients were calculated. In order to explore the effects of EI dimensions on well-being, and to analyze in what way these dimensions moderate the relation between stress and psychological well-being, we performed a series of moderator regression analyses for each dependent variable (life satisfaction, social dysfunction and anxiety/depression) using IBM SPSS Statistics v. 21.0 (IBM Corp, 2012). We centered scores of stress and EI dimensions in order to test and interpret the moderation analyses. The F-test of statistical significance was used to assess the change in  $R^2$  resulting from the addition of interactions between stress and EI dimensions.

## **Results**

### *Preliminary analyses*

The Pearson correlations among the variables, their respective means and standard deviations are shown in table 1. Reliability analyses (Cronbach's alpha) have also been conducted in order to examine internal consistency of the applied measures.

### *Moderated regression analyses*

The results of moderated regression analyses showed that gender and age were not predictors of well-being in the hierarchical model, but the country

participants lived in was. Variable country was found to explain small but significant portion of variance in life satisfaction ( $R^2= 9.9\%$ ,  $p< .001$ ), social dysfunction ( $R^2= 2.4\%$ ,  $p< .001$ ), and anxiety/depression ( $R^2= 9.2\%$ ,  $p< .001$ ). In order to test if the differences between countries were significant, we performed analyses of variance (ANOVA). The results are presented in table 2.

**Table 1**

Means, standard deviations, correlations, and reliabilities of the study variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Stress	2,84	0,48	(0,77)						
2. Satisfaction with life	3,47	0,78	-0,44 ***	(0,81)					
3. Social dysfunction	0,98	0,52	0,51 ***	-0,31 ***	(0,78)				
4. Anxiety/depression	1,45	0,73	0,43 ***	-0,27 ***	0,42 ***	(0,82)			
5. Emotional attention	3,67	0,82	0,12 **	0,16 ***	-0,05	0,05	(0,90)		
6. Emotional clarity	3,46	0,71	-0,28 ***	0,32 ***	-0,16 ***	-0,15 ***	0,33 ***	(0,86)	
7. Emotional repair	3,54	0,78	-0,42 ***	0,45 ***	-0,27 ***	-0,30 ***	0,20 ***	0,42 ***	(0,87)

Note: Internal reliabilities are in parentheses; \* $p< .05$ ; \*\* $p< .01$ ; \*\*\* $p< .001$ .

**Table 2**

Differences between countries in satisfaction with life, social dysfunction and anxiety/depression

Variable	Country	<i>M</i>	<i>SD</i>	<i>F</i> ( <i>df</i> )	<i>p</i>
Satisfaction with life	Spain	3.23	0.76	45.247 (2)	.001
	Portugal	3.67	0.70		
	Brazil	3.74	0.73		
Social dysfunction	Spain	0.99	0.47	7.956 (2)	.001
	Portugal	1.10	0.47		
	Brazil	0.91	0.61		
Anxiety/Depression	Spain	1.53	0.63	37.353 (2)	.001
	Portugal	1.71	0.68		
	Brazil	1.15	0.81		

Notes: Means for Satisfaction with life with variation range from 1 to 5. Means for Social dysfunction and Anxiety/Depression with variation range from 0 to 3.

The results revealed that students from different countries reported significantly different levels of satisfaction with life, social dysfunction and anxiety/depression. We used the Tukey post-hoc test to identify the significant differences between the means. Spanish students reported lower satisfaction with life than Brazilian and Portuguese students. The difference between Brazilian and Portuguese students in satisfaction with life was not significant. On the other hand, Portuguese students demonstrated significantly lower mental health (on

both dimensions) than their Brazilian and Spanish colleagues, while the only significant difference between Brazilian and Spanish students was found in anxiety/depression dimension, with Spanish students reporting higher scores.

As can be seen in table 3, different interactions between stress and EI dimensions were found to explain small, but significant incremental portion of variance in life satisfaction ( $R^2= 0.7\%$ ,  $p< .05$ ), beyond the variance contributed by the main effect of stress and the EI dimensions. Additionally, different interactions between these dimensions and stress explain small but significant percentage of variance in social dysfunction ( $R^2= 0.8\%$ ,  $p< .05$ ) (table 4) and anxiety/depression ( $R^2= 1.1\%$ ,  $p< .01$ ) (table 5).

