Developmental Psychology
2016, Vol. 52, No. 9, 1486–1492

0012-1649/16/$12.00 http://dx.doi.org/10.1037/dev0000191

BRIEF REPORT

Age and Gender Differences in Ability Emotional Intelligence in Adults: A Cross-Sectional Study

Rosario Cabello
University of Granada

Miguel A. Sorrel
Autonomous University of Madrid

Irene Fernández-Pinto
TEA Ediciones, Madrid, Spain

Natalio Extremera and Pablo Fernández-Berrocal
University of Málaga

The goal of the current investigation was to analyze ability emotional intelligence (EI) in a large cross-sectional sample of Spanish adults (N = 12,198; males, 56.56%) aged from 17 to 76 years (M = 37.71, SD = 12.66). Using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), which measures ability EI according to the 4 branches of the Mayer and Salovey EI model. The authors examined effects of gender on ability EI, as well as the linear and quadratic effects of age. Results suggest that gender affects the total ability EI score as well as scores on the 4 EI branches. Ability EI was greater in women than men. Ability EI varied with age according to an inverted-U curve: Younger and older adults scored lower on ability EI than middle-aged adults, except for the branch of understanding emotions. These findings strongly support the idea that both gender and age significantly influence ability EI during aging.

Keywords: age differences, gender, ability emotional intelligence, adult life span, emotional development

Several emotional functions have been shown to vary with age, including positive and negative affect (Grühn, Kotter-Grühn, & Röcke, 2010); shame, guilt, and pride (Orth, Robins, & Soto, 2010); and empathic concern and perspective-taking (O'Brien, Konrath, Grühn, & Hagen, 2013). This suggests that ability emotional intelligence (EI) may also vary with age, yet previous research is limited and not very consistent, particularly in adults. Therefore we sought to examine how ability EI may vary across the adult life span.

Ability EI is defined as the integration of several emotional abilities: 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). The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002) is the test of ability EI in adults that is used most widely among researchers. It assesses each of the four abilities ("branches") of perceiving emotions, facilitating thought, understanding emotions, and managing emotions. The test works by assessing the respondent's ability to solve emotional problems for each of four emotion skills (Mayer, Salovey, Caruso, & Sitarenios, 2003). Numerous studies over the last quarter-century have positively related ability EI to diverse spheres of daily life, including mental and physical health, social functioning, and academic and workplace performance (e.g., Ashkanasy & Daus, 2005; Brackett, Rivers, & Salovey, 2011; Mayer, Roberts, & Barsade, 2008; O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011). Similar results have been reported in Spanish populations (Fernández-Berrocal, Cabello, Castillo, & Extremera, 2012).

EI theory predicts that ability EI develops with age and accumulation of life experience (Mayer, Caruso, & Salovey, 1999; Salovey & Sluyter, 1997). In fact, developmental psychologists have described developmental milestones and trajectories for EI dimensions from infancy to adolescence, and they have traced how these emotional abilities emerge over time as a person develops in a social context (e.g., Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Eisenberg, Spinrad, & Eggum, 2010; Saarni, 1999). On the other hand, studies of adolescents based on self-report EI measures have given inconsistent results about how self-report EI

Rosario Cabello, Department of Developmental and Educational Psychology, University of Granada; Miguel A. Sorrel, Department of Social Psychology and Methodology, Autonomous University of Madrid; Irene Fernández-Pinto, TEA Ediciones, Madrid, Spain; Natalio Extremera, Department of Social Psychology, University of Málaga; Pablo Fernández-Berrocal, Department of Basic Psychology, University of Málaga.

This research was supported in part by projects Innovation and Development Agency of Andalusia, Spain (SEJ-07325), and the Spanish Ministry of Economy (PSI2012-37490 and PSI2012-38813). This research was possible only because of the data and support provided by TEA Ediciones.

Correspondence concerning this article should be addressed to Rosario Cabello, Department of Developmental and Educational Psychology, University of Granada, Campus Universitario de Cartuja s/n, Granada 18071, Spain. E-mail: rcabello@ugr.es

dimensions vary with age (Keefer, Holden, & Parker, 2013; Parker et al., 2005; Tett, Fox, & Wang, 2005). One longitudinal study from late childhood to adolescence showed that changes in self-report EI levels followed a complex, nonlinear pattern of decreases, increases, and plateaus; the pattern varied with age and the self-report EI dimensions being analyzed (Keefer et al., 2013). A cross-sectional study of early adolescence based on ability EI measure found that scores increased to some extent with age, after which they plateaued and may have even decreased in older adolescents (Rivers et al., 2012).

