Emotional Intelligence in Health Care Professionals: Validation and Revision

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Abstract

EI has been an issue for studies and applications in areas of psychology, education, and management recently. However, the measurements developed from western populations are not appropriate for applying in oriental populations. Subsequently, WEIS was developed from populations with oriental culture to resolve the issue of applicability. While the validity and feasibility were gradually approved in some sectors of industrial workers, the applications on highly demanded medical professionals remain enigma. This study is to apply Wong’s Emotional Intelligence Scale (WEIS) in health care professionals who are working in emergency rooms under stressful routine clinical environment.

A longitudinal study was conducted in measuring WEIS and the subsequent organizational outcomes among 179 physicians and nurses. Dependent variables were organizational outcomes including job satisfaction, turnover intention, and turnover behavior. The primary measurements of research dimensions were performed including EI, Big five personality, and demographic data. The study has demonstrated that current WEIS measurement was failed to link with job satisfaction, turnover intention/behavior among critical care professionals. In addition, the discriminant validity of WEIS with Big five personality was not likely to satisfy the preset criteria.

The study has made augments for issues in feasibility of such measurement applying to critical care professionals. Qualitative interviews were made to offer critical instances for researchers to modify or construct professional-specific EI measurements in the future.

Key words: Emotional intelligence, WEIS, Health care Professionals
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The issues of working stress and the higher incidence of burnout for health care professionals in emergency room and intensive care units are growing concerned by health care administrators in the recent years, especially for the personnel in emergency rooms who face patients with life-threaten and require immediate responses to repetitive episodes of emotional stress (Sluiter, Beek, Frings-Dresen, & Ursin, 2003). Previous researchers indicated that health care professionals in emergency room have higher burnout scores for emotional exhaustion and depersonalization than medical professionals in other departments (Dorevitch & Forst, 2000; Keller & Koenig, 1989). Therefore, the ability of controlling or regulating one’s own emotion to decrease emotional exhaustion is a significant issue for medical staffs in an emergency room. Thus, the emerging inquiries of emotional intelligence (EI) measurement for health care providers in such circumstance are alerted. However, there are few studies exploring issues in EI measurement among the medical professional workers. Therefore, the use and validation of EI measurement, such as MSCEIT, in workers of health care settings remained novel for research (Borges, Stratton, Wagner, & Elam, 2009). This study aims to measure EI for health care professionals with WEIS to test the validity under such highly stressful working environment.

The definition and assessments of EI
Emotional intelligence (EI) has been an issue for studies and applications in areas of psychology, education, and management recently (Law, Wong, & Song, 2004) since the launch of EI construct into scientific community by Salovey and Mayer in 1990. A growing number of studies was found to examine the relationship between EI and human activities and behaviors (Extremera & Fernandez-Berrocal, 2005), including social interactions (Lopes, et al., 2004), resistance to stress (Mikolajczak, Luminet, & Menil, 2006), academic achievements (Marquez, Martin, & Brackett, 2006), job performance, leadership (Spector, 2005), and well-being (Mayer, Salovey, & Caruso, 2008).

EI had been studied for decades and two main models were developed for now. One was ‘the ability model’ focusing on aptitude for processing affective information (Zeidner, Matthews, & Roberts, 2004). The widely accepted definition pertains to this model is the ‘the ability to perceive emotions, to assess and generate emotions so as to assist thought, to understand emotions and emotional knowledge and to reflectively regulate emotions so as to promote emotional and intellectual growth’. The model was divided into four dimensions, including perception of emotion, emotional facilitation of thought, understanding emotions, and managing emotions (Mayer & Salovey, 1997). The measures of this model were well-known as Multifactor Emotional Intelligence Scale (MEIS) (Mayer, Caruso, & Salovey, 1999) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (J. D. Mayer, Salovey, Caruso, & Sitarenios, 2003), which were widely applied in industries.
(Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2006). The predictive validity of the MSCEIT was remained further clarifications (Brody, 2004). Another measurement was deemed as ‘mixed or trait models’ of which integrated a wide range of personality measurements into the term of EI (Freudenthaler & Neubauer, 2005). And the assessments are usually formed in self-report scale. The well-known Bar-On Emotional quotient Inventory(EQ-i) (Bar-On, 1997) and Bar-On Emotional quotient Inventory Short Form (Bar-On, 2002) seemed to be evidenced as a valid system (Schutte, et al., 1998).

