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Original Article

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Associations between stress, anxiety, depression, and emotional intelligence among osteopathic medical students

Abstract

Context: Stress, anxiety, and depression affect medical student populations at rates disproportionate to those of general student populations. Emotional intelligence (EI) has been suggested as a protective factor in association with psychological distress.

Objective: To explore the relationships between EI and stress, anxiety, and depression among a sample of US osteopathic medical students.

Methods: From February to March 2020, a convenience sample of medical students enrolled at an osteopathic medical school in the southeastern region of the United States were invited to complete a voluntary and anonymous 54-item online questionnaire that included sociodemographic items as well as validated and reliable scales assessing perceived stress, anxiety, depression, and EI. Univariate statistics were calculated to describe the participant characteristics and the study variables of interest. Pearson's product-moment correlations were used to examine relationships between EI and study variables. Three multiple regression models were fitted to examine the relationship between EI and stress, anxiety, and depression, adjusting for sociodemographic factors exhibiting significant bivariate relationships with outcome variables. Dichotomous variables were created that were indicative of positive screens for potential depressive disorder or anxiety disorder. Independent-sample t-tests were used to determine the presence of a statistically significant difference in EI scores between positive screeners for depression and anxiety and their respective counterparts; an alpha level of 0.05 was set *a priori* to indicate statistical significance.

Results: In all, 268 medical students participated in this study, for a response rate of approximately 27%. Importantly, EI exhibited significant negative correlations with stress, anxiety, and depression (r=−0.384, p<0.001; r=−0.308, p<0.001; r=−0.286, p<0.001), respectively). Thus, high levels of stress, anxiety, and depression were observed in the sample. Significant relationships remained following covariate adjustment. Established cutoffs for anxiety and depression were used to classify positive and negative screens for these morbidities. Using these classifications, individuals screening positive for potential anxiety and depression exhibited significantly lower levels of EI than their counterparts showing subclinical symptoms (t=5.14, p<0.001 and t=3.58, p<0.001, respectively).

Conclusion: Our findings support the notion that higher levels of EI may potentially lead to increased well-being, limit psychological distress, improve patient care, and facilitate an ability to thrive in the medical field. We encourage continued study on the efficacy of EI training

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through intervention, measurement of EI in both academic and clinical settings as an indicator of those at risk for programmatic dropout or psychological distress, and consideration of EI training as an adjunct to the educational program curriculum.

Keywords: affect; anxiety; depression; emotional intelligence; emotions; medical students; psychological distress; stress

College student populations are at high risk for psychological problems such as stress, anxiety, and depression,[1] which are common among undergraduates.[2] Students attend college in environments that are unique, challenging, and often adverse, with medical students' stress strongly related to academic performance.[3] Medical students are disproportionally affected compared with nonmedical undergraduates. For example, nonmedical undergraduates in a sample of 1,074 students at a university in Spain exhibited levels of stress, anxiety, and depression at 34.5, 23.6, and 18.4%, respectively,[1] but among medical students, rates of these conditions have been reported as high as 62.4% (276 of 442), 64.3% (284 of 442), and 60.8% (266 of 442), respectively.[4] The prevalence of psychological dysregulation in medical students is often attributed to the stressful nature of these rigorous programs. The immense strain of gaining entrance into medical schools and their competitive nature, combined with other academic and professional demands, often lead to emotional exhaustion, psychological dysfunction, and burnout.[5,6] Further, discipline-specific stressors often continue after graduation for medical students.[7]

Among the notable correlates of stress, anxiety, and depression are alcohol and drug use,[8] suicidal ideation,[9] and burnout.[10,11] Students experiencing high levels of stress often struggle with adaptive coping strategies, thereby increasing the risk for adverse physical and psychological health problems.[12] Unfortunately, students have shown a reluctance to seek treatment for these issues. In a large multi-university study of 13,105 students,[2] positive screens for depression, anxiety, or suicidal ideation were observed among 17.9% (n=2350) of participants.[2] Of those students who exhibited psychological distress, 54% reported no treatment in the past year. The students who did not seek help exhibited depression, anxiety, and suicidal ideation at rates of 48.7%, 51.3%, and 32.3%, respectively.[2] Of interest, 42% of those reporting no treatment in the prior year acknowledged their need for help. Prominent reasons reported for declining to seek help were attempting to resolve the issue on their own (55%), lack of time (51%), and uncertainty regarding the seriousness of their issue.[2]

