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RELATION OF PERCEIVED EMOTIONAL INTELLIGENCE AND HEALTH-RELATED QUALITY OF LIFE OF MIDDLE-AGED WOMEN[1]

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Summary.—This study examined the relationship between perceived emotional intelligence and health-related quality of life in middle-aged women. 99 middle-aged Spanish women, who studied in two adult schools, volunteered to participate. 49 were premenopausal and 45 were postmenopausal. These women completed the Trait Meta-Mood Scale and Health Survey SF–36. Scores were analyzed according to social, physical, and mental health, menopausal status, and scores on perceived emotional intelligence. Then, the data regarding the mental and physical health of the premenopausal and postmenopausal women were compared after controlling for age. No associations between menopausal status and health-related quality of life were found. Perceived skill at mood repair was significantly associated with scores on health-related quality of life in these middle-aged women. These findings provide empirical evidence that aspects of perceived emotional intelligence may account for the health-related quality of life in midlife including social, physical, and psychological symptoms.

During middle age and menopause, women have been viewed as being vulnerable to depression, anxiety, anger, and other psychological distress. Two perspectives have been developed to explain this increase in depression and other related symptoms at this stage of life (Huffman & Myers, 1999). On one hand, most research and literature related to middle-age and menopause have been generated from a biomedical paradigm (Gannon & Ekstrom, 1993; Rostosky & Travis, 1996). From this approach, menopause is viewed as a physiological event, which implicates the decline in ovarian hormones and emphasizes symptomatology. The behavioural science paradigms, in contrast, involve the importance of cultural and psychosocial factors and associate emotional and cognitive traits with sex roles and with the possibility of menopausal transition being a time of stress and changes in the way a woman views herself, her family, and the social environment (Bromberger & Matthews, 1994, 1996a, 1996b; Dennerstein, Smith, & Morse, 1994). These perspectives may be complementary (Carolan, 1994; Huffman & Myers, 1999).

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In this paper, the behavioral approach was addressed. Some studies have shown that certain personality characteristics such as high self-consciousness, high suppression of anger, low optimism, and low instrumentality are associated with elevated depressive symptoms in women during midlife (Bromberger & Matthews, 1996a, 1996b). Indeed, several prospective studies have shown that psychosocial factors were the main predictors of depression during menopause when no changes were found on the well-being factors for differing menopausal status (Matthews, Wing, Kuller, Meilahn, Kelsey, Costello, & Caggiula, 1990; Busch, Zonderman, & Costa, 1994; Dennerstein, 1996).

In the present study, the influence of perceived emotional intelligence on health-related quality of life in middle-aged women was examined. Emotional intelligence has been used in various ways in popular and academic approaches. There now are two general models of emotional intelligence: a mixed model that combines several personality dispositions (optimism, motivation, or mood) with mental abilities (Goleman, 1995, 1998; Bar-On, 1997) and a mental ability model in which emotional intelligence is composed of mental abilities, skills, or capacities. In particular, from this latter perspective, emotional intelligence is defined as the capacity to process emotional information accurately and efficiently, including the capacity to perceive, assimilate, understand, and manage emotions (Mayer & Salovey, 1997; Mayer, Caruso, & Salovey, 1999).

Although skill-based measures such as the Mayer-Salovey-Caruso Emotional Intelligence Test (and its precursor, the Multifactor Emotional Intelligence Test) have been recently developed and may be very useful in the study of human emotional abilities; however, they are still being refined. For this reason studies of emotional intelligence and different real-life outcomes have relied on self-report scales to evaluate emotional intelligence such as the Trait Meta-Mood Scale (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995; Goldman, Kraemer, & Salovey, 1996; Salovey, Stroud, Woolery, & Epel, in press). These studies have not explored emotional intelligence itself, but they focused on reflective mood experience, which Salovey and Mayer have termed perceived emotional intelligence, that is, people's beliefs about their own emotional intelligence (Salovey, Woolery, & Mayer, 2001; Salovey, *et al.*, in press). Because people tend to act in accord with their stated beliefs (Bandura, 1997), a self-report approach to measure perceived emotional intelligence may be useful in research.

