

EFFECTS OF EMOTIONAL INTELLIGENCE AND SELF-LEADERSHIP ON STUDENTS' COPING WITH STRESS

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We examined the impacts of emotional intelligence and self-leadership on coping with stress, and assessing the mediating roles that positive affect and self-efficacy play in this process. Participants were 575 students at 2 Chinese universities, who completed measures of coping with stress, self-leadership, emotional intelligence, self-efficacy, and positive affect. The structural equation model analysis results indicated that self-efficacy fully mediated the relationship between emotional intelligence and active coping, as we had predicted. Further, self-leadership had a direct effect on active coping. However, positive affect and self-efficacy did not mediate the relationship between self-leadership and coping with stress. Implications are discussed in terms of theoretical contributions and interventions for coping with stress.

Keywords: emotional intelligence, self-leadership, coping with stress, positive affect, self-efficacy.

College students deal with stress arising from a variety of sources, such as economic, academic, and employment pressure, which can lead to emotional problems, physical illness, and reduced academic performance (Bergin & Pakenham, 2015; Liu et al., 2007). Therefore, we examined the effects of

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emotional intelligence and self-leadership on Chinese college students' coping with stress, using the model developed by Houghton, Wu, Godwin, Neck, and Manz (2012). This model suggests that emotional intelligence and self-leadership could facilitate effective coping with stress via the mediators of positive affect and self-efficacy. The study of stress often coincides with that of emotion, which is experienced both physically and mentally. Indeed, neuroscience researchers have shown that emotions are involved in behavioral and physiological responses to information-processing mechanisms (Poldrack, Wagner, Ochsner, & Gross, 2008). For example, Green and Malhi (2006) stated that "the ability to generate alternative explanations for emotional events, and keeping these alternative appraisals in mind for the duration of the eliciting stimulus, is required for effective reframing of the emotional stimulus" (p. 149). Other scholars have also shown that positive emotions correlate with general health and subjective well-being (Kok et al., 2013; Tugade, Fredrickson, & Barrett, 2004). Further, Houghton et al. suggested that effective emotion regulation and self-leadership might grant people the "ability to generate alternative explanations" (p. 222), and used their findings to develop a meditation model of coping with stress.

Emotional intelligence (EI) relates to the ability to deal with one's emotions (Mayer, Salovey, & Caruso, 2000, p. 10). Within this concept, *ability* EI focuses on the information-processing of EI, that is, standard intelligence (Mayer et al., 2000), whereas *trait* EI integrates aspects of personality, and has been defined as "a constellation of emotional self-perceptions and dispositions located at the lower levels of personality hierarchies" (Petrides, Pérez-González, & Furnham, 2007, p. 26). In this study, we adopted the four-branch EI model, which was developed by Davies, Stankov, and Roberts (1998) to assess self-emotion appraisal, others' emotion appraisal, regulation of emotion, and use of emotion.

In terms of coping with stress, Zomer (2012) found that EI facilitates adaptive coping across both interpersonal and occupational contexts. Further, Siu (2009) demonstrated that high, versus low, EI adolescents showed fewer problem behaviors, and Laborde, Brüll, Weber, and Anders (2011) found that high, compared with low, trait EI athletes experienced lower levels of stress. Thus, high EI promotes effective coping during stressful situations.

Self-leadership is the process through which individuals target their cognitions and actions toward desired outcomes (Stewart, Courtright, & Manz, 2011), and typically comprises three categories: behavior-focused, natural-reward, and constructive-thought-pattern strategies (Neck & Manz, 1996). Although the conceptual dimensions of self-leadership have been developed mainly in countries with individualistic cultures, such as the US, Ho and Nesbit (2009) demonstrated that this concept can also be generalized to China, as a collectivistic country. Hong and Kim (2007) showed that clinical nurses who exhibited more self-leadership behaviors experienced less job stress due to better coping. Further,

Dolbier, Soderstrom, and Steinhardt (2001) found that self-leadership was related to both effective coping styles and greater perceived wellness.