Emotional intelligence (EI) has been suggested as a protective factor for stress, anxiety, and depression.[13] EI encompasses a person's ability to express emotions and recognize emotions in others,[14] ultimately using this information to regulate psychological circumstances and behavior. Among medical residents, EI has been found to hold an inverse relationship with mean rates of stress, anxiety, and depression.[12,15] EI was shown to predict levels of wellness and the ability to thrive in a surgical environment.[5] EI has also been found to buffer the effects of negative life events on psychological turmoil.[13] Gupta et al.[16] found that first-year medical students reporting higher levels of EI were able to handle stress more effectively. Further, higher levels of EI were shown to correlate with improved academic performance,[17] a prominent stressor among medical students. Recent studies have also suggested a need for EI training in the medical school curricula[18,19] based on observations of declining EI over the course of the educational program. For example, in a recent study, Mintle et al.[18] used a prospective design to show that, regardless of gender, EI levels in a sample of osteopathic medical students declined during their preclinical training. Additionally, Kimmelman et al.[19] reported that first- and second-year students of osteopathic medicine exhibited lower levels of empathy (a foundational element of EI) than allopathic medical students, as indicated by an established physician empathy scale.

The purpose of this study was to examine the potential relationships between EI and stress, anxiety, and depression in a sample of osteopathic medical students in the United States. We hypothesized that EI would serve as a protective factor in the existence of stress, anxiety, and depression, such that higher levels of EI would inversely relate to lower levels of these negative affective parameters.

Methods

The Institutional Review Board at Lincoln Memorial University granted approval for this study (protocol # 868).

Study design, sampling, and procedure

We utilized a cross-sectional research design to recruit a convenience sample of students from an osteopathic medical school in the southeastern region of the United States, with a total program enrollment of 997 students. These medical students were invited to complete a voluntary and anonymous 54-item online questionnaire that

included sociodemographic items as well as validated and reliable scales assessing perceived stress, anxiety, depression, and EI. Recruitment emails containing study information and a Qualtrics (SAP SE)-based survey link were sent to students via their university-issued email accounts, and data were gathered from February through March 2020. Two reminders were sent to students at one-week intervals. All participants provided voluntary informed consent electronically prior to disclosing any information used for study purposes.

Survey instrument

Our questionnaire (Appendix) was constructed by two members of the research team (R.D, V.N.). The instrument's first seven questions assessed the sociodemographic factors such as gender, age, ethnicity, employment, and campus living status; year in medical school (first year through fourth year); and grade point average (GPA). These demographics were selected because they have been associated with measures of affective dysregulation among student populations.[6] To measure perceived stress, the 10-item Perceived Stress Scale (PSS) was used.[20] Cronbach's alpha for the PSS in the current study was 0.89. Anxiety and depression were assessed using a four-item Patient Health Questionnaire (PHQ-4).[21] Cronbach's alpha for the PHQ-4 in the current study was 0.82. Because the PHQ-4 measures both depressive and anxiety symptoms, two continuous metrics were produced for analytic purposes. Next, using established cutoffs (i.e., ≥3),[21] we constructed positive and negative screens indicative of potential depressive and anxiolytic disorders. It is important to note that the PHQ-4 is a field test, so these metrics are not intended to be inferenced as medical diagnoses. To measure EI, the 33-item Schutte Self-Report Emotional Intelligence Test (SSEIT) was utilized.[22] In the current study, Cronbach's alpha for the EI scale was 0.86.

Data analyses

All analyses were performed using IBM's Statistical Package for the Social Sciences (SPSS) version 25 (IBM Corp.) Univariate statistics were calculated to describe participant characteristics and the study variables of interest. To examine the relationships between EI and the psychological variables of interest, Pearson's product-moment correlations were calculated. Next, three multiple regression models were fitted to examine the relationship between EI and stress, anxiety, and depression, adjusting for

sociodemographic factors that exhibited a significant bivariate relationship with each variable of stress, anxiety, and depression. To further examine the relationships between EI and depression and anxiety, dichotomous variables were created that were indicative of positive screens for the presence of a potential depressive disorder as well as an anxiety disorder using established PHQ-4 cutoff points.[21] Subsequently, independent-sample t-tests were used to determine the presence of a statistically significant difference in EI scores between positive screeners for depression and anxiety and their respective counterparts. An alpha level of 0.05 was set *a priori* to indicate statistical significance.