Although the validation of MSCEIT has been provided, there are still some limitations in future applications of this EI test. One common mentioned problem was that the response of such questionnaire may vary among cultural disparities. This nature of measurement was granted as significant different from traditional intelligence quotient test, which was based on a choice with correct answer. Another limitation of MSCEIT is the requirements of certain educational background or knowledge by the participant in order to make a valid judgment (Wong, Wong, & Law, 2007). Thus, Wong et al. (2004) developed a forced choice EI measure (WEIS) for Chinese respondents. The measurement of WEIS is consisted of four dimensions, including appraisal and expression of emotion in oneself, appraisal and recognition of emotions in others, regulation of emotion in oneself and others, and use of emotion to facilitate performance (Davies, Stankov, & Roberts, 1998; Wong, Law, & Wong, 2004). WEIS measurement contains two major parts of which each includes 20 forced choice items.
Participants are asked to choose one out of the two types of abilities that best fitted their strengths in the first part. One type is relative to EI dimensions, the other is associated with other intelligence beyond EI. In the second part, participants are asked to make choice of their decision in a given scenarios (Wong, et al., 2004a). The reliability, convergence, and discriminant validity of WEIS were acceptable and documented previously (Wong, et al., 2004a). Further verifications in practical world of this instrument on job outcomes were found in Chinese populations of Hong Kong special district and mainland China (Wong, Foo, Wang, & Wong, 2007; Wong, Wong, et al., 2007).

In summary, there is converging consensus on the definition of EI while the standard method of EI measurement is still awaited for validations (Wong, et al., 2004; Wong, Wong, et al., 2007). Since cultural heritage could affect the applicability and validity of this EI measurement, a study has suggested to take such variations among different oriental societies into account due to disparities in languages, professionalisms, and traditional value (Fu, Peng, Kennedy, & Yukl, 2004). As the utilization and verification of this tool were found only in limited Chinese cultural societies, further validations and applications in other cultural societies and professional groups akin to original developed population were needed. Health care professionals in emergency room, such as physicians and nurses, are encountered tremendous pressure from handling life-threatening diseases/injuries under stressful conditions. A stability of emotional status is highly demanded for coping and maintaining
normal practice, therefore EI becomes an important measure for multidimensional applications. Since professional employees are treasure assets of a hospital, understanding their needs are significant management issue for human resources department of a medical institution. It is warranted that WEIS shall be validated before applying to management on health care professionals.

**Hypotheses**

EI scale was debated on whether the measurement assessed abilities or traits. The degree of association with Big Five personality was proposed to assess but a significant distinction between them was expected simultaneously (Wong, Law, & Wong, 2004).

*Hypothesis 1: WEIS will be correlated with Big five personality positively but discriminant validity existed.*

In addition, intelligence was proven to grow with increasing age and experience (Mayer, Caruso, & Salovey, 1999). Thus, the sub-hypotheses generated under this criterion are as follows.

*Hypothesis 2a: WEIS will be positively correlated with age.*

*Hypothesis 2b: WEIS will be positively correlated with years of tenure.*

Job satisfaction, one of human factors in an organization, which is the collection of feelings and beliefs that people have about their current jobs (George & Jones, 2005) plays an
important role of predicting relative organizational outcomes (Robbins & Judge, 2007). There are three widely accepted dimensions of job satisfaction including: 1) an emotional response to a job situation; 2) how well the outcomes meet or exceed expectations; 3) attitude to the work per se, such as payments, promotions, relationship with supervisors and coworkers (Luthans, 2002). There are two different ways of measuring job satisfaction. Firstly, a series of questions or statements about their jobs was developed to reflect one’s emotional satisfaction of their job (George & Jones, 2005) due to varied expectations of payment rewarding among individuals (Skalli, Theodossiou, & Vasileiou, 2008). Secondly, some researchers suggest a single-item measurement as reflection of one’s overall job satisfaction (Robbins & Judge, 2007; Wanous, Reichers, & Hudy, 1997), which has been found in a reasonable reliability of 0.7 (Wanous & Hudy, 2001). Furthermore, researchers found a positive correlation between job satisfaction and organizational performance (Nelson & Quick, 2006). The organization performance is especially important in emergency rooms because patient’s safety and medical quality are seriously encountered.