**Table 3**  
Results of moderated hierarchical regression analysis for life satisfaction

Step	Variable	<i>b</i>	<i>SE</i>	$R^2$	$\Delta R^2$	$\Delta F$	<i>p</i>
1				.099	.099	20.14	.001
	Gender	-.082	.059				
	Age	.002	.004				
	Spain-Portugal	.448***	.076				
	Spain-Brazil	.507***	.065				
2				.357	.259	73.50	.001
	Stress	-.537***	.057				
	Emotional attention	.042	.033				
	Emotional clarity	.111**	.039				
	Emotional repair	.245***	.037				
3				.364	.007	2.70	.045
	Stress x Attention	-.063	.057				
	Stress x Clarity	-.037	.074				
	Stress x Repair	.163**	.062				

Notes: *b* is the unstandardized regression coefficient. \*\*\* $p< .001$ ; \*\* $p< .01$ ; \* $p< .05$ .

Furthermore, as seen from the tables 4 and 5, emotional attention significantly interacted with stress in predicting social dysfunction and anxiety/depression<sup>1</sup>. Figures 1 and 2 illustrate these interactions. Stress seems to affect mental health negatively, by increasing social dysfunction (Low attention slope:  $t= 11.89$ ,  $p< .001$ ; High attention slope:  $t= 9.77$ ,  $p< .001$ ) and anxiety/depression (low attention slope:  $t= 13.21$ ,  $p< .001$ ; high attention slope:  $t= 11.0$ ,  $p< .001$ ) among the participants of the study. Nevertheless, the relationship between stress and mental health is stronger in people with high emotional attention than in people with low emotional attention.

The results did not indicate significant interactions between stress and emotional attention in life satisfaction. Thus, hypothesis 1 is partially supported.

<sup>1</sup> In interaction effects, conventional limit level of *p* is .10. This level of *p* has been suggested by several authors (e.g., Rodríguez, Bravo, Peiró, & Schaufeli, 2001) to protect the test from the probability of committing a type II error when moderating analyses are performed.

**Table 4**  
Results of moderated hierarchical regression analysis for social dysfunction

Step	Variable	<i>b</i>	<i>SE</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\Delta F$	<i>p</i>
1				.024	.024	4.61	.001
	Gender	-.015	.041				
	Age	-.004	.003				
	Spain-Portugal	.135*	.054				
	Spain-Brazil	-.082	.046				
2				.281	.256	65.6	.001
	Stress	.544***	.040				
	Emotional attention	-.075**	.023				
	Emotional clarity	.017	.028				
	Emotional repair	-.051	.027				
3				.289	.008	2.88	.037
	Stress x Attention	.086*	.040				
	Stress x Clarity	-.022	.053				
	Stress x Repair	-.084 <sup>†</sup>	.044				

Notes: *b* is the unstandardized regression coefficient. \*\*\**p* < .001; \*\**p* < .01; \**p* < .05; <sup>†</sup>*p* < .10.

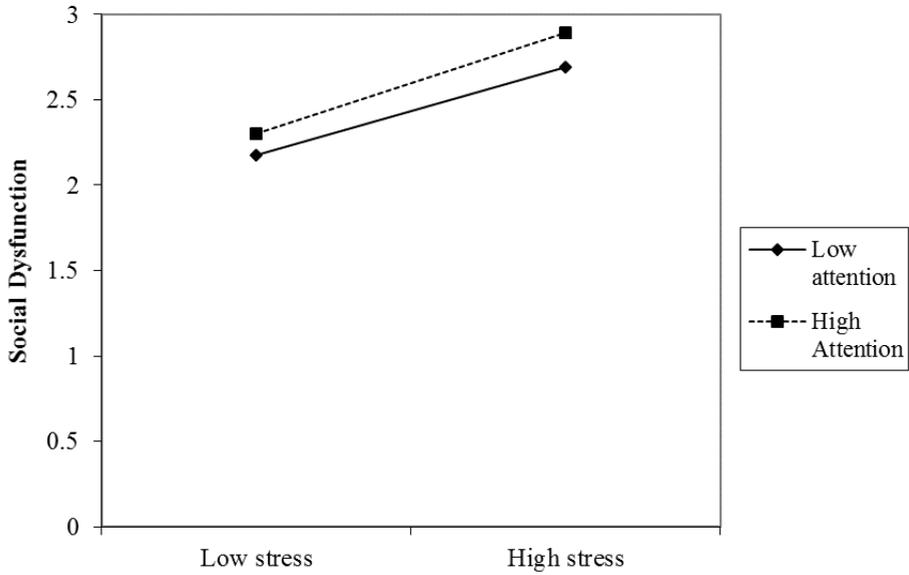
**Table 5**  
Results of moderated hierarchical regression analysis for anxiety/depression