Similarly, studies examining specific branches of EI ability with age have reported inconsistent results in adults. Some studies have found significant associations between age and all ability EI branches (Extremera, Fernández-Berrocal, & Salovey, 2006; Mayer et al., 1999), consistent with the theory that cognitive development and cumulative life experience causes ability EI to increase with age (Mayer et al., 1999; Salovey & Sluyter, 1997). Other studies suggest a more nuanced association between age and ability EI, reporting significantly higher ability EI in older adults in all branches except perceiving emotions or facilitating thought (Fernández-Berrocal et al., 2012; Goldenberg, Matheson, & Mantler, 2006; Kafetsios, 2004). Still other studies have found no significant association between age and any ability EI branches (Farrelly & Austin, 2007; Webb et al., 2013), while some have even reported a negative correlation between age and perceiving emotions (Day & Carroll, 2004; Palmer, Gignac, Manocha, & Stough, 2005). These studies relied on samples mostly of university students, with average ages below 30 years. A study involving a broader age range (average, 42 years) found that age was associated negatively with total ability EI and with all EI branches except managing emotions (Cabello, Navarro Bravo, Latorre, & Fernández-Berrocal, 2014). Though effect sizes were small, the results suggest that older adults show lower ability EI than younger ones, and that this age-related decline may reflect age-related decline of cognitive function, as reported for other intelligences (Bisiacchi, Borella, Bergamaschi, Carretti, & Mondini, 2008; Kievit et al., 2014; Salthouse, Fristoe, & Rhee, 1996). Numerous studies have suggested that some factors such as lifestyle and educational history protect against age-related cognitive decline (reviewed in Baumgart et al., 2015), further complicating the design and interpretation of studies on the effects of age on ability EI.

Apart from sample characteristics, another explanation for the divergent findings about effects of age on ability EI is the modeling approach. To our knowledge, all previous reports on this topic have analyzed possible linear effects of age, but not potential quadratic effects. This is important to investigate, especially because age exerts quadratic effects on other emotional constructs such as empathy (O'Brien et al., 2013).

Studies of ability EI that include gender in their analysis have reported women to have greater ability EI (e.g., Brackett & Mayer, 2003; Ciarrochi, Chan, & Caputi, 2000; Day & Carroll, 2004; Extremera et al., 2006; Farrelly & Austin, 2007; Goldenberg et al., 2006; Mayer et al., 1999; McIntyre, 2010; Palmer et al., 2005). Nevertheless, the magnitude of the effect size based on individual studies ranges from small (e.g., Cabello & Fernández-Berrocal, 2015; Fernández-Berrocal et al., 2012; Lumley, Gustavson, Partridge, & Labouvie-vief, 2005) to medium (e.g., Farrelly & Austin, 2007; Palmer et al., 2005). In addition, several studies suggest that this gender effect applies only to some of the four EI branches (Fernández-Berrocal et al., 2012; Kafetsios, 2004). However, a meta-analysis of studies involving 30,077 people showed higher ability EI for women across all EI branches as well as for total ability EI; the effect size ranged from .29 to .49 (Joseph & Newman, 2010). Thus the available evidence suggests that women show higher ability EI scores on the MSCEIT.

Current Study

Our research objective was to analyze ability EI in a large sample of Spanish adults as a function of gender and age. Specifically, we used the MSCEIT to investigate the effects of gender and the linear and quadratic effects of age on all four branches of ability EI as well as on total EI. We designed the study, in line with previous research, with the following hypotheses:

Hypothesis 1: Women will score higher than men for total ability EI and for each of the four branches of ability EI.

Hypothesis 2: Younger and older adults will show lower scores than middle-age adults for total ability EI and for each of the four branches of ability EI, resulting in an inverted-U curve pattern across the adult life span.

Method

Participants and Procedure

Our sample was 12,198 Spanish adults aged 17 to 76 years (M = 37.71, SD = 12.66), of whom 56.56% were men. The distribution of the interaction between age and gender is shown in Table 1. The dataset of basic participant demographic characteristics and scores on the Spanish MSCEIT were collected by TEA Ediciones (Madrid, Spain) from 2008 until the start of this study in 2013. TEA Ediciones is the Spanish publisher authorized to adapt and commercialize the Spanish version of the MSCEIT. The sample was recruited by universities, mental health centers and other clinical and research institutions in Spain and was invited to participate in the testing through various social-networking and informal advertising channels. None of the participants received financial or other compensation for taking the test. They were told that they would receive feedback about their scores. Participants gave TEA Ediciones permission to store their data anonymously and use it for research purposes. The study was carried out in accordance with

Table 1
Distribution of the Interaction Between Age and Gender in the Sample

	Gender		
Age group	Men	Women	Total
Younger	1,815	2,373	4,188
Middle	2,589	1,465	4,054
Older	2,495	1,461	3,956
Total	6,899	5,299	12,198

Note. Younger = 17–31 years old; Middle = 32–44 years old; Older = 45–76 years old.

the Declaration of Helsinki, and it was approved by the Research Ethics Committee of TEA Ediciones.