Folkman and Moskowitz (2000) suggested that positive affect, which refers to the state in which people are active, and feel joy, and excitement (Watson, Clark, & Tellegen, 1988), and self-efficacy influence the ability to cope with stress, which is in line with broaden-and-build theory (see also Nicholls, Polman, Levy, & Borkoles, 2010). Positive affect can help people to cope with stress efficiently and also facilitates health-promoting behavior (Fredrickson, 2001). *Self-efficacy* involves the evaluation of one's ability to solve difficult problems and cope with adversity in demanding situations; people with high, compared to low, self-efficacy tend to put more constructive effort toward the completion of their goals in difficult situations (Sawatzky et al., 2012). Primary- and secondary-school-level Chinese teachers with higher, versus lower, general self-efficacy were found to be more likely to adopt adaptive coping strategies or emotion-oriented coping strategies (Shen, 2009). According to the stress model proposed by Houghton et al. (2012) both effective emotion regulation (i.e., high EI) and use of self-leadership strategies are associated with greater positive affect and greater individual self-efficacy. These linkages have also been supported by other researchers. For instance, emotion regulation strategies, which fall under the concept of EI, were found to be positively related to positive affect (Palomera & Brackett, 2006), and Steptoe, O'Donnell, Marmot, and Wardle (2008) found that positive affect had a correlation with active types of coping but not with avoidant coping. Moafian and Ghanizadeh (2009) also found that EI is positively related to self-efficacy, and Neck and Manz (1996) noted that the training of thought self-leadership promoted employees' mental performance and positive affect. Thus, the variables included in the stress-coping model examined in the present study are interrelated.

Whereas Houghton et al. (2012) presented some preliminary evidence for their mediation model through qualitative analysis of student comments, the suggested linkages among variables have not been adequately examined. Thus, Houghton et al. recommended testing the model within the context of higher education, and, accordingly, in the present study we tested the complete model with a sample of Chinese college students.

Method

Participants and Procedure

Participants were 575 students (250 males, 323 females, and two who did not report their gender) who were enrolled in an introductory psychology course at two universities located in Changsha, Hunan Province, China. Ages ranged

from 17 to 24 years ($M = 19.95$, $SD = 1.52$), comprising 33.6% freshmen, 44.4% sophomores, and 22.0% juniors.

Questionnaires were completed during class time then collected on the spot. Students were informed that participation was voluntary and that their responses would remain anonymous. They all provided written informed consent before completing the measures. The research protocol was approved by the ethics committee of Central South University.

Measures

Coping style. Active and passive coping styles were measured using the 20-item self-report Simplified Coping Style Questionnaire (Xie, 1998), which was designed for use with the Chinese general population. Responses are rated on a 4-point Likert-type scale ranging from 0 (*did not use at all*) to 3 (*used a lot*). The Cronbach's alpha coefficients for active and passive coping style subscales were .71 and .70, respectively, in this study.

Self-leadership. The various behaviors associated with self-leadership were measured using the 38-item Motivated Strategies for Learners Questionnaire, which was developed by Ho and Nesbit (2009) within the Chinese setting of Hong Kong. Responses are rated on a 5-point Likert-type scale ranging from 1 (*not all accurate*) to 5 (*completely accurate*). We used item parceling procedures to create composite indicators representing the 11 distinct self-leadership subscales, and confirmatory factor analysis provided acceptable evidence for the second-order model of self-leadership in the present study: chi square (χ^2 ; degrees of freedom [df] = 39) = 84.81, $p < .001$; comparative fit index (CFI) = .95; Tucker–Lewis index (TLI) = .093; root mean square error of approximation (RMSEA) = .06; standardized root mean square residual (SRMR) = .04. From there, the 11 subscales were categorized into the following second-order self-leadership strategies: (1) behavior-focused strategies, (2) constructive-thought-pattern strategies, and (3) natural-reward strategies and relation-based natural rewards.

Positive affect. Positive affect was assessed using the positive affect subscale (PAS) of the Chinese version (Qiu, 2006) of the Positive and Negative Affect Schedule (Watson et al., 1988). Participants rate each item in terms of how strongly they felt it in the past week, using a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). The Cronbach's alpha coefficient of the PAS was .87 in the present study.