Step	Variable	<i>b</i>	<i>SE</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$	$\Delta F$	<i>p</i>
1				.092	.092	18.53	.001
	Gender	.043	.056				
	Age	.001	.004				
	Spain-Portugal	.195**	.072				
	Spain-Brazil	-.407***	.061				
2				.284	.191	48.47	.001
	Stress	.582***	.057				
	Emotional attention	-.010	.032				
	Emotional clarity	-.007	.039				
	Emotional repair	-.124**	.037				
3				.295	.011	3.88	.009
	Stress x Attention	.105 <sup>†</sup>	.055				
	Stress x Clarity	-.220**	.073				
	Stress x Repair	.016	.061				

Notes: *b* is the unstandardized regression coefficient. \*\*\**p* < .001; \*\**p* < .01; \**p* < .05; <sup>†</sup>*p* < .10.

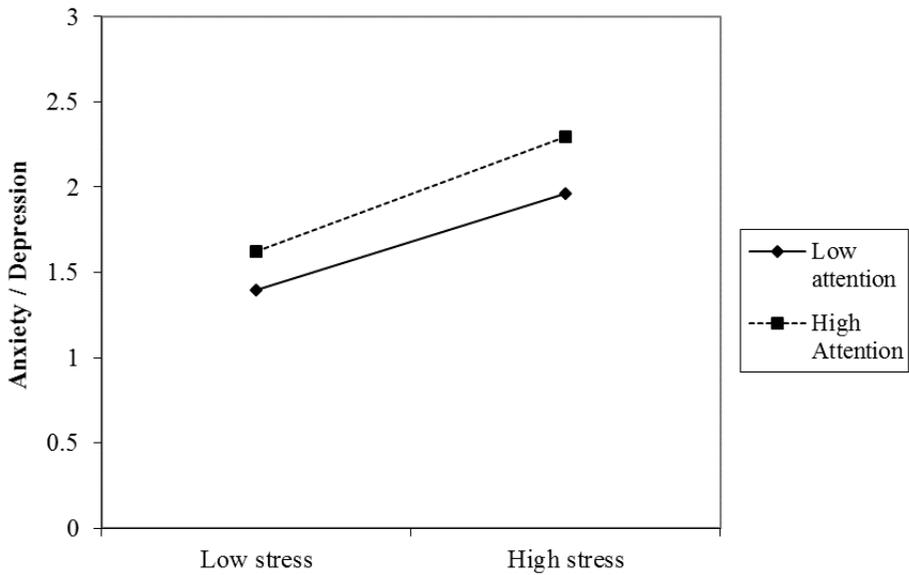
**Figure 1**

Interaction results of stress and emotional attention for social dysfunction



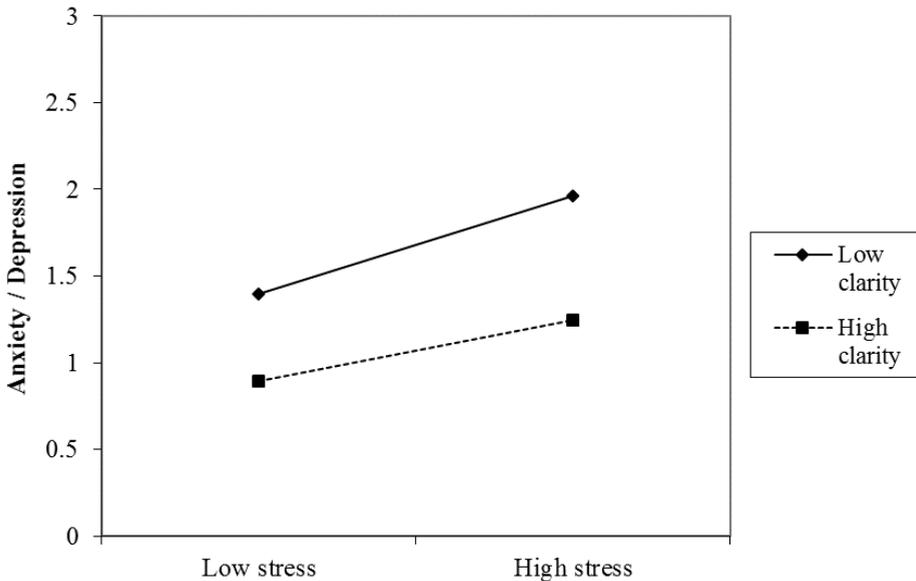
**Figure 2**

Interaction results of stress and emotional attention for anxiety/depression



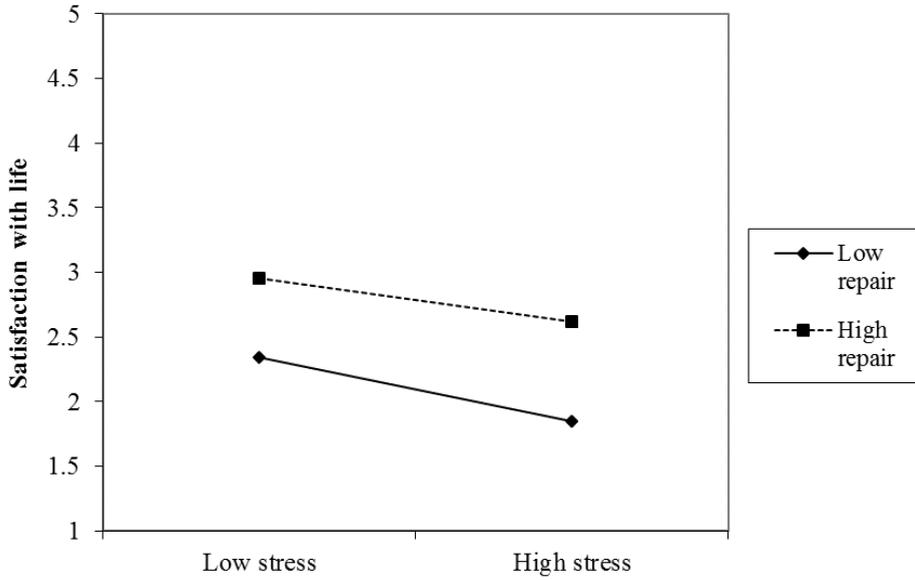
As for emotional clarity, the results showed that this dimension interacted significantly with stress in predicting anxiety/depression (low clarity slope:  $t= 13.21, p < .001$ ; high clarity slope:  $t= 5.86, p < .001$ ). Stress affects more negatively students with lower emotional clarity than those with higher clarity (figure 3). We didn't find any significant interactions between stress and clarity for social dysfunction or life satisfaction. Emotional repair, on the other hand, interacted with stress predicting changes in life satisfaction (low repair slope:  $t= -11.49, p < .001$ ; high repair slope:  $t= -5.55, p < .001$ ) and social dysfunction (low repair slope:  $t= 11.89, p < .001$ ; high repair slope:  $t= 7.09, p < .001$ ). Figures 4 and 5 illustrate these interactions. As stress increases, life satisfaction decreases and social dysfunction increases for both groups of students (low and high emotional repair). The influence of stress on life satisfaction and social dysfunction is stronger among individuals with lower levels of emotional repair, though (figure 3 and 4). No significant interactions between stress and emotional repair were found for anxiety/depression dimension. Therefore, hypothesis 2 is also partially supported.

**Figure 3**  
Interaction results of stress and emotional clarity for anxiety/depression



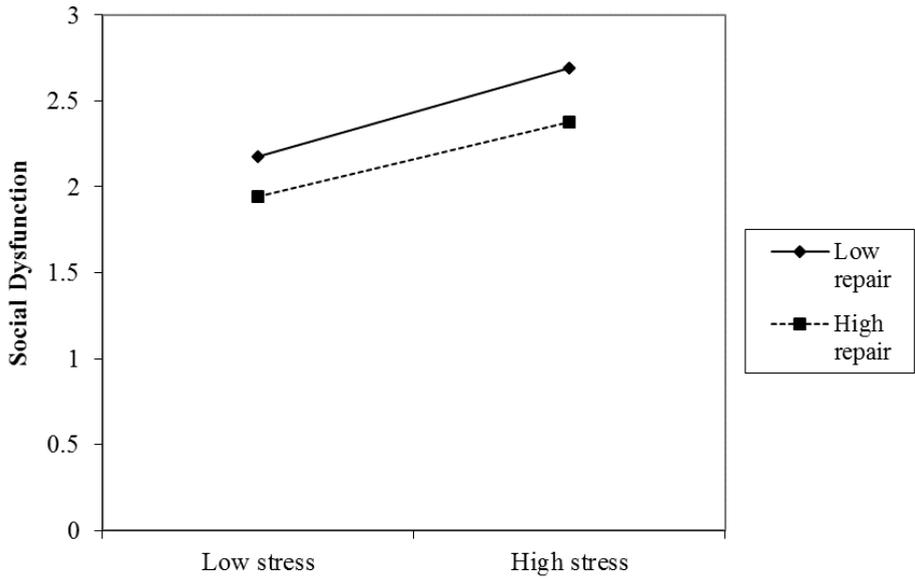
**Figure 4**

Interaction results of stress and emotional repair for satisfaction with life



**Figure 5**

Interaction results of stress and emotional repair for social dysfunction



## Discussion

The present study was conducted to integrate and expand data of previous research on the relationship between perceived stress and psychological well-being by taking into account the role of emotional intelligence. The study examined the additive and interactive influence of TMMS-24 dimensions and perceived stress on two indicators of psychological well-being: life satisfaction and mental health. We suggested that the effect of perceived stress on life satisfaction and mental health would depend on different dimensions of TMMS-24.