Respondents in the TEA Ediciones MSCEIT database were selected for the present study such that the sample would show a broad, balanced distribution of gender, age, and socioeconomic status. Respondents were not accepted if they were younger than 17 years or if they had any physical or psychological condition that would compromise their ability to fill out the MSCEIT. Data were collected over six consecutive years with the help of a team of research assistants from TEA Ediciones. Because data were not collected specifically for the purposes of the present study, we had access only to basic demographic data on respondents, which did not include other relevant information as socioeconomic data or educational level. All procedures and responses were in Spanish.

Measures

Participants completed the Spanish adaptation of the MSCEIT v. 2.0 (Extremera & Fernández-Berrocal, 2009; Mayer et al., 2002). The MSCEIT is an ability-based test of EI designed to measure the four branches of the Mayer and Salovey EI model (perceiving emotions, facilitating thought, understanding emotions, and managing emotions). MSCEIT consists of 141 items and takes 30–45 min to complete. MSCEIT provides 15 main scores: total EI score, two area scores, four branch scores, and eight task scores. These scores can be calculated based on expert or consensus norms: both types of norms strongly correlate with each other ($r > .90$; Mayer et al., 2003), and reliability between the two ranges from .76 to .91 for each of the four branches (Mayer et al., 2003). In the present study, we used consensus norms to calculate scores for total ability EI and for each of the four branches.

The MSCEIT Spanish adaptation shows adequate psychometric properties, similar to those obtained for the original instrument. For the scales used in the present study, internal consistency ranged from .76 to .95. This consistency was measured as Cronbach's alpha in the case of total EI score, and as two-halves consistency in the case of the remaining scores. Confirmatory analysis of the four-branches model showed reasonable goodness of fit (GFI = .98; CFI = .97; RMSEA = .07).

Statistical Analysis

All analyses were carried out using SPSS 19.0. To test for gender effects in measured MSCEIT scores, we conducted Student's t test for independent samples. Given the large sample size of the study, which increases the risk of obtaining significant p values for differences that are negligible in practice, we reported not only p values but also Cohen's d to assess effect size (Cohen, 1992). Based on Cohen's original recommendation, we interpreted $d = .20$ as a small effect size; $d = .50$ as a medium effect size; and $d = .80$ as a large effect size.

To identify significant effects of age and gender on ability EI, we created linear regression models for each of the branch scores and for total EI score. In all models, gender and age were independent variables, whereas the total or branch EI score was the dependent variable. Gender was dummy-coded, and women served as the reference group. Age was centered to allow the intercept to be interpreted as the expected value of Y_i when predictor values were set to their means. We also included a quadratic term for age to test our hypothesis that younger and older adults would show lower ability EI than middle-aged ones (inverted-U curve). We conducted regressions in a hierarchical way, first entering gender, followed by both age and age-squared. We studied the change in the proportion of explained variance (R^2) and the relative importance of each variable in the model using squared semipartial correlation analysis. Finally, we tested whether there was a significant effect due to interaction between age and gender by including an interaction term in the multiple regression models.

Results

Table 2 shows internal consistency, descriptive statistics and results of Student's t test. Mean scores for ability EI were significantly higher for women than for men, and the older age group (45–76 years) scored significantly higher than the younger age group (17–31 years). Based on Cohen's (1992) criteria, effect size was small for perceiving emotions, facilitating thought and managing emotions, but moderate for understanding emotions and total EI score. These results are consistent with H1.