Since Salovey and Mayer described their theoretical conceptualization of emotional intelligence (Salovey & Mayer, 1990; Mayer & Salovey, 1997), this construct has played a promising role in explaining how people cope with and adapt to stressful situations contributing to growing social and psy-

chological adjustment (Salovey, *et al.*, 1995, in press; Goldman, *et al.*, 1996; Martínez-Pons, 1997; Fernández-Berrocal, Alcaide, & Ramos, 1999; Fernández-Berrocal, Ramos, & Orozco, 1999; Salovey, Bedell, & Detweiler, 1999). These studies have all assessed perceived emotional intelligence using the Trait Meta-Mood Scale. The Trait Meta-Mood Scale is composed of three subscales: Attention, the perceived ability to attend to moods and feelings, Clarity, the perceived ability to discriminate clearly among feelings, and Repair, the perceived ability to regulate moods. Intercorrelations among Trait Meta-Mood Scale subscales have always been relatively low suggesting conceptual distinctiveness among these factors (Salovey, *et al.*, 1995; Goldman, *et al.*, 1996). Previous studies have found no significant associations between Attention and either Clarity or Repair, but higher scores on Clarity in discriminating emotions has significantly correlated with Repair (Salovey, *et al.*, 1995, in press).

Previous research has shown particular correlational patterns between Trait Meta-Mood Scale subscales, psychological adjustment, and numerous health-related outcomes. For example, the tendency to focus attention on one's mood allows people to track the progress of their mood but might not always be adaptive. Specifically, when the process of identifying and paying attention to moods becomes extreme or excessive, this might increase ruminations or intrusive thoughts or even maintain depressed mood (Nolen-Hoeksema, 1991; Salovey, Bedell, Detweiler, & Mayer, 2000). In fact, attention to one's mood correlates positively with greater physical symptom reporting, depression, anxiety, neuroticism, and thought suppression (Salovey, *et al.*, 1995, in press; Goldman, *et al.*, 1996; Fernández-Berrocal, Alcaide, & Ramos, 1999; Fernández-Berrocal, Ramos, & Orozco, 1999). Otherwise, perceived skill at distinguishing between (Clarity) and repairing moods (Repair) might play a role in reducing negative mental health outcomes or even decreasing the damaging psychophysiological consequences of stress (Salovey, *et al.*, in press). In short, high scores on Clarity and Repair have been associated with recovery from negative mood and ruminative thought following an experimental stressor, lower negative psychological symptoms such as depression, anxiety, thought suppression, and higher empathy, optimism, and satisfaction with interpersonal and family relationships (Salovey, *et al.*, 1995, in press; Goldman, *et al.*, 1996; Fernández-Berrocal, Alcaide, & Ramos, 1999; Fernández-Berrocal, Ramos, & Orozco, 1999). Specifically, Goldman, *et al.* (1996) showed surprising relationships between beliefs that one has the capacity to regulate feelings (Repair), physical health complaints, and stress in students. When the researchers divided the sample into three groups (high Repair, average Repair, and low Repair), they found that, when stress increases, people with low Repair were more likely to visit the health center and showed more reports of illness. These data suggest the importance of

good skills in repairing and regulating negative moods to deal with health challenges (Salovey, 2001).

Given these particular patterns between perceived emotional intelligence assessed by the Trait Meta-Mood Scale and mental health-related outcomes, we expected that high Attention to moods would be negatively associated with Physical Functioning, Role Physical, and Role Emotional, Social Functioning, Mental Health, Vitality, General Health Perceptions and positively associated with Bodily Pain. Otherwise, high Clarity in discriminating feelings and high ability to Repair moods would be positively associated with Physical Functioning, Role Physical and Role Emotional, Social Functioning, Mental Health, Vitality, General Health Perceptions and negatively associated with Bodily Pain in middle-aged women. Secondly, we expected that there would be no differences in scores on SF–36 factors between premenopausal and menopausal women after controlling for their age. Finally, consistent with prior research, we expected that individual differences in beliefs about mood Repair would be associated with health-related quality of life. Particularly, high Repair would be related to higher scores on Physical Functioning, Role Physical and Role Emotional, Social Functioning, Mental Health, Vitality, General Health Perceptions and negatively associated with Bodily Pain as assessed by the Health Survey SF–36.