As for the control variables analyzed - gender, age and country of participants - only the latter was found to significantly predict psychological well-being. This is in line with the idea that psychological well-being depends less on the demographic factors and more on people's values and culture (Diener et al., 2002). Significant individual differences in satisfaction with life and mental health between students from different countries might indicate that culture effects peoples' values, which in turn shape the way people perceive and evaluate themselves and influence their behavior (Hofstede, 1991).

For example, the results of the present study suggest that students who live in cultures with higher uncertainty avoidance (such as Portugal and Spain) reported worse scores on mental health. These findings are in line with the idea that cultures with high uncertainty avoidance are often linked to higher levels of stress and anxiety (Fernández, Carrera, Sánchez, Paez, & Candia, 2000; Hofstede, 1991).

In addition, more collectivistic cultures (such as Portugal and Brazil) reported higher levels of satisfaction with life in the present sample. These results are in line with the findings of previous studies that suggest that in individualistic cultures the experience and expression of negative emotions is more intense (Fernández et al., 2000; Fernández-Berrocal et al., 2005).

Besides these findings about cultural differences in psychological well-being, the results of the present study showed that different dimensions of EI in interaction with stress predict small amount of variance in life satisfaction and mental health beyond the direct and independent effects of stress and EI dimensions.

More precisely, emotional attention interacted significantly with perceived stress in predicting mental health (measured by GHQ-12). Emotional attention seems to be important for both GHQ dimensions - anxiety/depression and the ability to perform social functions in life and to (social dysfunction). The investigations that explored the direct effects of emotional attention over mental health have demonstrated contradictory results (Carmeli et al., 2009; Extremera & Fernández-Berrocal, 2006; Gallagher & Vella-Brodrick, 2008; Palmer et al., 2002). This study gives an idea that stress could be a key variable for explaining these contradictory results. More specifically, it is shown that, in situations of low stress, students who report higher emotional attention perceive less social dysfunction and lower levels of anxiety/depression than their low emotional attention counterparts do. Nevertheless, the increase of stress affects more negatively students with higher emotional attention than those with lower emotional attention. These results are in line with previous findings that also highlight the risk

of excessive emotional attention to well-being (Ciarrochi et al., 2002; Extremera & Fernández-Berrocá, 2006). One of the possible explanations for this phenomenon could be rumination. People who give a great deal of attention to their moods and emotions (especially to the negative ones), tend to have ruminative thoughts, which can in turn, reduce their well-being (Extremera & Fernández-Berrocá, 2006; Salovey et al., 2002).

On the other hand, emotional clarity has a similar role as emotional attention, but just for anxiety/depression dimension. Students who tend to discriminate better among emotions (or perceive themselves as such) seem to feel less anxious and depressed in situations they evaluate as stressful. The results suggest that paying too much attention or not knowing own emotions could be the reasons for increased depression in circumstances appraised as stressful.

According to the results, the only EI dimension that interacted significantly with perceived stress in predicting satisfaction with life is emotional repair. The impact of emotional repair as a protective factor is most relevant in those moments in which participants perceived themselves as more stressed. According to the obtained results, emotional repair buffers the effect of stress on satisfaction with life. It seems that people high on emotional repair dimension can regulate moods in a positive direction and adapt better to stress. As Extremera and Fernández-Berrocá (2009) and Salovey et al. (2002) suggest, people who think they can repair bad mood or negative emotional states might actually act in that direction, seeking different behavioral responses, which can have psychological benefit in stressful circumstances. While, on the other hand, people who consider themselves as not so good at repairing their emotional states have more passive attitude, and therefore, do not put effort in finding solutions for their current emotional state. The lack of significant interaction effect of stress and two other EI dimensions might indicate that emotional attention and clarity are just not enough for protecting satisfaction with life in situations of perceived stress. Paying attention to emotions and distinguishing among emotions might be necessary protective factors for satisfaction with life but they are not sufficient. Our results suggest that only emotional repair is a necessary and sufficient condition because it refers to the act of actively managing emotions and moods. If we see this as a process rather than three independent dimensions at the same level, then the results might suggest that first it is important to pay attention to the emotions. Then it is important to discriminate well among feelings and then it is possible to potentially manage emotions repairing negative moods and maintaining and enhancing the positive ones. This idea is somewhat similar with Joseph and Newman's (2010) cascading model of EI in which different EI dimensions (emotion perception, emotion understanding and emotion regulation) are related in a progressive sequential pattern. Nevertheless, the results of our study do not allow making the conclusions in sequential terms. It would be necessary to test a mediated model to see if emotional attention and emotional clarity precede the ability to manage emotions, and act as preconditions for emotional repair in buffering the negative effects of perceived stress.