Results of the final regression models are reported in Table 3. Similar findings were obtained for the each of the four branches

Table 2
Internal Consistency, Descriptive Statistics, Gender, and Age Differences in Ability Emotional Intelligence Evaluated Using the Spanish MSCEIT

Ability EI	Internal consistency[a]	All		Men		Women		Younger		Middle		Older		Gender d [b]	Age d [b, c]
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Perceiving emotions	.91	102.59	14.50	100.96	14.63	104.72	14.04	103.47	13.32	103.47	14.40	100.77	15.58	−.26	−.19
Facilitating thought	.72	96.53	11.68	95.03	11.89	98.48	11.11	97.06	10.67	97.27	11.63	95.20	12.62	−.30	−.16
Understanding emotions	.76	97.75	13.07	95.78	12.61	100.32	13.20	100.78	12.95	97.79	13.01	94.50	12.45	−.35	−.49
Managing emotions	.78	102.27	14.02	100.61	14.10	104.43	13.63	102.40	13.41	104.29	14.08	100.06	14.28	−.27	−.17
Total EI score	.92	99.61	12.82	97.37	12.62	102.52	12.49	101.11	11.84	100.76	12.87	96.83	13.31	−.41	−.34

[a] Internal consistency was assessed using the two-halves procedure in the case of the four branch scores, while it was assessed using Cronbach's alpha in the case of total emotional intelligence (EI) score. This is the same procedure used during the original MSCEIT adaptation studies. [b] The t tests for equality of means were statistically significant. Equal variances were not assumed since Levene's tests were statistically significant. [c] Standardized differences between older and younger age groups. Younger = 17–31 years old; Middle = 32–44 years old; Older = 45–76 years old.

Table 3
Regression Analysis Relating Scores for Total Ability Emotional Intelligence (EI) and for Ability EI Branches to Gender and Age

	Ability EI score/subscore														
	Perceiving emotions (adjusted R^2 = .02)			Facilitating thought (adjusted R^2 = .03)			Understanding emotions (adjusted R^2 = .06)			Managing emotions[a] (adjusted R^2 = .05)			Total EI score (adjusted R^2 = .06)		
Predictor	*B*	*SE*	*Beta*	*B*	*SE*	*Beta*	*B*	*SE*	*Beta*	*B*	*SE*	*Beta*	*B*	*SE*	*Beta*
Intercept	105.46	.25		99.43	.20		100.12	.22		106.86	.23		103.75	.21	
Male	−3.73	.27	−.13**	−3.60	.22	−.15**	−3.81	.24	−.15**	−4.42	.26	−.16**	−5.13	.23	−.20**
Age	−.04	.01	−.03**	−.03	.01	−.03**	−.19	.01	−.18**	−.02	.01	−.02	−.10	.01	−.10**
Age-squared	−.00	.00	−.05**	−.01	.00	−.08**	.00	.00	−.02*	−.01	.00	−.17**	−.01	.00	−.11**
Male × Age	−.05	.02	−.03*												

[a] After removing age, intercept = 106.95, B_{male} = −4.51, and $B_{age\text{-}squared}$ = −.01.
* *p* value < .05. ** *p* value < .01.

of ability EI. In the first step, gender was a significant predictor, indicating that women showed higher scores than men. This effect was relatively small in all four branches, which showed the following values of adjusted R^2 (and significant $Beta_{male}$ values): perceiving emotions, .02 (−.13); facilitating thought, .02 (−.15); understanding emotions, .03 (−.17); and managing emotions = .02 (−.14). In the second step, we entered the variables age and age-squared. Age exerted a significant linear effect on scores for perceiving emotions, facilitating thought and understanding emotions, with younger people showing higher scores for these branches than older people. This linear effect was overshadowed by a stronger effect of age-squared on all branches except understanding emotions. These results are consistent with H2.

The linear effects of age over and above the effects of gender were small but consistent for the three branches of perceiving emotions (adjusted ΔR^2 = .01), facilitating thought (.01) and understanding emotions (.03). In contrast, age did not exert a significant linear effect on the EI score for managing emotions. Therefore we removed this variable from the model and repeated the analysis. The proportion of variance explained changed negligibly ($R^2_{\text{three predictors}}$ = .05, $R^2_{\text{two predictors}}$ = .05), as did the intercept ($Intercept_{\text{two predictors}}$ = 106.95). The beta coefficients also remained significant ($Beta_{male}$ = −.16, $Beta_{age\text{-}squared}$ = −.17).

Consistent with the results for total ability EI score in Table 2, regression analysis confirmed that gender was a significant predictor of total ability EI score (adjusted R^2 = .04, $Beta_{male}$ = −.20). This supports H1. Including age and age-squared in the second modeling step slightly increased the variance explained (ΔR^2 = .03). Similar to what we observed for each of the four branches, the linear effect of age on total ability EI score ($Beta_{age}$ = −.10) was overshadowed by a greater effect of age-squared ($Beta_{age\text{-}squared}$ = −.11). These results support H2.