One of the most important determinants of job satisfaction was found as EI, which was addressed primarily in two major dimensions. Firstly, interpersonal skills, including emotional awareness and regulatory processes, which were associated with EI might improve ones’ social relationships thus affecting the experience of emotion and stress at work. Secondly, intrapersonal contents, the awareness of one’s emotion and utilization as to regulate
stress and negative emotion could result in better job performance (Kafetsios & Zampetakis, 2008). A number of literatures have found positive associations between EI and job satisfaction (Law, Wong, & Song, 2004; Sy, Tram, & O'Hara, 2006). Thus, new EI scale score should be correlated with medical professionals’ job satisfaction after controlling over personality (Wong, et al., 2004). The hypothesis is as below:

**Hypothesis 3: WEIS is positively associated with job satisfaction after controlling over personality.**

Turnover behavior, associated with job satisfaction, is another remarkable issue of doing the research in organizational behavior. The definition of turnover is ‘the movement of members across the boundary of an organization (Price, 1977). The high turnover rate would result in enormous costs and effort of recruiting, staffing and training (Mitchell, 2008), arise problems in losing human capital of an institute(George & Jones, 2005) and declining productivity (Abbasi & Hollman, 2000), especially true in health sectors. Leaving a medical organization of a physician would result in financial costs, patient care costs, and costs to organization that are disruptive and expensive (Misra-Hebert, et al., 2004). There are some variables contribute to physicians’ turnover, such as physician factors (age, salary, workload etc.) (Tilson, 1973), job satisfaction (Buehinder, Wilson, Melick, & Powe, 2001; Pathman, Williams, & Konrad, 1996), career satisfaction(Landon, et al., 2003), career development and economic issues (Misra-Hebert, et al., 2004). Also, leaving of nurses can affect
organizational capacity and productivity while waiting for new nurses be recruited (Hayes, et al., 2006). Therefore, if a hospital is suffering by nurses’ turnover, then the quality of care and operational cost are affected negatively as well. However, actual behavior of turnover is somewhat only a proportion of intention to turnover. There is a vast body of literature provide evidences that job satisfaction is one of significant predictors for turnover and intention to leave (Chen, Chu, Wang, & Lin, 2008; Law, et al., 2004; Pack, Turner, Roessler, & Robertson, 2007; Price, 2001). Personality is another factor, which could predict turnover behavior/intention. Emotional stability has been found to be negatively associated with turnover intention (Salgado, 2002). Some researchers were interested in the role of EI played in both intention and behavior to turnover but failed to prove (Gerits, Derksen, Verbruggen, & Katzko, 2005; Hader, 2007), while some association evidences were found (Wong & Law, 2002). Thus, the relationship between EI and turnover behavior/intention remains unclear, mixed findings were found in previous studies. However, heavy workload increase the likelihood of turnover (Hayes, et al., 2006). In addition, the way individuals respond to and cope with stress would be moderated by individual characteristics in the context of workplace stress (Cartwright & Pappas, 2008). Cope with stress is relative with emotional intelligence. Highly emotionally intelligence persons have better ability to cope with stress (Matthews, Zeidner, & Roberts, 2002), thus have less intention to quit the job. Therefore, in this study, the relationship between new EI scale score and turnover intention/ behavior is hypothesized.
Hypothesis 4a: WEIS is negatively associated with turnover intention after controlling personality.

Hypothesis 4b: WEIS is negatively associated with turnover behavior after controlling personality.

