

Shyness and Subjective Well-being: The Role of Emotional Intelligence and Social Support

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Abstract This study examined the role of emotional intelligence (EI) and social support on the relationship between shyness and subjective well-being (SWB) in Chinese college students. The participants were 496 students, with an age range of 18–24, who were attending two different Chinese colleges. Data were collected by using the paper and pencil assessments including Cheek and Buss shyness scale, Wong and Law emotional intelligence scale, multi-dimensional scale of perceived social support, positive affect and negative affect scale and satisfaction with life scale. Path analysis showed that EI and social support partially mediated the relationship between shyness and SWB. The final model also revealed a significant path from shyness through EI and social support to SWB. Furthermore, a multi-group analysis found that the paths did not differ across sexes, but significantly differed between urban and rural areas. The results are discussed in terms of the conceptual context.

Keywords Shyness · Emotional intelligence · Social support · Subjective well-being

1 Introduction

Research exploring subjective well-being (SWB) and its predictors is important because it is a common and effective factor that fosters optimal psychological functioning. SWB

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consists of three components: positive affect (PA); negative affect (NA); and satisfaction with life (SWL) (Diener and Lucas 1999). Thus, it refers to three correlated but distinct factors: the relative existence of positive affect, absence of negative affect, and satisfaction with life.

There is a long history in psychological research which has examined the relationship between shyness and subjective well-being. Numerous studies have provided evidence that shy people usually reported more negative affect and less positive affect (Eisenberg et al. 1995; Findlay and Coplan 2008; Findlay et al. 2009; Twenge 2002), and lower satisfaction with life (Gross and John 2003; Neto 1993; Rapee et al. 2011) than other non-shy persons. Though the literature is clear that shyness is related to SWB, far less is known about the mechanisms involved. What potential mediating processes can contribute the buffering/beneficial effects of shyness on SWB?

A likely candidate to mediate the relationship between shyness and SWB is Emotional intelligence (EI). Individuals with high emotional abilities are thought to possess a greater capacity to perceive, use, understand, and manage their emotions which facilitates a greater sense of subjective well-being (Mayer and Salovey 1997). A number of related literatures have confirmed to account for the relationship between EI and SWB (Kong et al. 2012a; Mikolajczak et al. 2008; Petrides et al. 2007; Salovey et al. 1999). Some researchers also showed that greater shyness was related to low scores for EI in high school students and nurses (Gerits et al. 2004; Márquez et al. 2006). Furthermore, it should be mentioned that EI has been found to mediate the relationship between other personality or sociological factors and SWB (e.g., Gannon and Ranzijn 2005; Schutte and Malouff 2011). The combined observations of EI's relation with both shyness and SWB support the idea that EI might mediate the relation between shyness and SWB.

Another likely candidate to mediate the shyness–SWB relationship is social support. First, it is a robust finding that people who receive a high level of social support enjoy enhanced SWB (e.g., Chalise et al. 2007; Kahn et al. 2003; Karademas 2006; Kong and You 2011; Kong et al. 2012a, b). Singh (2005) has proposed that social support was an important sociological factor for SWB, as it provided one a feeling of being loved, cared for, esteemed and valued and a feeling of belonging to a network of communication and mutual belongingness. Research by Jackson et al. (2002) also provided evidence supporting the significant correlation between shyness and social support. Shy people usually take an evasive attitude on social interaction, easily lead to excessive negative emotions and have low self-esteem, which makes them less involved in social activities, and thus the social support they perceived is even lower. According to the above mentioned, low SWB of shy people may be at least partially due to the low social support they perceived. In addition, other studies have showed that EI revealed significant zero-order correlations with several indicators of quality of social interaction which include the social support from parents and friends (e.g., Gallagher and Vella-Brodrick 2008; Kong et al. 2012a; Lopes et al. 2003). Koydemir et al. (2012) have suggested that EI can be used as an effective predictor of social support. Furthermore, social support has been found to mediate the relationship between EI and other protective or vulnerability factors (e.g., Berges and Augusto 2007; Gallagher and Vella-Brodrick 2008).

In spite of the frequent observation that EI and social support are indeed related to shyness and SWB, the present study set out first to clarify whether EI and social support are really differentially and specifically associated with the relationship between shyness and SWB, respectively. This would broaden our consolidated understanding of the mechanism under which shyness and SWB are connected. Second, testing the mediation models in

Asian culture, especially in Chinese culture would provide meaningful evidence for the external validity.

Based on the previous studies, we proposed the following hypotheses: (1) Shyness significantly predicted SWB. (2) Emotional intelligence mediated the relationship between shyness and SWB. (3) Social support mediated the relationship between shyness and SWB.

2 Method

2.1 Participants

The participants were 496 students (210 males and 286 females) from two colleges in Xi'an and Beijing, two mid-sized cities in the middle and northern part of China. The age range was 18–24 ($M = 20.84$, $SD = 1.257$).

2.2 Measures

2.2.1 Cheek and Buss Shyness Scale (CBSS)

The CBSS, developed by Cheek and Buss (1981) consists of 14 items, four of which are reverse scored. Participants are instructed to indicate the extent they generally feel using a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. Higher scores indicate higher levels of shyness. In this study, the Cronbach alpha coefficient for the CBSS was .85.