Results

Of the 997 students solicited for participation, 268 (26.9%) responded. Descriptive statistics for the respondent sample are shown in Table 1. Mean (standard deviation, SD) age of

Table 1: Respondent demographics (n=268).

	Mean (SD)	n (%)[a]
Age	22.64 (6.06)	
Gender		
Female		142 (53.0)
Male		117 (43.7)
Other		0 (0.0%)
Race/Ethnicity		
White		195 (72.8)
American Indian/Alaskan Native		1 (0.4)
Hispanic		6 (2.2)
Asian/Pacific Islander		35 (13.1)
Black/African American		6 (2.2)
Multiple Ethnicity/Other		16 (6.0)
University status		
1st-year medical student		75 (28.0)
2nd-year medical student		85 (31.7)
3rd-year medical student		58 (21.6)
4th-year medical student		40 (14.9)
Living status		
On campus		9 (3.4)
Off campus		245 (91.4)
Employment status		
Employed		19 (7.1)
Unemployed		235 (87.7)
Grade point average, GPA		
Less than 1.99		1 (0.4)
2.00–2.49		18 (6.7)
2.50–2.99		53 (19.8)
3.00–3.49		109 (40.7)
3.50–4.00		72 (26.9)

[a]In each subcategory on the right column, the total number of respondents does not equal 268, and the percentages reported does not equal 100%, due to participant omission of particular items.

Table 2: Zero-order correlation matrix of psychological variables.

Measure	1	2	3	4
1. EI	–	−0.384[*]	−0.308[*]	−0.286[*]
2. Stress	–	–	0.697[*]	0.631[*]
3. Anxiety	–	–	–	0.523[*]
4. Depression	–	–	–	–
Mean	121.3	19.9	3.0	1.6
SD	12.0	7.2	1.8	1.7
Minimum	91.0	2.0	0.0	0.0
Maximum	152.0	38.0	6.0	6.0

[*]All correlations are significant at $p < 0.001$. EI, emotional intelligence; SD, standard deviation.

the participants was 22.64 ± 6.06 years (range, 22–48 years), with the majority identifying as female (142; 53.0%) and White (195; 72.8%). Respondents were relatively evenly distributed across student year: 75 (28.0%) first-year students; 85 (31.7%) second-year students; 58 (21.6%) third-year students; and 40 (14.9%) fourth-year students.

The relationships between the psychological variables of interest were first examined using correlational analyses (Table 2). As shown, significant negative relationships were observed between EI and stress (r=−0.384, p<0.001), anxiety (r=−0.308, p<0.001), and depression (r=−0.286, p<0.001). These data suggest that higher levels of EI are associated with lower levels of stress, anxiety, and depression. The results showed a strong positive relationship between stress and anxiety (r=0.697) as well as stress and depression (r=0.631). Similarly, anxiety and depression were also strongly associated with each other (r=0.523).

Next, the relationships between EI and stress, anxiety, and depression were evaluated for attenuation by controlling for sociodemographic factors that exhibited a significant relationship to each of the psychological variables of interest. As depicted in Table 3, EI remained a significant correlate of stress (b=−0.194, p<0.001), anxiety (b=−0.037, p<0.001), and depression (b=−0.038, p<0.001), after controlling for important demographics.

Table 4 displays the results of t-tests used to assess the potential differences in EI among those screening positive vs negative for anxiety and depression. Statistically significant differences in EI were observed between those screening positive (mean, 117.8 [SD, 11.2]) and those screening negative for anxiety (mean, 125.9 [SD, 11.5]), with lower EI scores observed among the positive screens (t=5.14, p<0.001). Similarly, individuals screening positive for depression (mean, 116.0 [SD, 12.7]) also exhibited significantly lower levels of EI (t=3.58, p<0.001) than their counterparts exhibiting negative screens (mean, 122.9 [SD, 11.3]).