Therefore, the main purpose of this study is to test the validity of WEIS by physicians and nurses in department of emergency of a medical center in Taiwan.

Materials and Methods

Participants and Demographic Variables

This study was designed as a longitudinal survey with three stages and the target population was set as physicians and nurses from the emergency room of a medical center in Taiwan. The first stage was conducted in January of 2005, the measurements of EI, personality and demographic variables, including age, gender, job tenure, and professional characteristics, were performed. The measures of job satisfaction and intention to leave were executed during in February of 2006. The behavior of turnover was confirmed by asking the administrative leaders of the research setting one year after the second stage.

A total of 179 participants were collected in the first stage including 77 physicians and 102 nurses (57.0%). There were 65 male participants (mainly physicians) and 114 female participants (63.7%) recruited in this stage. There were 117 questionnaires collected in the
second stage, a response rate of 65.4% (117/179) was found. There were 36 male participants (mainly physicians) and 81 female participants (69.2%) recruited in the second stage.

**Measurements**

**Emotional Intelligence**

The measurement of WEIS follows the definition of EI, which is a set of abilities, includes 40 forced choice items. The four dimensions of EI include: 1) self emotional appraisal (SEA); 2) other’s emotional appraisal (OEA); 3) regulation of emotion (ROE); and 4) use of emotion (UOE). The WEIS is constructed by two parts: part A contains 20 ability pairs of which respondents are asked to choose one for best explaining their own strengths; Part B contains 20 scenarios of which respondents are asked to choose one for best reflecting their likelihood of reacting to each scenario (Wong, Wong, et al., 2007).

**Big Five personality**

The big five model has become a well-accepted personality measurement by psychologists in studies of industries and business for years (Barrick & Mount, 1991; Robbins, 1997). The five dimensions of personality traits includes 1) openness to experience; 2) neuroticism; 3) extraversion; 4) agreeableness and conscientiousness. A ‘Mini-Marker’ developed by Saucier (1994) used for verifications. This scale contains 40 items and was proven with acceptable reliability ($\alpha>0.78$) (Saucier, 1994).
Job satisfaction

In this study, we used a single global rating to measure employees’ job satisfaction. The question was ‘All things considered, how satisfied are you with your job?’. Participants circled number from 0 to 10 which correspond to from ‘extremely dissatisfaction’ to ‘extremely satisfaction’. Previous study has demonstrated that this measurement is as valid as summation-of-job-factors method (Robbins & Judge, 2007).

Turnover intention

In this section, we measured the degree of an employee’s willing to leave. The single question was ‘In what degree will you leave this institution in the next one year’. Respondents were asked to choose number 0 to 10 which inferred from ‘extremely possible’ to ‘extremely impossible’.

Turnover behavior

The turnover behavior was measured by records of human resource department in the hospital. During the study period, we found 17 participants were resigned as a turnover rate with 14.5% (17/117).

Statistical methods

Firstly, we performed Pearson correlation analysis to identify association among EI, big five personality, job satisfaction, turnover intention, age, and tenure. Secondly, confirmatory
factor analysis was conducted to examine the discriminant validity between EI and big five personality. Finally, linear regression analyses were performed to explore the relationship of EI, jobs satisfaction, and turnover intention while considering the role of personality. Logistic regression analysis was performed to explore the factors associated with turnover behavior.

**Results**

The mean score of EI, is 26.38 (SD=4.02). EI is positively associated with job tenure ($r=0.15; p<0.05$) and some specific dimensions of personality traits, such as openness ($r=0.22; p<0.01$), conscientiousness ($r=0.38; p<0.01$), and emotional stability ($r=0.31; p<0.01$). The correlation coefficient of job satisfaction and extraversion is 0.20 ($p<0.05$). The association between job satisfaction and turnover intention is negative significantly ($r=-0.21$). However, EI was not associated with job satisfaction or turnover intention in univariate analysis (Table 1). Cronbach’s alpha coefficient for openness, conscientiousness, extraversion, agreeableness, and emotional stability, were 0.82, 0.89, 0.85, 0.71, and 0.82, respectively. However, the internal consistency reliability for WEIS in the recent study was found as 0.52 lower than 0.70.