Several limitations of this study should be addressed in future research. First, a self-report TMMS-24 measures perceived EI and not actual EI abilities, as

mentioned earlier. Therefore, conclusions about the role of EI abilities for psychological well-being are limited. Future studies should use ability measures of EI to test the idea about the moderating role of EI in the stress-well-being relationship.

Second, the possible mechanisms behind EI and stress interaction in predicting well-being were not examined in the present study. As we suggested in the discussion, one possible explanation can be rumination, so future research should examine its role in this context. In addition, as already mentioned in the discussion, it would be useful to test Joseph and Newman's (2010) cascading model using the three specific dimensions of TMMS. A mediated model (with structural equations modeling, for instance) could explain whether these dimensions are organized in a sequential pattern, and whether this "process-focused" model could explain better the links between EI and psychological well-being. In addition, there is evidence that the effect different TMMS dimensions had on burnout was mediated through positive affect (Augusto-Landa, López-Zafra, Berrios-Martos, & Pulido-Martos, 2012) and that emotion regulation ability helps to maintain higher positive affect (Parke, Seo, & Sherf, 2015). Therefore, future studies should include positive (and negative) affect as possible mediators of the relationship between perceived stress, EI and well-being. Moreover, longitudinal data might help demonstrate this temporal sequentially.

Furthermore, the use of a cross-sectional design in this study brings certain restrictions about the interpretation of obtained correlations, since it is not possible to conclude about cause-effect aspect. Future research should longitudinally explore the mentioned relationships over time. In addition, the fact that only self-report questionnaires were used, common method bias may have influenced some of the obtained results.

Moreover, future studies should include more specific indicators for assessing life satisfaction. Life satisfaction scale used in the present study lacks specificity regarding life domains and it does not provide any information on the source of potential dissatisfaction. Future studies should include a more comprehensive measure of life satisfaction that includes satisfaction with family life, with social relationships or job satisfaction. Moreover, knowing that personality traits (especially extraversion and neuroticism) are very good predictors of life satisfaction (Baudin, Aluja, Rolland, & Blanch, 2011), future studies should control for personality traits in order to isolate the effects of stress and EI dimensions on satisfaction with life.

The investigation was conducted on a sample of university students, and the majority were women (68%). Some authors argue that gender and age might determine the differences in EI (Fernández-Berrocal, Cabello, Castillo, & Extremera, 2012), so future studies should be use more gender-balanced samples and samples of more age ranges.

Finally, it is noteworthy that the time of completing the questionnaires was not controlled in the present study. The fact that students are close to the exam period or not, can influence their levels of stress and psychological well-being. However, this limitation does not affect the central objective of the work, which is

to analyze the moderating role of EI in the relationship between stress and psychological well-being.

Although the premises about the impact of TMMS-24 dimensions on psychological well-being in stressful circumstances are partially supported, some conclusions for practical implications can be made. Knowing that even perceptions about own emotional abilities can buffer the effects of stress on well-being provides an important support for different intervention strategies or stress management programs for various target groups. These programs and intervention plans could focus on developing and improving emotional abilities related to perceiving, understanding and managing own emotions and can help in dealing with stressful events. Some previous studies already showed that different EI interventions can increase the level of EI and positively affect outcomes EI related outcomes (Schutte, Malouff, & Thorsteinsson, 2013).

Knowing that emotional repair can buffer negative effects of stress could be useful to develop different EI interventions in order to prevent negative consequences of the difficulties of the academic and every-day life. There is evidence that shows that students (from kindergarten through high school) who participated in different social-emotional learning (SEL) benefited from them in comparison with the students who didn't participate in them. These students significantly improved not only their emotional and social skills ( $d= 0,57$ ) and positive social behavior ( $d= 0,24$ ), but also their academic performance ( $d= 0,27$ ) (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Improving their emotional management abilities students could protect their well-being, which can be helpful for their academic success as well.