Discussion

The purpose of the current study was to examine the potential relationships between EI and the psychological variables of stress, anxiety, and depression in a sample of US osteopathic medical students. Although attention has been given to the presence of these negative psychological states in the high-stress environment of medical schools, few studies have investigated the role that EI

Table 3: Multiple regressions of psychological variables on emotional intelligence and sociodemographic control variables.[a]

	Stress				Anxiety				Depression			
	b	*SE*	*β*	*p-value*	*b*	*SE*	*β*	*p-value*	*b*	*SE*	*β*	*p-value*
EI	−0.194	0.035	−0.332	<0.001	−0.037	0.010	−0.248	<0.001	−0.038	0.009	−0.270	<0.001
Model	R^2=0.352		F=10.144	<0.001	R^2=0.232		F=6.395	<0.001	R^2=0.120		F=3.868	=0.001

[a]In each model, demographic variables exhibiting significant bivariate relationships with dependent variables were controlled for. The stress model covariates are gender, age, racial minority status, year in school, GPA, employment, and campus living status. The anxiety model covariates are gender, age, year in school, GPA, and employment. The depression model covariates are year in school, GPA, and campus living status. EI, emotional intelligence; GPA, grade point average; SE, standard error.

Table 4: Test of group[a] mean differences in emotional intelligence between anxiety and depression.

	n	Mean	SD	Mean difference	t	p-value	Effect size[b]
Yes anxiety	118	117.8	11.2	8.1	5.14	<0.001	0.716
No anxiety	91	125.9	11.5				
Yes depression	48	116.0	12.7	6.9	3.58	<0.001	0.569
No depression	161	122.9	11.3				

[a]Groupings are based on positive and negative screening based on PHQ-4 cutoff points. [b]Effect size measured as Cohen's *d*.PHQ-4, Patient Health Questionnaire 4; SD, standard deviation.

may play in the manifestation of such states and even fewer studies have been conducted among US student populations.

In this study, we examined the relationships between EI and stress, anxiety, and depression, revealing negative associations between EI and each of these deleterious variables of interest. Importantly, these negative relationships remained significant even after adjusting for influential covariates. It is apparent that the rigor of medical education equates to a stressful program of study. In our study, high levels of stress (mean PSS score, 19.9) observed among osteopathic medical students exhibited a moderate-to-strong correlation with EI. For perspective, normative data from the validation of the PSS indicated a mean PSS score of 12.1 among young adults.[20] Ranasinghe et al.[3] found that Sri Lankan medical students with higher EI scores also exhibited lower self-perceived stress. Further, Enns and colleagues[12] found that higher EI scores were associated with lower perceived stress among US undergraduate and graduate students majoring in helping disciplines such as psychology, nursing, and social work. However, our findings do conflict with one study of London-based medical students in which those with higher EI experienced greater acute stress during surgical tasks.[23]

The nature of EI implies an ability to understand the emotional states of others. Although speculative, this may partially explain the findings of Arora et al,[23] who found that students may have more accurately assessed the gravity of their impact on another human being, thus perceiving the surgical task as a more stress-inducing act. Further study is warranted to understand task-specific stress variation within the domain of medical education and how EI might interact with such variation.

Among 73 individuals in a surgery residency program, Lin et al.[5] found that EI scores were inversely correlated with depression. Within a substantially larger sample, our findings echo the negative relationship between EI and depression. Previous research measuring stress, anxiety, and depression collectively in medical education has suggested a positive relationship between these three variables,[6,15] which our findings further corroborate. Among veterinary medical students, Nahar et al.[6] found positive relationships between stress, anxiety, and depression.[6] Meanwhile, a study of medical residents in Iran found significant negative relationships between EI and stress, anxiety, and depression.[15] As with our findings, Kousha et al.[15] also observed strong positive correlations between the variables of stress, anxiety, and depression.

Mechanistically, EI may moderate a person's response to stressful or traumatic life events. Research suggests that EI acts as a buffer against stressful events that lead to psychological problems.[13] Collectively, the positive relationship between stress, anxiety, and depression present in our findings and those of others,[15] combined with the negative relationships between EI and these variables, may speak to potential pathways in which high stress leads to the development of, or exacerbation of, symptoms indicative of anxiety and depression. Prospective research designs should investigate this mechanistic pathway as well as the reciprocal nature of the anxiety–depression relationship among this population. Potential temperance of the stress response by EI may prove valuable to future intervention among this population because it pertains to the development of affective dysregulation.