EI was significantly correlated with all personality dimensions except extraversion. The correlation coefficients were 0.22, 0.38, -0.03, 0.15, and 0.31 for openness, conscientiousness, extraversion, agreeableness, and emotional stability, respectively. EI score was shown to be positively but not statistically significant with age in study samples. Thus, the hypothesis 2a
was not supported. However, EI score was significantly correlated with years of tenure 
\((r=0.15, \ p\text{-value}<0.05)\). Thus, the hypothesis 2b was supported. (Table 1)

Model fitness test of the WEIS and Big five personality with six-factors structure had 
demonstrated that a \(\chi^2\) value of 172.41 with a degree of freedom of 62 and a Root Mean 
Square Error of Approximation (RMSEA) index of 0.11 (90%CI: 0.092-0.13) were in poor 
fitness result. The values of Normed Fit index (NFI=0.81), Non-Normed Fit Index 
(NNFI=0.80) and Comparative Fit Index (CFI=0.87) did not indicate satisfactory fitness of 
this model.

Models were constructed to explore the relationship among EI, job satisfaction, 
turnover intention, and turnover behavior (Table 2). In the first model, extraversion was 
found to be significantly associated with job satisfaction, but not as if in EI. Thus, hypothesis 3 
was not supported. In the second model, job satisfaction was negatively correlated with 
turnover intention. Those who had higher job satisfaction were less likely to have intention to 
leave (multivariable-adjusted regression coefficient=-0.34; \(p<0.1\)). Physicians were found to 
have lower tendency of intention to leave than nurses (multivariable-adjusted regression 
coefficient=-1.84; \(p<0.05\)). EI score was shown to be negatively but not statistically
significant with turnover intention in the second model. Thus, the hypothesis 4a was not supported by the analysis. The third model examined the effect of EI on turnover behavior. Those who had higher turnover intention were much likely to quit the job (multivariable-adjusted regression coefficient=0.39; p<0.05). In addition, openness was negatively correlated with turnover behavior (multivariable-adjusted regression coefficient=-0.12; p<0.05). However, EI score was shown to have no statistically significant with turnover behavior in the analysis. Thus, the hypothesis 4b was not supported.

Discussion

The purpose of this study is to test whether Wong’s emotional intelligence scale (WEIS) could practice for health care professionals in emergency room of the medical center in Taiwan as well. There are few studies published addressing the association between EI of current health care providers and its performance in patient-physician relationship (Borges, et al., 2009). In addition, the widely used scale, such as MSCEIT, is costly and time consuming in practice (Goldenberg, Matheson, & Mantler, 2006). Besides, self-report scale, such as EQ-i, is suffered by social desirability and faking (Day & Carroll, 2008). Thus, we used free
forced-choice WEIS which was developed in oriental society to avoid the issues raised previously. However, the feasibility of applying WEIS in the medical professionals in Taiwan is still unsettled. Hence, this study addresses the reliability and validity of WEIS among physicians and nurses in emergency rooms in Taiwan for elaborating of the feasibility problems. The WEIS was developed by Wong, Law and Wong (2004) to solve the problems occurred from culture discrepancy while using other EI scales developed from western culture. Wong et al. (2004) found that it was possible to develop scenario and ability-paired items to measure EI by a forced choice format with parts A and B appeared in WEIS. Wong et al. (2004) also pointed out that the choices of the 40 newly developed items were identified as comparable to social desirability ratings and relevant to meaning of EI, which was apparently distinctive from personality and mental intelligence (Wong, Law, & Wong, 2004). In addition, arguments raise while examining the purpose of utilizing EI as a measurement of emotional-related behavior instead of measuring emotional knowledge (Freudenthaler & Neubauer, 2005). WEIS is granted as a better instrument for measuring emotional-related behaviors than the way MSCEIT provided. In this sense, WEIS is more accurately measuring what respondents ‘would do’ while MSCEIT was primarily a knowledge based measuring of what one ‘should do’ (Wong, Foo, Wang, & Wong, 2007). Further evidence was provided by a study group, who believed that self-estimates of interpersonal abilities might be partly biased by a favorable self-description (Freudenthaler & Neubauer, 2005). Follow this
argument; part A of WEIS is a measure of one ‘should do’ rather than one ‘would do’. In contrary, part B of scenario EI items are more likely to be one ‘would do’, a closely related part for EI performance. Besides, some researchers have found that EI score was different among age groups (Luebbers, Downey, & Stough, 2007), but it was not supported by this study.