Emotional intelligence. In contrast to the suggestion of Houghton et al. (2012), we chose to measure EI using the 16-item Wong and Law Emotional Intelligence Scale (WLEIS; Wong & Law, 2002) instead of the Mayer–Salovey–Caruso Emotional Intelligence Test (Mayer, Caruso, & Salovey, 2000). This is because

Wong, Wong, and Law (2007) found that in a Chinese context, the WLEIS has better predictive power and is more suitable for Chinese respondents. The WLEIS measures the four EI dimensions proposed by Davies et al. (1998), and Cronbach's alpha coefficients for these dimensions were .81, .83, .75, and .78, respectively, in the present study. Responses are rated on a 7-point Likert-type scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

General self-efficacy. The Chinese version (Zhang & Schwarzer, 1995) of the 10-item Generalized Self-Efficacy Scale was used to measure participants' general belief in their competence in dealing effectively with difficult situations (Schwarzer, 1993). Responses are rated on a 4-point Likert-type response scale from 1 (*absolutely incorrect*) to 4 (*absolutely correct*). The Cronbach's alpha coefficient was .85 in this study.

Data Analysis

Before conducting the main analyses, we checked the accuracy of data entry and ensured that there were no missing numbers. Calculation of the Mahalanobis distances among our study variables revealed no outliers (Stevens, 1984). Descriptive statistics (means and standard deviations) were calculated and Pearson's correlation analysis conducted using SPSS version 16.0.

Structural equation modeling with maximum likelihood estimation, implemented in Mplus 7, was used to estimate the statistical models. We used χ^2 , CFI, TLI, RMSEA, and SRMR to evaluate the goodness of fit of the model. CFI and TLI values over .95 suggest good fit, RMSEA values under .06–.08 suggest adequate fit, and SRMR values under .08 suggest adequate fit (Hu & Bentler, 1998).

Results

Relationships Among Study Variables

Table 1 shows the intercorrelations among all study variables, most of which were statistically significant at $p < .01$. EI, self-leadership strategies, positive affect, and general self-efficacy were all significantly and positively correlated with active coping style. Because the correlations between negative coping style and self-leadership strategies, positive affect, and general self-efficacy were nonsignificant, negative coping was not included in the next model analysis. Significant relationships were evident among EI, positive affect, and general self-efficacy, and self-leadership strategies were also significantly correlated with positive affect and general self-efficacy. All associations between EI and self-leadership indicators were statistically significant.

Table 1. *Intercorrelations Among Study Variables*

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-------------------|----------|-----------|---------|---------|--------|--------|--------|--------|--------|--------|--------|-----|----|
| 1 SEA | 4.024 | 0.990 | 1 | | | | | | | | | | |
| 2 UOE | 3.930 | 1.006 | .514** | 1 | | | | | | | | | |
| 3 ROE | 3.621 | 1.055 | .437** | .409** | 1 | | | | | | | | |
| 4 OEA | 3.899 | 0.978 | .570** | .417** | .354** | 1 | | | | | | | |
| 5 BFS | 2.812 | 0.471 | .365** | .524** | .232** | .330** | 1 | | | | | | |
| 6 CPT | 3.188 | 0.566 | 0.378** | .473** | .303** | .380** | .660** | 1 | | | | | |
| 7 NRS | 3.501 | 0.612 | .376** | .471** | .258** | .316** | .598** | .554** | 1 | | | | |
| 8 Positive affect | 3.176 | 0.639 | .259** | .390** | .163** | .225** | .322** | .282** | .412** | 1 | | | |
| 9 Active coping | 1.928 | 0.388 | .242** | .408** | .300** | .192** | .434** | .394** | .409** | .297** | 1 | | |
| 10 Passive coping | 1.235 | 0.472 | -.146** | -.122** | -.052 | .023 | .050 | .073 | -.050 | -.049 | .106** | 1 | |
| 11 Self-efficacy | 1.501 | 0.479 | .274** | .425** | .369** | .318** | .239** | .349** | .280** | .301** | .305** | .20 | 1 |

Note. ** $p < .01$; SEA = self-emotion appraisal; UOE = use of emotion; ROE = regulation of emotion; OEA = others' emotion appraisal; BFS = behavior-focused strategies; CTP = constructive-thought-pattern strategies; NRS = natural-reward strategies.