Method

Participants

Ninety-nine Spanish middle-aged women studying in two adult schools to obtain a teaching certificate for primary grades and whose ages rangèd from 35 to 76 years ($M=50.7$, $SD=8.2$), volunteered to participate. Forty-nine were premenopausal and 45 were menopausal by self-report. The participants completed the Trait Meta-Mood Scale and Health Survey SF–36 and provided information on menstrual regularity during the previous year during one of their history classes under the supervision of the teacher and one research assistant. Menopausal status was based on the reported length of time since the last period. Four women who had a period in the past 12 months but none regularly, were excluded. Women who reported that they were still having regular periods were classified as premenopausal. Women reporting that their last period had occurred 12 or more months ago were categorized as menopausal. All women consented and were informed that they would be asked to complete two questionnaires for a research study on how women feel in midlife.

Measures

Trait Meta-Mood Scale.—The scale is a 48-item Likert-type scale (Salovey, *et al.*, 1995). Participants were required to rate the extent to which they

agreed with each item on a 5-point scale anchored by 1: strongly disagree and 5: strongly agree. This scale addresses three key aspects of intrapersonal emotional intelligence: *Attention* conveys the degree to which individuals tend to observe and think about their feelings and moods (21 items, e.g., "I don't think it's worth paying attention to my emotions or moods"); *Clarity* evaluates the tendency to discriminate among emotions and moods (15 items, e.g., "I am usually very clear about my feelings"); *Repair* refers to subjects' tendency to regulate their feelings (12 items, e.g., "Although I am sometimes sad, I have a mostly optimistic outlook"). In several studies involving six independent samples, the Trait Meta-Mood Scale has been shown to have adequate internal consistency and good convergent and discriminant validity, and intercorrelations among the subscales were relatively low (Salovey, *et al.*, 1995, in press). We used a Spanish adaptation: Attention (*alpha* = .87); Clarity (*alpha* = .81), and Repair (*alpha* = .76) (Fernández-Berrocal, Alcaide, Domínguez, Fernández-McNally, Ramos, & Ravira, 1998). Cronbach alphas for this study are reported in Table 1.

Health Survey SF–36 (Ware & Sherbourne, 1992).—Perceived health status was assessed with the SF–36. The questionnaire measures health concepts that represent basic human values and are relevant to everyone's health status and well-being and is not limited to use with a specific age, disease, or treatment group (Ware, 1995). It has been designed for use with all populations, although its suitability for use with older people or those with severe illness has been questioned (McHorney, Ware, & Lu, 1994; Hill, Harries, & Popay, 1996; Mallinson, 1998). This Health Survey is constructed using the Likert method of summated ratings, contains 36 items that, when scored, yield eight domains. Physical Functioning (10 items) assesses limitations in physical activities, such as walking and climbing stairs. The Role Physical (4 items) and Role Emotional (3 items) domains measure problems with work or other daily activities as a result of physical health or emotional problems. Bodily Pain (2 items) assesses limitations by pain, and Vitality (4 items) measures energy and tiredness. The Social Functioning domain (2 items) examines the effect of physical and emotional health on normal social activities, and the Mental Health domain (5 items) assesses happiness, nervousness, and depression. The General Health Perceptions domain (5 items) evaluates personal health and the expectation of changes in health. One additional unscored item compares the respondent's assessment of current health with health one year earlier. SF–36 scores are eventually transformed to a 100-point scale where higher scores represent a higher health-related quality of life. The measure has been shown to have excellent test-retest reliability, good internal consistency, and adequate construct validity (Brazier, Harper, & Jones, 1992; Jenkinson, Coulter, & Wright, 1993; Jenkinson, Wright, & Coulter, 1994). We used a Spanish version, which has shown good internal

consistency, reliability, and validity in clinical samples. Cronbach coefficients alpha were above .75 except for one scale (Social Functioning, alpha = .55) (Alonso, Prieto, & Antó, 1995; Alonso, Prieto, Ferrer, Vilagut, Broquetas, Roca, Batlle, & Antó, 1998). Cronbach alphas for this study are reported in Table 1. Within each scale, item-scale correlations were substantial in magnitude, exceeding the standard of .40. The values of test-retest reliability ranged from .58 to .99.