The internal consistency of WEIS in our sample was much lower than previous study and with unacceptable level (Cronbach’s $\alpha=0.52$) suggested by a previous document (Nunnally, 1967). As regard to the association between EI and personality, there were consistency observations with previous documents while difference existed in some points. The observation of significant correlation between personality traits of neuroticism, extraversion, agreeableness, and conscientiousness with measures of EI was concordant with previous findings (Amelang & Steinmayr, 2006; Extremera & Fernandez-Berrocal, 2005; Saklofske, Austin, & Minski, 2003; Wong, Foo, et al., 2007; Wong, et al., 2004; Wong, Wong, & Law, 2007). Some researchers found no significant correlation between EI and agreeableness (Freudenthaler & Neubauer, 2005; Fukunishi, et al., 2001), but not in the recent study. The poor fitness of six-factor model was shown in our analysis suggesting a characteristic of unsatisfactory discriminant validity between WEIS and personality. The observations of high correlation between EI and personality traits in this study than those in previous studies were believed due to the divergence of study populations. Health care
professionals with high education level and professionalism belong to a specific occupational
group skewed to populations tested by original studies (Wong, Foo, et al., 2007; Wong, et al.,
2004; Wong, Wong, et al., 2007). Therefore, the future applications of WEIS in health care
professionals need major modifications and validations. As the consequence, WEIS was not
able to demonstrate significant association with job satisfaction, however a significant
correlation was reported previously (Zeidner, Roberts, & Matthews, 2008). In addition, the
correlation with turnover intention and turnover behavior was unlikely existed in this study as
well. Some researchers suggested that the use of EI should consider occupational-specificity
characteristics (Zeidner, et al., 2004). Thus, researchers must draw back on professional
judgment to gauge the role of EI in different contexts (Zeidner, et al., 2008). In other words,
WEIS was called for modifications because the development was from certain populations
such as college students, MBA students, and employees in a hotel (Wong, et al., 2004). Since
the medical professionals under stressful job demanding conditions were quite distinctive, the
development of a specific EI scale for health care professionals is wanted. There are some
limitations of this study. First, a slightly different measurement was made for shortening the
length of questionnaire. Forced-choice items EI is implemented for measuring score of health
care givers rather than WLEIS, an evaluation of convergent validation is not possible in such
circumstance. Therefore, this study is lacking of convergent validation estimated by WEIS
and WLEIS. Second, the different culture impact from societies of Hong Kong and Taiwan
was noticeable in such studies. Therefore, suitableness of using WEIS in health care givers with different cultural impact is still a puzzle to be solved. Thirdly, we use single global rating to measure job satisfaction and turnover intention. This might result in ambiguous inference when comparing with pervious study. Finally, the period of this study could be prolonged. The interval between testing of turnover intention and observing actual to turnover was only one year. Postponing the ending of this study might make the relationship among those factors in this study more clearly.