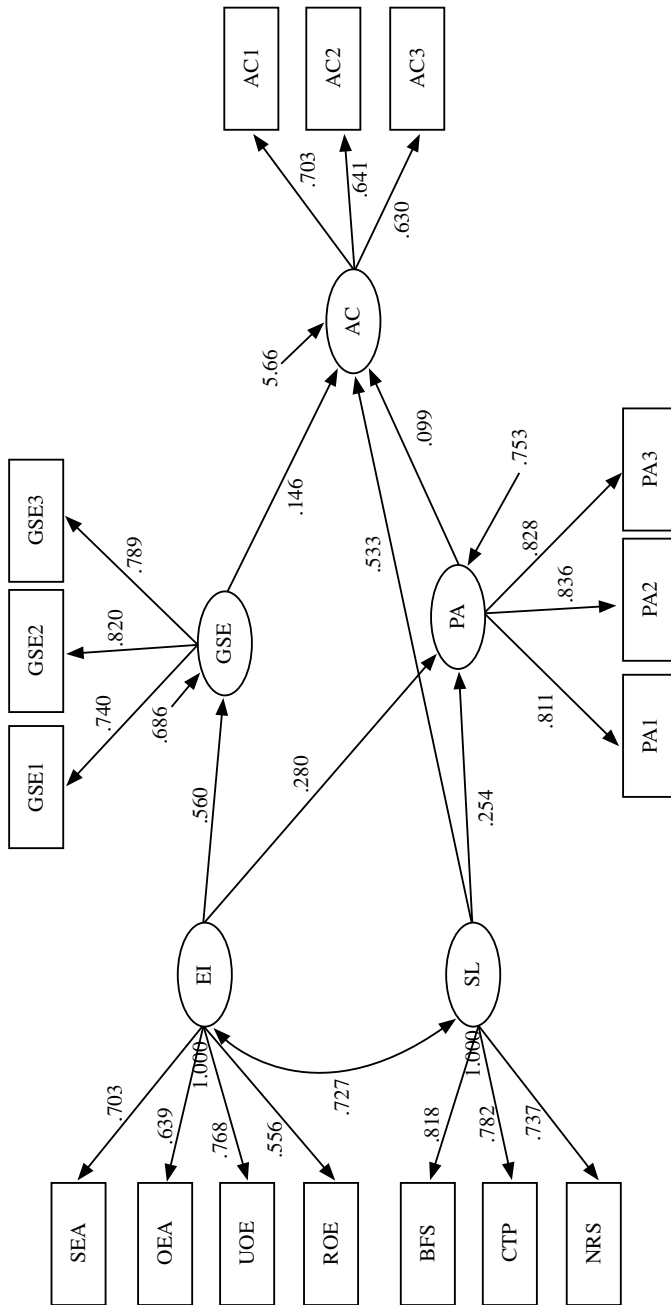


Figure 1. Final structural model of influencing factors.

Note. SEA = self-emotion appraisal, OEA = others' emotion appraisal, UOE = use of emotion, ROE = regulation of emotion, BFS = behavior-focused strategies, CTP = constructive-thought-pattern strategies, NRS = natural-reward strategies, EI = emotional intelligence, SL = self-leadership, PA = active affect, GSE = general self-efficacy, AC = active coping.

Path Analysis

First, we tested the direct effects of EI and self-leadership on coping style without incorporating the mediators. The direct standardized paths from EI and self-leadership to coping style were both significant. Then, we tested a partially mediated model (Model 1) that contained the mediators (positive affect and general self-efficacy) and direct paths from EI and self-leadership to coping style. The results showed that the model fitted the data well, $\chi^2(df = 95, N = 575) = 301.20, p < .001$; CFI = .939; TLI = .923; RMSEA = .065; SRMR = .049. However, the direct paths from EI to coping style and from self-leadership to general self-efficacy were not significant. Thus, we deleted these nonsignificant paths to create Model 2. The final model showed a good fit to the data, $\chi^2(df = 95, N = 575) = 327.56, p < .001$; CFI = .939; TLI = .925; RMSEA = .064; and SRMR = .049.