Zero-order and semipartial correlations are shown in Table 4. Semipartial correlation (squared) assesses the contribution of each variable to the model; in other words, it quantifies the relationship between a given predictor and the dependent variables after removing the contributions of other predictors. This analysis showed gender to be the most important predictor of total ability EI score and scores for perceiving emotions and facilitating thought. In contrast, age was the most important predictor of the score for understanding emotions, whereas age-squared was the most important predictor of the score for managing emotions.

Finally, we tested the interaction effect of age and gender by including this variable in the model. The interaction effect was significant only in the case of perceiving emotions ($Beta_{age\text{-}squared} * male$ = −.03, *p* value = .02). This suggests that the strength of the relationship between perceiving emotions and age changes as a function of gender. In our population, the correlation between these two variables was slightly stronger for males than for females (−.08 vs. −.04). This implies that the age-related decrease in EI score for perceiving emotion is more pronounced among males. Figure 1 summarizes the effects of gender and age on MSCEIT scores in our sample of Spanish adults; it depicts the estimated MSCEIT scores from the final regression equations shown in Table 3.

Table 4
Zero-Order and Semipartial Correlations for Each Predictor and Dependent Variable

	Ability EI score/subscore (dependent variable)									
	Perceiving emotions		Facilitating thought		Understanding emotions		Managing emotions[a]		Total EI score	
Predictor	Zero-order	Semipartial	Zero-order	Semipartial	Zero-order	Semipartial	Zero-order	Semipartial	Zero-order	Semipartial
Male	−.13**	−.12**	−.15**	−.15**	−.17**	−.14**	−.14**	−.16**	−.20**	−.19**
Age	−.08**	−.05**	−.07**	−.03**	−.21**	−.18**			−.15**	−.09**
Age-squared	−.05**	−.06**	−.07**	−.08**	−.03**	−.02*	−.15**	−.17**	−.10**	−.11**

Note. EI = emotional intelligence.
[a] Age was removed from the model.
* *p* value < .05. ** *p* value < .01.

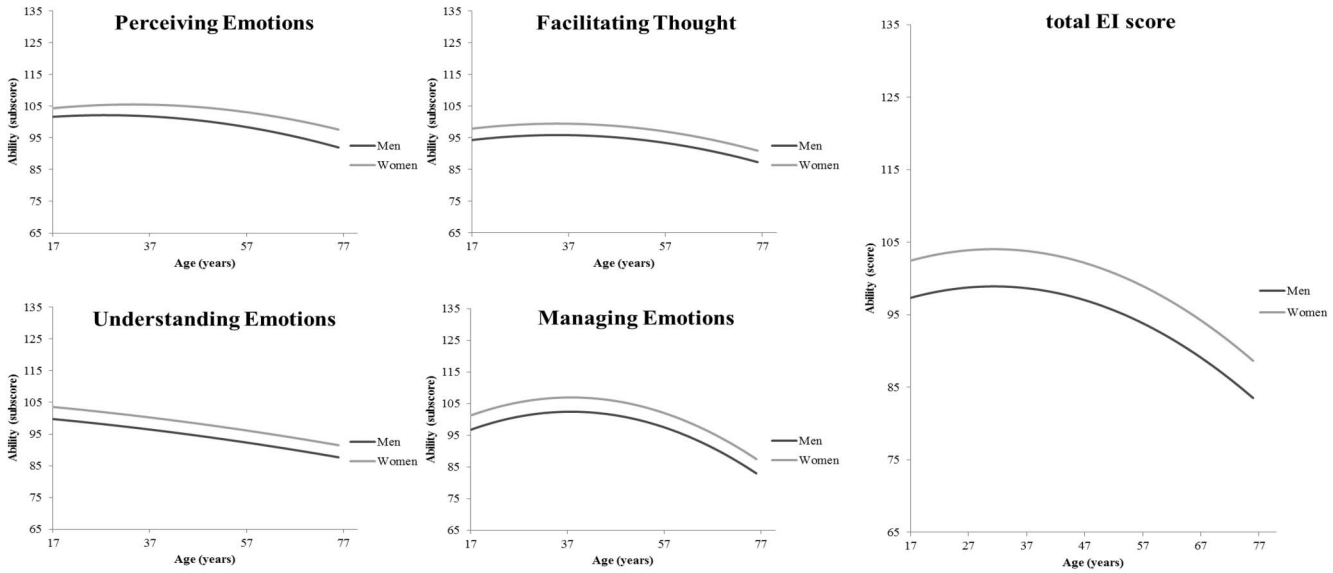

Figure 1. Estimated age trajectories of scores for total ability emotional intelligence (EI) and for the four EI branches (perceiving emotions, facilitating thought, understanding emotions, and managing emotions) in men and women.