Results

Means and standard deviations for the Trait Meta-Mood Scale subscales and Health Survey SF–36 factors and intercorrelations among them are shown in Tables 1 and 2. Consistent with earlier studies, no significant correlations emerged between Attention and Clarity or Repair, but greater Clarity in distinguishing among feelings was strongly correlated with Repair.

TABLE 1
Means, Standard Deviations, and Cronbach Alphas of Subscales of the Trait Meta-Mood Scale and Health Survey SF–36

Variable	Premenopausal Women		Menopausal Women		Alpha
	M	*SD*	*M*	*SD*	
Trait Meta-Mood Scale					
Attention	3.37	.37	3.55	.51	.86
Clarity	3.24	.54	3.32	.55	.72
Repair	3.41	.46	3.31	.67	.74
Health Survey SF–36					
Physical Functioning	2.61	.48	2.44	.52	.91
Role Physical	1.72	.38	1.63	.40	.86
Role Emotional	1.86	.32	1.70	.42	.89
Social Functioning	4.33	.84	3.83	1.03	.66
Mental Health	4.51	1.04	4.15	1.05	.82
Vitality	4.01	1.09	3.87	1.21	.83
General Health Perceptions	3.61	.81	3.59	.90	.79
Bodily Pain	12.24	.65	12.49	.73	.82

Greater Attention to mood was associated with greater Role Emotional. Further, greater Clarity in distinguishing between moods was associated with higher Role Physical, Social Functioning, Mental Health, and Vitality. Skill at mood Repair was associated with greater Role Physical, Role Emotional, Social Functioning, Mental Health, Vitality, and General Health Perceptions and negatively correlated with Bodily Pain.

Analysis of variance was conducted on Health Survey domains SF–36 to test for significant differences on menopausal status. There were no significant main effects in scores on Mental Health, Physical Functioning, Role Physical, Vitality, and Perceived General Health between menopausal and premenopausal women, although there were differences in Social Function-

TABLE 2
PEARSON CORRELATIONS AMONG TRAIT META-MOOD SCALE SUBSCALES AND HEALTH SURVEY SF–36 FACTORS

	1	2	3	4	5	6	7	8	9	10	11
1. Attention											
2. Clarity	.14										
3. Repair	.13	.56*									
4. Physical Functioning	–.16	.20	.20								
5. Role Physical	–.19	.28*	.33*	.40*							
6. Role Emotional	.28*	.20	.26*	.21	.56*						
7. Social Functioning	–.22	.32*	.33*	.32*	.49*	.65*					
8. Mental Health	–.20	.39*	.42*	.29*	.57*	.56*	.60*				
9. Vitality	–.04	.42*	.39*	.36*	.58*	.50*	.47*	.65			
10. General Health Perceptions	–.01	.16	.31*	.36*	.41*	.35*	.26*	.41	.54*		
11. Bodily Pain	.11	–.20	–.36*	–.45*	–.62*	–.45*	–.48*	–.51	–.62	–.44*	

*$p < .01$.

ing ($F_{1,92} = 5.41$, $p < .05$) and Bodily Pain ($F_{1,93} = 6.60$, $p < .05$). In particular, menopausal women reported lower Social Functioning and higher Bodily Pain than those who were not. However, these differences disappeared when age was controlled for, as some previous studies have shown (Matthews, *et al.*, 1990).

Separate regression analysis was conducted to determine the relationships of each perceived emotional intelligence factor with the Mental Health SF–36 domain. These associations were tested using hierarchical regression analysis. Mental Health served as the dependent variable. Repair was entered into first the equation, followed by Clarity and Attention. Repair was entered into the model first in order of its importance in past research in predicting physical and psychological health (Goldman, *et al.*, 1996; Salovey, 2001; Salovey, *et al.*, in press). Results of the regression analysis are presented in Table 3. Eighteen percent of the Role Physical variance was explained by factors of perceived emotional intelligence. Results indicated a significant effect of Repair and Attention. However, analysis did not yield a significant effect for Repair, Clarity, and Attention with Physical Functioning. Seventeen percent of the Role Emotional variance was explained by factors of perceived emotional intelligence. Results showed again a significant effect of Repair and Attention. Sixteen percent of the Bodily Pain variance was explained by factors of perceived emotional intelligence. Results indicated a significant effect of Repair. On the other hand, 22% of the variance in Vitality was explained by these factors. Significant effects for Repair and Clarity were noted.