## References

- Atienza, F., Balaguer, I., & García-Merita, M. (2003). Satisfaction with life scale: Analysis of factorial invariance across sexes. *Personality and Individual Differences, 35*, 1255-1260.
- Augusto-Landa, J., López-Zafra, E., Berrios-Martos, M., & Pulido-Martos, M. (2012). Analyzing the relations among perceived emotional intelligence, affect balance and burnout. *Behavioral Psychology/Psicología Conductual, 20*, 151-168.
- Baudin, N., Aluja, A., Rolland, J., & Blanch, A. (2011). The role of personality in satisfaction with life and sport. *Behavioral Psychology/Psicología Conductual, 19*, 333-345.
- Bovier, P. A., Chamot, E., & Perneger, T. V. (2004). Perceived stress, internal resources, and social support as determinants of mental health among young adults. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation, 13*, 161-170.
- Buunk, B. P., De Jonge, J., Ybema, J. F. y De Wolff, C. J. (1998). Psychological aspects of occupational stress. In P. J. D. Drenth, H. Thierry, & C. J. De Wolff (Eds.), *Handbook of work and organizational psychology* (vol. 2, pp. 145-182). Hove, England: Psychology Press.
- Carmeli, A., Yitzhak-Halevy, M., & Weisberg, J. (2009). The relationship between emotional intelligence and psychological wellbeing. *Journal of Managerial Psychology, 24*, 66-78.
- Chang, E. C. (1998). Does dispositional optimism moderate the relation between perceived stress and psychological well-being? A preliminary investigation. *Personality and Individual Differences, 25*, 233-240.

- Ciarrochi, J., Deane, F., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences*, *32*, 197-209.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behaviour*, *24*, 385-396.
- Costa, H., Ripoll, P., Sánchez, M., Carvalho, C. (2013). Emotional intelligence and self-efficacy: Effects on psychological well-being in college students. *Spanish Journal of Psychology*, *16*, 1-9.
- Di Bernardi, C., Oliveira, S., Zarpellon, G., & Andrade, A. (2007). Versão brasileira da Escala de estresse percebido: Tradução e validação para idosos [Brazilian version of the Perceived Stress Scale: Translation and validation for the elderly]. *Revista de Saúde Pública*, *41*, 606-615.
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71-75.
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta analysis of school based universal interventions. *Child Development*, *82*, 405-432.
- Extremera, N., & Fernández-Berrocal, P. (2002). Relation of perceived emotional intelligence and health-related quality of life of middle-aged women. *Psychological Reports*, *91*, 47-59.
- 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. (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. (2009). The moderating effect of trait meta-mood and perceived stress on life satisfaction. *Personality and Individual Differences*, *47*, 116-121.
- Fernández-Berrocal, P., Cabello, R., Castillo, R., & Extremera, N. (2012). Gender differences in emotional intelligence: The mediating effect of age. *Behavioral Psychology/ Psicología Conductual*, *20*, 77-89.
- Fernández-Berrocal, P., Extremera, N., & Ramos, N. (2004). Validity and reliability of the Spanish modified version of the Trait Meta-Mood Scale. *Psychological Reports*, *94*, 751-755.
- Fernández-Berrocal, P., & Extremera, N. (2006). Emotional intelligence and emotional reactivity and recovery in laboratory context. *Psicothema*, *18*, 72-78.
- Fernández-Berrocal, P., Salovey, P., Vera, A., Extremera, N., & Ramos, N. (2005). Cultural influences on the relation between perceived emotional intelligence and depression. *Revue Internationale De Psychologie Sociale*, *18*, 91-107.
- Fernández, I., Carrera, P., Sánchez, F., Paez, D., & Candia, L. (2000). Differences between cultures in emotional and verbal and non-verbal reactions. *Psicothema*, *12*, 83-92.
- Folkman, S., & Moskowitz, J. (2000). Positive affect and the other side of coping. *American Psychologist*, *55*, 647-654.
- Gallagher, E.N., & Vella-Brodrick, D. A. (2008). Social support and emotional intelligence as predictors of subjective well-being. *Personality and Individual Differences* *44*, 1551-1561.
- Gohm C. L. (2003) Mood regulation and emotional intelligence: individual differences. *Journal of Personality Social Psychology*, *84*, 594-607.
- Goldberg, D. (1972). *The detection of psychiatric illness by questionnaire*. London: Oxford University Press.