Further, our examination of the mean differences in EI between those who screened positively and negatively for potential anxiety and depression add to our understanding of these complex relationships. In relation to both morbidities, lower EI scores were observed among positive screeners. More specifically, mean EI scores were 8.1 and 6.9 points lower among those screening positive for potential anxiety and depression, respectively. These findings, and those of others,[5,13,15] suggest that EI training may be a useful addition to medical student educational programs and, further, potentiate EI instrumentation as a plausible screening tool for the identification of at-risk individuals, allowing for early intervention.

Evidence has been presented suggesting that it is possible to increase EI, which may benefit many domains of psychological, physical, and social health.[24,25,26] Using a randomized experimental design, Israeli physicians and nurses exposed to an 18-month EI training intervention showed increased EI at follow-up compared to controls who exhibited no difference.[24] Fortuitously, patient satisfaction scores increased in conjunction with the EI scores of medical staff. These findings display an important benefit of EI, one extending beyond the psychological health of practitioners to the well-being of their patients. Specifically, osteopathic medicine is practiced with the whole person in mind, thereby utilizing a holistic approach to wellness. This approach necessitates empathy and understanding when working with patients and their unique needs. Thus, particular EI components, such as appraisal and expression of emotion as well as the utilization of emotions in problem solving, are vital to this field. Evidence has been presented on the effectiveness of EI training specifically among medical professionals (i.e., physicians and nurses).[24] It is important that EI training interventions be conducted and evaluated among medical students prior to entering the workforce, because the educational setting is an optimal time and place for

such an intervention. Essentially, EI training could be integrated into the program curriculum. The incorporation of EI assessment as a potential screening tool for medical school candidates may also prove beneficial in choosing students who are better prepared for the rigors of such training programs. Like their student counterparts, practicing physicians continue to exist in a highly stressful discipline. For example, Olson and colleagues[7] found that 56.6% (n=283) of nearly 500 physicians screened positive for burnout using validated instruments. In addition to encouraging EI training among student groups, we also advocate EI training as a constituent of continuing educational programming. Similar to using EI levels as a potential screening tool in the admission process for educational programs, an assessment of EI among current students or practitioners in a professional setting may identify those at risk for psychological dysregulation and provide opportunities for early intervention. Overall, such an emphasis on EI within the medical field will theoretically improve the physician–patient relationship and have the more downstream effect of improved care and patient wellness.

Future research should include the examination of any current EI promotion in medical student training programs to determine the outcomes of such training on the long-term well-being of medical personnel. Further, researchers should investigate EI as a predictor of programmatic dropout. Lastly, it is plausible that a pathway from programmatic stress to depression and anxiety is present. Studies should attempt to establish a temporal sequence utilizing prospective research designs among this population.

Limitations

Several study limitations are worth noting. First, this study relied upon self-reported survey results, a model that lends itself to forgetfulness, acquiescence, social facilitation, burnout, dishonesty, and exaggeration, among other biases.[27] Second, participants were recruited using convenience sampling, which may inhibit generalizability. Third, these data were collected from a single school of medicine, so our findings may not be generalizable to other samples. Fourth, the cross-sectional nature of the study prevents the identification of causal sequencing among variables of interest. Finally, the PHQ-4 was used as a field screening tool for anxiety and depression in the current study, but this brief instrument is in no way intended to represent a substitute for physician diagnosis of an underlying medical condition.

Conclusion

Our findings identified high levels of stress, anxiety, and depression among medical students. These findings also showed significant differences in EI between those exhibiting positive screens for anxiety and depression. Those exhibiting higher levels of EI are thought to process, express, and regulate their emotions in a more efficient manner. Our findings corroborate this logic and support the notion that higher levels of EI may potentially lead to increased well-being, limit psychological distress, improve patient care, and facilitate an ability to thrive in the medical field. Based on the findings of our study, and the findings from this body of literature, programs of medical education should consider the incorporation of EI training into programmatic curriculum, based on the success of preliminary interventions, should consider introducing measurement of EI into the battery of screening for potential medical education program candidates, and should consider measurement of EI in both academic and clinical settings as an indicator of those at risk not only for programmatic dropout but also for psychological distress.

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Appendix. Survey instrument used by the authors to measure perceived stress, anxiety, depression, and emotional intelligence among osteopathic medical students.

The survey is reprinted without editing.