The path analysis results indicate that although EI did not have a direct effect on coping style, it did predict general self-efficacy, as predicted, and general self-efficacy then significantly predicted coping style. We followed the suggestion of Baron and Kenny (1986) with regard to examining the meditation effect and found that, as predicted, self-efficacy fully mediated the relationship between EI and active coping. Both EI and self-leadership had direct effects on positive affect, but the path from positive affect to coping style was nonsignificant. However, self-leadership did have a direct effect on coping style. Figure 1 also showed that EI has a close relationship with self-leadership ($p < .01$) in the model.

Mediation Effects Analysis

To determine the statistical significance of the mediating effects of self-efficacy in the relationship between EI and active coping, we conducted bootstrapping (specified sample size = 1,200). The 95% confidence interval (CI) of the indirect effect from EI to coping style through general self-efficacy ranged from .005 to .180, which did not overlap with zero. Therefore, because the direct path between EI and coping style was not significant (95% CI [-.210, .317], which overlaps with zero), general self-efficacy did function as a full mediator in the relationship between EI and coping style.

Discussion

The correlation results showed that all four aspects of EI were positively correlated with active coping, which is consistent with previous findings (Por, Barriball, Fitzpatrick, & Roberts, 2011). In our analysis of the hypothesized mediation model, although EI did not have a direct effect on active coping, the significant path from EI to general self-efficacy indicates that general

self-efficacy substantially mediates the relationship between EI and active coping. This relationship was further corroborated by the bootstrapping test, which suggests that college students with high, versus low, EI can effectively regulate their emotions and will experience greater self-efficacy and be better equipped to cope with stressful situations. This is consistent with the findings of Chan (2007). Again consistent with previous research findings (Palomera & Brackett, 2006), our results also demonstrate that high EI results in greater positive affect. However, we did not observe a meditation effect of positive affect in the relationship between EI and active coping.

Correlation results showed that all three categories of self-leadership were positively correlated with positive coping. Successful self-leaders are capable of judging stressful situations according to their capabilities and of finding ways to cope. In line with this point and our results, Dolbier et al. (2001) also found that self-leadership was positively associated with the employment of coping strategies aimed at eliminating or minimizing sources of stress. Further, we found a strong connection between EI and self-leadership, which are thought to encompass similar aspects of self-influence. Although the interaction relationship between EI and self-leadership was not specifically analyzed in this study, it has been suggested that they may interact (Day & Schleicher, 2006), such that individuals high in EI are more prone to employing self-leadership strategies. Likewise, self-leadership strategies may facilitate the process of emotion recognition and control (Manz, 2015).

Practical Implications, Limitations, and Future Research Directions

Our findings not only support the generalizability of the refined self-leadership measurement to the Chinese context (Ho & Nesbit, 2012), but also demonstrate that self-leadership predicts Chinese students' active coping, providing a potential focus for stress intervention practice. However, contrary to the proposed mediation model, neither self-efficacy nor positive affect was a significant mediator in the relationship between self-leadership and positive coping. Thus, this area requires further investigation. Given the important roles of EI and self-leadership in the process of effective stress management among Chinese students, we advise the use of curricula in which emotion regulation and self-leadership strategies are emphasized for this population. Training in EI strategies could also increase students' self-efficacy and facilitate effective coping with stress.

Our study has several limitations that may affect the generalizability of our findings. First, we examined only active (problem-focused) and passive (emotion-focused) coping styles. Coping effectiveness is both context-bound and situation-specific (Folkman & Moskowitz, 2004); thus, our use of broad distinctions, such as active and passive coping, might have limited the generalizability of our research to narrower contexts. Future researchers should, therefore,

examine the effect of EI and self-leadership on specific coping strategies, such as problem solving, distraction, cognitive restructuring, acceptance, avoidance, and withdrawal. Second, as our participants were students, caution should be exercised when generalizing the present findings to other populations, and future studies should test this model with other groups, such as, employees of organizations.

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