In the same way, 27% of the Mental Health variance was explained by

TABLE 3
REGRESSION ANALYSIS PREDICTING SCORES ON THE HEALTH SURVEY SF–36 FROM PERCEPTIONS OF EMOTIONAL INTELLIGENCE ($N = 99$)

Variable	Total R^2	Increment in R^2	B	$SE\ B$	Beta
Role Physical					
Repair	.11	.11*	.18	.07	.27*
Clarity	.12	.01	.11	.08	.16
Attention	.18	.06*	−.21	.08	−.24*
Role Emotional					
Repair	.07	.07*	.16	.07	.25*
Clarity	.07	.00	.00	.08	.10
Attention	.17	.10*	−.27	.08	−.32*
Bodily Pain					
Repair	.13	.13*	−.79	.24	−.38*
Clarity	.13	.00	−.00	.26	−.01
Attention	.16	.03	.44	.26	.16
Vitality					
Repair	.15	.15*	.44	.22	.23*
Clarity	.21	.06*	.65	.24	.30*
Attention	.22	.01	−.25	.24	−.10
Mental Health					
Repair	.17	.17*	.58	.21	.31*
Clarity	.21	.03	.46	.22	.23*
Attention	.27	.06*	−.60	.22	−.25*
Social Functioning					
Repair	.11	.11*	.40	.18	.24*
Clarity	.14	.03	.41	.20	.22*
Attention	.21	.07*	−.60	.20	−.27*
General Health					
Repair	.10	.10*	.49	.17	.34*
Clarity	.10	.00	.00	.20	−.04
Attention	.10	.00	.00	.19	−.04

*$p < .05$. This alpha level was chosen as most appropriate given the sample size.

factors of perceived emotional intelligence. Results indicated a significant effect of Repair, Clarity, and Attention. Besides, 21% of the Social Functioning variance was explained by these factors. Analysis showed again significant effects for Repair, Clarity, and Attention. Lastly, 10% of the General health variance was explained by factors of perceived emotional intelligence, the effect for Repair being significant.

To test the hypothesis that Repair would be related to differences in scores on health-related quality of life as assessed by the Health Survey SF–36 domains, we conducted several analyses of variance. For each analysis, age was controlled for. Following the procedure of Goldman, *et al.* (1996), women were divided into two groups based on their scores on the Repair subscale (±1 *SD*). Those women who scored one standard deviation above

the mean on the Repair subscale were the High Repair group. Those who scored one standard deviation below the mean on Repair were the Low Repair group. The High Repair group had higher scores on all Health Survey SF–36 subscales (all $ps < .01$ with the exception of Perceived General Health, $p < .05$). In other words, those individuals who reported easily regulating their feelings also reported higher Physical Functioning, Role Physical and Role Emotional, Social Functioning, Mental Health, Vitality, and Perceived General Health and lower Bodily Pain compared to those reporting less mood Repair (see Table 4).

TABLE 4
MEANS AND STANDARD DEVIATIONS FOR HEALTH SURVEY SF–36 SUBSCALES AS A FUNCTION OF LOW VERSUS HIGH SCORES ON REPAIR

Health Survey SF–36 Scale		Group		$F_{1,24}$
		Low Repair	High Repair	
Physical Functioning	*M*	2.41	2.92	
	SD	.46	.09	14.11†
Role Physical	*M*	1.53	1.93	
	SD	.46	.11	8.42†
Role Emotional	*M*	1.62	2.00	
	SD	.45	.02	8.54†
Social Functioning	*M*	3.46	4.62	
	SD	1.13	.53	10.55†
Mental Health	*M*	3.80	5.18	
	SD	.94	.58	19.23†
Vitality	*M*	3.47	4.85	
	SD	1.09	.84	12.72†
General Health	*M*	3.26	4.03	
	SD	.99	1.63	5.40*
Bodily Pain	*M*	3.21	1.45	
	SD	1.30	.68	17.65†

*$p < .05$. †$p < .01$.