Demographics:
1. What is your gender?
   1. Female
   2. Male
   3. Other
2. What is your age in years? _____years
3. Which best describes your race/ethnicity?
   1. American Indian or Alaskan Native
   2. Hispanic American
   3. Asian/Pacific Islander
   4. Black or African American
   5. White
   6. Multiple Ethnicity/Other
4. What is your academic classification at the university?
   1. First-year medical student
   2. Second-year medical student
   3. Third-year medical student
   4. Fourth-year medical student
   5. Other, _____
5. What is your current grade point average, (GPA)?
   1. Less than 1.99
   2. 2.00–2.49
   3. 2.50–2.99
   4. 3.00–3.49
   5. 3.50–4.00
6. In addition to being a student, are you currently employed?
   1. Yes
   2. No
7. Do you live on campus (dorms, sorority/fraternity housing, etc.) or off campus (apartment, house, duplex, etc.)?
   1. On campus
   2. Off campus

Perceived stress scale, PSS:
Items 1–10 are from Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385–396. Under public domain.
0=Never; 1=Almost Never; 2=Sometimes; 3=Fairly often; 4=Very often
   1. In the last month, how often have you been upset because of something that happened unexpectedly?
   2. In the last month, how often have you felt that you were unable to control the important things in your life?
   3. In the last month, how often have you felt nervous and "stressed"?

   4. In the last month, how often have you felt confident about your ability to handle your personal problems?*
   5. In the last month, how often have you felt that things were going your way?*
   6. In the last month, how often have you found that you could not cope with all the things that you had to do?
   7. In the last month, how often have you been able to control irritations in your life?*
   8. In the last month, how often have you felt that you were on top of things?*
   9. In the last month, how often have you been angered because of things that were outside of your control?
   10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
*Items are reverse-scored.

Depression and anxiety:
Items 1–4 are from Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ–4. *Psychosomatics*, *50*(6), 613–621. Under public domain.
0=not at all; 1=Several days; 2=More than half the days; 3=Nearly every day
Total score is determined by adding together the scores of each of the 4 items.
Scores are rated as normal (0–2), mild (3–5), moderate (6–8), and severe (9–12).
Total score ≥3 for first 2 questions suggests anxiety.
Total score ≥3 for last 2 questions suggests depression.
Over the last 2 weeks, how often have you been bothered by the following problems?
   1. Feeling nervous, anxious, or on edge
   2. Not being able to stop or control worrying
   3. Feeling down, depressed, or hopeless
   4. Little interest or pleasure in doing things

Emotional intelligence:
Items 1–33 are from Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, *25*(2), 167–177. Under public domain.
1=Strongly disagree; 2=Disagree; 3=Neither disagree nor agree; 4=Agree; 5=Strongly agree
   1. I know when to speak about my personal problems to others.
   2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.
   3. I expect that I will do well on most things I try.
   4. Other people find it easy to confide in me.
   5. I find it hard to understand the nonverbal messages of other people.*
   6. Some of the major events of my life have led me to re-evaluate what is important and not important.
   7. When my mood changes, I see new possibilities.
   8. Emotions are one of the things that make my life worth living.
   9. I am aware of my emotions as I experience them.
   10. I expect good things to happen.
   11. I like to share my emotions with others.
   12. When I experience a positive emotion, I know how to make it last.
   13. I arrange events others enjoy.
   14. I seek out activities that make me happy.

(continued)

15. I am aware of the nonverbal messages I send to others.
16. I present myself in a way that makes a good impression on others.
17. When I am in a positive mood, solving problems is easy for me.
18. By looking at their facial expressions, I recognize the emotions people are expressing.
19. I know why my emotions change.
20. When I am in a positive mood, I am able to come up with new ideas.
21. I have control over my emotions.
22. I easily recognize my emotions as I experience them.
23. I motivate myself by imagining a good outcome to tasks I take.
24. I compliment others when they have done something well.
25. I am aware of the nonverbal messages other people send.

(continued)

26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.
27. When I feel a change in emotions, I tend to come up with new ideas.
28. When I am faced with a challenge, I give up because I believe I will fail.*
29. I know what other people are feeling just by looking at them.
30. I help other people feel better when they are down.
31. I use good moods to help myself keep trying in the face of obstacles.
32. I can tell how people are feeling by listening to the tone of their voice.
33. It is difficult for me to understand why people feel the way they do.*

*Items are reverse-scored.