- Hofstede G. (1991). *Cultures and organizations. Software of the mind*. London: McGraw-Hill.
- Houghton, J. D., Wu, J., Godwin, J. L., Neck, C. P., & Manz, C. C. (2012). Effective stress management: A model of emotional intelligence, self-leadership, and student stress coping. *Journal of Management Education* 36, 220-238
- IBM Corp. (2012). IBM SPSS Statistics v. 21.0 (programa de ordenador). Armonk, NY: IBM Corp.
- Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology*, 95, 54-78.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York, NY: Springer.
- Le Favre, M., Matheny, J., & Kolt, G. S. (2003). Eustress, distress, and interpretation in occupational stress. *Journal of managerial psychology*, 18, 726-744.
- Martins, A., Ramalho, N., & Morin, E. (2010). A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Personality and Individual Differences*, 49, 554-564.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. J. Sluyter (Eds.), *Emotional Development and Emotional Intelligence* (pp. 3-34). New York, NY: Basic Books.
- Mikolajczak, M., Luminet, O., & Menil, C. (2006). Predicting resistance to stress: Incremental validity of trait emotional intelligence over alexithymia and optimism. *Psicothema*, 18, 79-88.
- Montes-Berges, B., & Augusto, J. M. (2007). Exploring the relationship between perceived emotional intelligence, coping, social support and mental health in nursing students. *Journal of Psychiatric and Mental Health Nursing*, 14, 163-171.
- Neto, F. (1993). The Satisfaction with Life Scale: Psychometrics properties in an adolescent sample. *Journal of Youth and Adolescence*, 22, 125-34.
- Palmer, B., Donaldson, C., & Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences* 33, 1091-1100.
- Palomera, R., & Brackett, M. (2006). Frequency of positive affect as a possible mediator between perceived emotional intelligence and life satisfaction. *Ansiedad y Estrés*, 12, 231-239.
- Parke, M. R., Seo, M., & Sherf, E. N. (2015). Regulating and facilitating: The role of emotional intelligence in maintaining and using positive affect for creativity. *Journal of Applied Psychology*, 100, 917.
- Parslow, R. A., Jorm, A. F., Christensen, H., Rodgers, B., Strazdins, L., & D'Souza, R. M. (2004). The associations between work stress and mental health: A comparison of organizationally employed and self-employed workers. *Work & Stress*, 18, 231-244.
- Petrides, K. V., & Furnham, A. (2001). Trait emotional intelligence: Psychometric investigation with reference to established trait taxonomies. *European Journal of Personality*, 15, 425-448.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273-289.
- Queirós, M. M., Fernández-Berrocal, P., Extremera, N. Carral, J. M. C., & Queirós, P. S. (2005). Validação e fiabilidade da versão portuguesa modificada da Trait Meta-Mood Scale [Validity and reliability of the Portuguese version of the Trait Meta-Mood Scale]. *Psicologia, Educação e Cultura*, 9, 199-216.
- Ramos, N. S., Fernández-Berrocal, P., & Extremera, N. (2007). Perceived emotional intelligence facilitates cognitive-emotional processes of adaptation to an acute stressor. *Cognition and Emotion*, 21, 758-772.
- Remor, E. (2006). Psychometric Properties of a European Spanish Version of the Perceived Stress Scale (PSS). *The Spanish Journal of Psychology*, 9, 86-93.

- Rodríguez, I., Hontangas, P., Bravo, M. J., Grau, R., & Ramos, J. (1993). Bienestar psicológico [Psychological Well-Being]. In J. M. Peiró, F. Prieto, M. J. Bravo, P. Ripoll, I. Rodríguez, P. Hontangas, & M. Salanova (Eds.), *Los jóvenes ante el primer empleo. El significado del trabajo y su medida* [Youngsters in the first employment. The meaning of work and its measurement] (pp. 139-148). Valencia: Nau Llibres.
- Rodríguez, I., Bravo, M. J., Peiró, J. M., & Schaufeli, W. (2001). The Demands-control-support model and locus of control, and its effect on job dissatisfaction: A longitudinal study. *Work & Stress, 15*, 97-114.
- 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.
- Sarriera, J. C., Schwarcz, C., & Câmara, S. G. (1996). Bem-estar psicológico: Análise fatorial da escala de Goldberg (GHQ-12) numa amostra de jovens [Psychological well being: Goldberg's scale's (GHQ-12) factorial analysis in a young people]. *Psicologia: Reflexão e Crítica, 9*, 293-306.
- Schutte, N. S., Malouff, J. M., & Thorsteinsson, E. B. (2013). Increasing emotional intelligence through training: Current status and future directions. *International Journal of Emotional Education, 5*, 56-72.
- 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.

RECEIVED: June 1, 2015

ACCEPTED: November 11, 2015