DISCUSSION

We examined the association between aspects of perceived emotional intelligence, defined as the ability to attend to, distinguish among, and regulate moods and reports of physical, psychological, and social symptoms in middle-aged women. This study extended previous research with college students in which perceived emotional intelligence was related to higher health outcomes and psychological adjustment (Salovey, *et al.*, 1995, in press; Goldman, *et al.*, 1996). The predicted negative effect of Attention on all SF–36 domains was not confirmed. Attention was negatively correlated only with lower Social Functioning and higher Role Emotional. The nonsignificant results may reflect the small sample. Clarity was also related to higher Physical Functioning, Role Physical, Social Functioning, Mental Health, and Vitality,

but no correlations between the Clarity scale and Role Emotional, General Health Perceptions, and Bodily Pain were found. Perceived skill at mood Repair was associated with greater Role Physical, Role Emotional, Social Functioning, Mental Health, Vitality, and General Health Perceptions and negatively correlated with Bodily Pain but not with Physical Functioning. This finding is consistent with previous studies which have shown that ability to repair moods is associated with lower symptom reporting (Study 1; Salovey, *et al.*, in press), lower illness reports, and fewer visits to a health center (Goldman, *et al.*, 1996; Salovey, 2001).

Hierarchical regression analysis suggested that aspects of perceived emotional intelligence (Attention, Clarity, and Repair) may account for a certain percentage of the variance of the health-related quality of life in midlife. Extending previous studies, it is remarkable that higher Mental Health was positively associated to Repair and Clarity and negatively to Attention. Thus, the Repair factor was significantly related to more quality-of-life variables than the other aspects of emotional intelligence, showing significant relationships with all SF–36 factors (with the exception of Physical Functioning) and suggesting the importance of appropriate mood Repair for predicting health-related quality. Otherwise, Attention was negatively associated with several SF–36 factors such as Role Physical, Role Emotional, Mental Health, and Social Functioning.

That counterintuitive relationship between Trait Meta-Mood Scale factors and health-related quality of life could have some explanation. Attention to moods indicates a tendency to be internally directed. In fact, several studies indicated Attention was correlated with private and public self-consciousness (Salovey, *et al.*, 1995; Gohm & Clore, 2000) and positive correlated with depression and greater symptom reporting (Salovey, *et al.*, 1995; Goldman, *et al.*, 1996; Fernández-Berrocal, Alcaide, & Ramos, 1999; Fernández-Berrocal, Ramos, & Orozco, 1999). On the other hand, Clarity and Repair have been associated with higher mental and physical adjustment (Salovey, *et al.*, 1995, in press; Goldman, *et al.*, 1996; Fernández-Berrocal, Ramos, & Orozco, 1999). It is possible that, whereas excessive Attention to mood may promote rumination, worry, and negative symptoms, Clarity in distinguishing between moods and mood Repair may allow people to develop productive strategies for dealing with their moods (Salovey, Bedell, Detweiler, & Mayer, 2000). Further investigation should clarify links between components of perceived emotional intelligence and ruminative thinking to help individuals to recover from stressful experiences and cope more successfully with negative events. Finally, when controlling for age, there were no differences in SF–36 factors between premenopausal and menopausal women, but we found significant differences in all SF–36 factors when women were divided into two groups based on their scores on Repair.

However, these results should be interpreted cautiously. First, this study was conducted with self-report measures, so it is likely that social desirability might have influenced responding to the questionnaires to be perceived favorably. Further studies should include task-based measures of emotional intelligence. Secondly, since all measures were given at the same time, it is impossible to address the direction of causality in this study. Later experiments should focus on directional effects between perceived emotional intelligence, health, social functioning, and social adjustment. It is also likely that common methods variance requires assessment.

Even though there are limitations to this study, perceived emotional intelligence was associated with a wide range of health-related quality-of-life variables. The result agreed with those of other studies, which underline the importance of emotions in physical health (Salovey, Rothman, Detweiler, & Steward, 2000). According to previous studies on emotional and personality traits associated with middle-aged women (Bromberger & Matthews, 1996a, 1996b), these data suggest that higher scores on perceived emotional intelligence are related to lower physical health problems and higher psychological adjustment and social adaptation of middle-aged women, independent of menopausal status.

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