Discussion

This study of 12,198 Spanish adults provides evidence supporting an effect of gender and both linear and quadratic effects of age on ability EI, as measured using the MSCEIT. Our results suggest that women score significantly higher than men on total ability EI, as well as on ability EI as it relates to each of the four branches of perceiving emotions, facilitating thought, understanding emotions, and managing emotions. These findings are consistent with H1 and with smaller studies conducted in Spain and other countries (Cabello & Fernández-Berrocal, 2015; Day & Carroll, 2004; Joseph & Newman, 2010; Lumley et al., 2005; Palmer et al., 2005). Independently of the effect of age on ability EI, gender exerted a significant effect on ability EI at all adult ages. In fact, gender made a larger contribution than age to total ability EI score and to scores for the branches of perceiving and facilitating emotions. The interaction between gender and age was significant only in the case of perceiving emotions.

Our results about the effects of age on ability EI may provide clearer insights in the face of an inconclusive literature (Farrelly & Austin, 2007; Goldenberg et al., 2006; Mayer et al., 1999; Webb et al., 2013). This inconsistency is likely to be due, at least in part, to the use of relatively young undergraduate students as convenience samples or the use of samples with a narrow age range. It may also be due to the fact that previous studies looked for only linear effects of age on ability EI. Here we analyzed a large sample of adults with a broad age range from 17 to 76 years, and we tested for the presence of both linear and quadratic effects of age on ability EI. We found that, consistent with H2, younger and older adults showed lower scores than middle-age adults for total ability EI and for each of the four branches of ability EI, resulting in an inverted-U curve pattern across the adult life span. We further found that the linear effect of age was overshadowed by a greater quadratic effect (age-squared) for all branches of ability EI except understanding emotions, for which the linear effect was greater. These findings significantly extend and nuance the results of Cabello et al. (2014), who analyzed a sample ($N = 310$) with a broad age range from 18 to 76 years. They identified a linear, negative effect of age on total ability EI and all EI branches except managing emotions. Our results with a larger sample suggest that age exerts an inverted-U effect on ability EI, rather than a simple linear relationship. These findings should be verified in large samples from other ethnic groups.

Our findings strongly suggest that both gender and age affect ability EI throughout the adult life span. Our results suggest that women score higher than men on ability EI. They also suggest that middle-aged adults score higher than other adults (inverted-U curve) for all branches of ability EI except understanding emotions, for which ability EI decreases progressively with increasing age. These results help clarify discrepancies among previous studies of how age affects ability EI. Overall, our results support the predictions of EI theory (Mayer et al., 1999; Salovey & Sluyter, 1997) and findings from studies on empathy and age (O'Brien et al., 2013) that increasing cognitive ability and life experience facilitate emotional functioning in the first half of adult life, peaking in middle adulthood. Although our results do not allow determination of causality, they are consistent with the notion that age-related decline in cognitive functions leads to lower ability EI in older adults, as reported for other intelligences (Bisiacchi et al., 2008; Kievit et al., 2014; Salthouse et al., 1996).

Conclusions from the present study are subject to four important caveats. First, the influence of gender and age on ability EI was significant but showed small size effects. Second, because only limited data on study participants were available, we could not explore possible effects of other relevant factors such as lifestyle, implicit theories or educational background, which may help explain differences among individuals as well as protect against

cognitive and emotional decline (Baumgart et al., 2015; Cabello & Fernández-Berrocal, 2015; Cabello et al., 2014). Future studies should take these factors into account to provide a complete picture of the development of ability EI across the adult life span. Third, all our participants were Spanish Caucasian, raising the question of whether our results would be similar in other social and cultural contexts. Fourth, the observed quadratic effect of age on ability EI should be verified in a cohort study, since cross-sectional analysis can only approximate real aging trajectories.

Future interventional studies should examine whether training programs based on ability EI can moderate age-related decline in EI and promote healthy aging. Additional studies may help clarify how age and gender interact with EI to influence several domains of daily life, including health, well-being, and performance at school and in the workplace.