Conclusions

The particular EI measurement on this unique job category in emergency room is deemed as emergency needs in the human resource management of health care settings. We found that WEIS did not satisfy the requirements for future applications in the field. Based on the fact that EI was proven to be able to coach (McEnrue & Groves, 2006; Wong, Foo, Wang, & Wong, 2007; Wong, et al., 2004), human resource managers should pay more attentions to the issues related to EI. However, one should make sure that the measurement is reliable before applications as management tool. This study has demonstrated is to suggest a new EI scale developed for current health care professional workers.
References


Table 1: The correlation coefficient among EI, Big five personality and demographic data.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>mean(sd)</th>
<th>EI</th>
<th>Openness</th>
<th>Conscientiousness</th>
<th>Extraversion</th>
<th>Agreeableness</th>
<th>Emotional stability</th>
<th>Job satisfaction</th>
<th>Turnover intention</th>
<th>Age</th>
<th>Tenure</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI</td>
<td>179</td>
<td>26.38(4.02)</td>
<td>1.00</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Openness</td>
<td>179</td>
<td>45.87(8.48)</td>
<td>0.22*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Conscientiousness</td>
<td>179</td>
<td>50.88(8.82)</td>
<td>0.38**</td>
<td>0.54**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Extraversion</td>
<td>179</td>
<td>43.06(9.31)</td>
<td>-0.03</td>
<td>0.27*</td>
<td>0.12</td>
<td>1.00</td>
<td></td>
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<tr>
<td>Agreeableness</td>
<td>179</td>
<td>50.41(6.44)</td>
<td>0.15</td>
<td>0.23*</td>
<td>0.45**</td>
<td>0.17*</td>
<td>1.00</td>
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<td>Emotional stability</td>
<td>179</td>
<td>45.16(9.20)</td>
<td>0.31**</td>
<td>0.20*</td>
<td>0.32**</td>
<td>0.17*</td>
<td>0.30**</td>
<td>1.00</td>
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<td>Job satisfaction</td>
<td>117</td>
<td>7.55(1.27)</td>
<td>0.07</td>
<td>0.06</td>
<td>0.06</td>
<td>0.20*</td>
<td>0.06</td>
<td>0.17</td>
<td>1.00</td>
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<tr>
<td>Turnover intention</td>
<td>116</td>
<td>3.13(2.74)</td>
<td>-0.05</td>
<td>-0.03</td>
<td>-0.13</td>
<td>-0.06</td>
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<td>-0.12</td>
<td>-0.21*</td>
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<tr>
<td>Age</td>
<td>177</td>
<td>29.67(5.51)</td>
<td>0.12</td>
<td>0.08</td>
<td>0.21*</td>
<td>-0.08</td>
<td>0.27*</td>
<td>0.25*</td>
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<tr>
<td>Tenure</td>
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<td>5.00(4.13)</td>
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<td>0.08</td>
<td>0.28*</td>
<td>-0.05</td>
<td>0.26*</td>
<td>0.16*</td>
<td>0.11</td>
<td>-0.05</td>
<td>0.72**</td>
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</table>

Note: * p-value<0.05; ** p-value<0.001
Table 2: The regression model for testing the predictive validity of EI

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>job satisfaction&lt;sup&gt;a&lt;/sup&gt;</th>
<th>turnover intention&lt;sup&gt;a&lt;/sup&gt;</th>
<th>turnover&lt;sup&gt;b&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>EI</td>
<td>0.03</td>
<td>-0.05</td>
<td>-0.05</td>
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<tr>
<td>Job satisfaction</td>
<td>-</td>
<td>-0.34*</td>
<td>-0.18</td>
</tr>
<tr>
<td>turnover intention</td>
<td>-</td>
<td>-</td>
<td>0.39**</td>
</tr>
<tr>
<td>Openness</td>
<td>-0.005</td>
<td>0.04</td>
<td>-0.12**</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.008</td>
<td>-0.04</td>
<td>0.05</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.03**</td>
<td>-0.02</td>
<td>0.008</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.004</td>
<td>0.011</td>
<td>-0.07</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.016</td>
<td>0.0009</td>
<td>-0.006</td>
</tr>
<tr>
<td>Job category (1:physicians; 0:nurses)</td>
<td>0.31</td>
<td>-1.84**</td>
<td>1.69**</td>
</tr>
<tr>
<td>Tenure</td>
<td>0.04</td>
<td>-0.03</td>
<td>-0.18</td>
</tr>
<tr>
<td>R²</td>
<td>0.09</td>
<td>0.15</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: * p-value<0.1; ** p-value<0.05; a: linear regression; b: logistic regression.