References

Ashkanasy, N. M., & Daus, C. S. (2005). Rumors of the death of emotional intelligence in organizational behavior are vastly exaggerated. *Journal of Organizational Behavior, 26,* 441–452. http://dx.doi.org/10.1002/job.320

Baumgart, M., Snyder, H. M., Carrillo, M. C., Fazio, S., Kim, H., & Johns, H. (2015). Summary of the evidence on modifiable risk factors for cognitive decline and dementia: A population-based perspective. *Alzheimer's & Dementia: The Journal of the Alzheimer's Association, 11,* 718–726. http://dx.doi.org/10.1016/j.jalz.2015.05.016

Bisiacchi, P. S., Borella, E., Bergamaschi, S., Carretti, B., & Mondini, S. (2008). Interplay between memory and executive functions in normal and pathological aging. *Journal of Clinical and Experimental Neuropsychology, 30,* 723–733. http://dx.doi.org/10.1080/13803390701689587

Brackett, M. A., & Mayer, J. D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin, 29,* 1147–1158. http://dx.doi.org/10.1177/0146167203254596

Brackett, M. A., Rivers, S. E., & Salovey, P. (2011). Emotional intelligence: Implications for personal, social, academic, and workplace success. *Social and Personality Psychology Compass, 5,* 88–103. http://dx.doi.org/10.1111/j.1751-9004.2010.00334.x

Cabello, R., & Fernández-Berrocal, P. (2015). Implicit theories and ability emotional intelligence. *Frontiers in Psychology, 6,* 700. http://dx.doi.org/10.3389/fpsyg.2015.00700

Cabello, R., Navarro Bravo, B., Latorre, J. M., & Fernández-Berrocal, P. (2014). Ability of university-level education to prevent age-related decline in emotional intelligence. *Frontiers in Aging Neuroscience, 6,* 37. http://dx.doi.org/10.3389/fnagi.2014.00037

Ciarrochi, J. V., Chan, A. Y. C., & Caputi, P. (2000). A critical evaluation of the emotional intelligence construct. *Personality and Individual Differences, 28,* 539–561. http://dx.doi.org/10.1016/S0191-8869(99)00119-1

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155–159. http://dx.doi.org/10.1037/0033-2909.112.1.155

Day, A. L., & Carroll, S. A. (2004). Using an ability-based measure of emotional intelligence to predict individual performance, group performance, and group citizenship behaviours. *Personality and Individual Differences, 36,* 1443–1458. http://dx.doi.org/10.1016/S0191-8869(03)00240-X

Denham, S. A., Wyatt, T. M., Bassett, H. H., Echeverria, D., & Knox, S. S. (2009). Assessing social-emotional development in children from a longitudinal perspective. *Journal of Epidemiology and Community Health, 63*(Suppl. 1), i37–i52. http://dx.doi.org/10.1136/jech.2007.070797

Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual Review of Clinical Psychology, 6,* 495–525. http://dx.doi.org/10.1146/annurev.clinpsy.121208.131208

Extremera, N., & Fernández-Berrocal, P. (2009). *MSCEIT, Test de Inteligencia Emocional de Mayer-Salovey-Caruso*. Madrid, Spain: TEA Ediciones.

Extremera, N., Fernández-Berrocal, P., & Salovey, P. (2006). Spanish version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) Version 2.0: Reliabilities, age and gender differences. *Psicothema, 18*(Suppl.), 42–48.

Farrelly, D., & Austin, E. J. (2007). Ability EI as an intelligence? Associations of the MSCEIT with performance on emotion processing and social tasks and with cognitive ability. *Cognition and Emotion, 21,* 1043–1063. http://dx.doi.org/10.1080/02699930601069404

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.

Goldenberg, I., Matheson, K., & Mantler, J. (2006). The assessment of emotional intelligence: A comparison of performance-based and self-report methodologies. *Journal of Personality Assessment, 86,* 33–45. http://dx.doi.org/10.1207/s15327752jpa8601_05

Grühn, D., Kotter-Grühn, D., & Röcke, C. (2010). Discrete affects across the adult lifespan: Evidence for multidimensionality and multidirectionality of affective experiences in young, middle-aged and older adults. *Journal of Research in Personality, 44,* 492–500. http://dx.doi.org/10.1016/j.jrp.2010.06.003

Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: An integrative meta-analysis and cascading model. *Journal of Applied Psychology, 95,* 54–78. http://dx.doi.org/10.1037/a0017286

Kafetsios, K. (2004). Attachment and emotional intelligence abilities across the life course. *Personality and Individual Differences, 37,* 129–145. http://dx.doi.org/10.1016/j.paid.2003.08.006

Keefer, K. V., Holden, R. R., & Parker, J. D. A. (2013). Longitudinal assessment of trait emotional intelligence: Measurement invariance and construct continuity from late childhood to adolescence. *Psychological Assessment, 25,* 1255–1272. http://dx.doi.org/10.1037/a0033903

Kievit, R. A., Davis, S. W., Mitchell, D. J., Taylor, J. R., Duncan, J., Tyler, L. K., . . . Henson, R. N. A. (2014). Distinct aspects of frontal lobe structure mediate age-related differences in fluid intelligence and multitasking. *Nature Communications, 5,* 5658. http://dx.doi.org/10.1038/ncomms6658

Lumley, M. A., Gustavson, B. J., Partridge, R. T., & Labouvie-Vief, G. (2005). Assessing alexithymia and related emotional ability constructs using multiple methods: Interrelationships among measures. *Emotion, 5,* 329–342. http://dx.doi.org/10.1037/1528-3542.5.3.329

Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27,* 267–298. http://dx.doi.org/10.1016/S0160-2896(99)00016-1

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59,* 507–536. http://dx.doi.org/10.1146/annurev.psych.59.103006.093646

Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Implications for educators* (pp. 3–31). New York, NY: Basic Books.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2002). *The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), Version 2.0*. Toronto, Canada: Multi-Health Systems.

Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion, 3,* 97–105. http://dx.doi.org/10.1037/1528-3542.3.1.97

McIntyre, H. H. (2010). Gender differences in the nature and linkage of higher-order personality factors to trait and ability emotional intelligence. *Personality and Individual Differences, 48,* 617–622. http://dx.doi.org/10.1016/j.paid.2009.12.019

O'Boyle, E. H., Jr., Humphrey, R. H., Pollack, J. M., Hawver, T. H., & Story, P. (2011). The relation between emotional intelligence and job performance: A meta-analysis. *Journal of Organizational Behavior, 32,* 788–818. http://dx.doi.org/10.1002/job.714

O'Brien, E., Konrath, S. H., Grühn, D., & Hagen, A. L. (2013). Empathic concern and perspective taking: Linear and quadratic effects of age across the adult life span. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 68,* 168–175. http://dx.doi.org/10.1093/geronb/gbs055

Orth, U., Robins, R. W., & Soto, C. J. (2010). Tracking the trajectory of shame, guilt, and pride across the life span. *Journal of Personality and Social Psychology, 99,* 1061–1071. http://dx.doi.org/10.1037/a0021342

Palmer, B. R., Gignac, G., Manocha, R., & Stough, C. (2005). A psychometric evaluation of the Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0. *Intelligence, 33,* 285–305. http://dx.doi.org/10.1016/j.intell.2004.11.003

Parker, J. D. A., Saklofske, D. H., Shaughnessy, P. A., Huang, S. H. S., Wood, L. M., & Eastabrook, J. M. (2005). Generalizability of the emotional intelligence construct: A cross-cultural study of North American aboriginal youth. *Personality and Individual Differences, 39,* 215–227. http://dx.doi.org/10.1016/j.paid.2005.01.008

Rivers, S. E., Brackett, M. A., Reyes, M. R., Mayer, J. D., Caruso, D. R., & Salovey, P. (2012). Measuring emotional intelligence in early adolescence with the MSCEIT-YV: Psychometric properties and relationship with academic performance and psychosocial functioning. *Journal of Psychoeducational Assessment, 30,* 344–366. http://dx.doi.org/10.1177/0734282912449443

Saarni, C. (1999). *The development of emotional competence*. New York, NY: Guilford Press.

Salovey, P., & Sluyter, D. (Eds.). (1997). *Emotional development and emotional intelligence: Implications for educators*. New York, NY: Basic Books.

Salthouse, T. A., Fristoe, N., & Rhee, S. H. (1996). How localized are age-related effects on neuropsychological measures? *Neuropsychology, 10,* 272–285. http://dx.doi.org/10.1037/0894-4105.10.2.272

Tett, R. P., Fox, K. E., & Wang, A. (2005). Development and validation of a self-report measure of emotional intelligence as a multidimensional trait domain. *Personality and Social Psychology Bulletin, 31,* 859–888. http://dx.doi.org/10.1177/0146167204272860

Webb, C. A., Schwab, Z. J., Weber, M., DelDonno, S., Kipman, M., Weiner, M. R., & Killgore, W. D. S. (2013). Convergent and divergent validity of integrative versus mixed model measures of emotional intelligence. *Intelligence, 41,* 149–156. http://dx.doi.org/10.1016/j.intell.2013.01.004

Received August 9, 2015
Revision received May 19, 2016
Accepted June 21, 2016 ■