2.2.2 Wong and Law Emotional Intelligence Scale (WLEIS)

The WLEIS, developed by Wong and Law (2002) consists of 16 brief statements that are rated on a five-point Likert-type scale from strongly disagree to strongly agree to assess four ability dimensions that are consistent with Mayer and Salovey (1997) definition of EI: Self Emotion Appraisals (SEA) ($\alpha = .75$), Others' Emotion Appraisals (OEA) ($\alpha = .83$), Regulation of Emotion (ROE) ($\alpha = .80$), Use of Emotion (UOE) ($\alpha = .75$). The WLEIS had been used in China previously (e.g., Wong and Law 2002; Law et al. 2004). In this study, the Cronbach alpha coefficient for the WLEIS was .89.

2.2.3 Multi-Dimensional Scale of Perceived Social Support (MSPSS)

The MSPSS, developed by Zimet et al. (1988) consists of 12 items designed to assess significant other's support ($\alpha = .85$), family's support ($\alpha = .85$), friends' support ($\alpha = .89$). The participants rated the items on a seven-point Likert-type response format (1 = very strongly disagree; 7 = very strongly agree). In this study, Cronbach alpha coefficient for the MSPSS was .93.

2.2.4 Positive Affect and Negative Affect Scale (PANAS)

The PANAS, developed by Kuppens et al. (2008), consists of 14 words (six of which describe positive affect; the other eight describe negative affect). Participants are instructed to indicate the extent to which they generally feel each affect using a seven-point scale

ranging from 1 = very strongly disagree to 7 = very strongly agree. In this study, the Cronbach alpha coefficients for the positive affect and negative affect subscales were .83 and .84, respectively.

2.2.5 Satisfaction with Life Scale (SWLS)

The SWLS, developed by Diener et al. (1985) consists of 5 brief statements to measure the satisfaction with life component of SWB that are rated on a seven-point Likert-type scale from very strongly disagree to very strongly agree. In this study, Cronbach alpha coefficient for the SWLS was .81.

2.3 Procedure

Four hundred and ninety-six students from two universities in Xi'an and Beijing voluntarily participated in the test. Self-report questionnaires were completed in a classroom after obtaining informed consent. It took about 20 min for the students to complete all the instruments.

3 Results

3.1 Zero-Order Correlations

Table 1 shows Bonferroni-corrected Pearson correlation coefficients for all measures. The correlation matrix revealed that shyness, EI and social support were significantly correlated with SWB. Shyness correlated negatively, and EI correlated positively with social support.

3.2 Model Testing

The AMOS 7.0 program was used to examine whether the pathway from shyness to SWB was mediated by EI and social support. In order to control for inflated measurement errors due to multiple items for the latent variable, three item parcels were created for shyness. Due to the unequal numbers of items in each parcel, the average scores of the items were used. The models were evaluated by means of several fit indices (see Hu and Bentler 1999;

Table 1 Descriptive statistics and zero-order correlations for all measures

| Measure | M (SD) | 1 | 2 | 3 | 4 | 5 | 6 |
|---------|---------------|---------|---------|---------|---------|---------|---|
| CBSS | 39.11 (8.05) | 1 | | | | | |
| WLEIS | 58.08 (8.89) | -.33*** | 1 | | | | |
| MSPSS | 61.56 (13.06) | -.29*** | .37*** | 1 | | | |
| PA | 25.86 (6.17) | -.29*** | .36*** | .42*** | 1 | | |
| NA | 23.39 (8.00) | .26*** | -.31*** | -.34*** | -.30*** | 1 | |
| SWLS | 18.60 (5.49) | -.25*** | .25*** | .34*** | .37*** | -.26*** | 1 |

CBSS Cheek and Buss shyness scale; WLEIS Wong and Law emotional intelligence scale; MSPSS multi-dimensional scale of perceived social support; PA positive affect and negative affect scale, positive affect; NA positive affect and negative affect scale, negative affect; SWLS satisfaction with life scale

*** $p < .001$

Quintana and Maxwell 1999): Chi-square statistics; root-mean-square error of approximation (RMSEA), standardized root-mean-square residual (SRMR): best if below .06; comparative fit index (CFI): best if above .95. In order to find the best model, we additionally examined the Akaike Information Criterion (AIC: Akaike 1987) which represented whether the hypothesized model was better fitted and Expected Cross-Validation Index (ECVI: Browne and Cudeck 1993) which exhibited the potential extent for replication.

We first tested the measurement model, which involved four latent constructs (shyness, EI, social support, SWB) and 13 observed variables. An initial test of the measurement model generated a very good fit to the data: χ^2 (59, $N = 496$) = 139.243, $p < .001$; RMSEA = .052; SRMR = .04; CFI = .97. All the factor loadings for the indicators on the latent variables were significant ($p < .001$), indicating that all the latent constructs were well represented by their indicators. Moreover, all the latent constructs were significantly correlated in conceptually expected ways ($p < .001$).

The direct path coefficient from the predictor (shyness) to the criterion (loneliness) in the absence of mediators was significant, $r = .68$, $p < .001$. In order to test for mediation, two models were compared: a full mediation model in which shyness and SWB are indirectly related through EI and social support (Model 1), and a partial mediation model including direct and indirect paths (Model 2). A full mediation model (Model 1) adequately fit the data, χ^2 (61, $N = 496$) = 189.608, $p < .001$; RMSEA = .065; SRMR = .08; CFI = .95. A partially-mediated model (Model 2) with two mediators (EI and social support) between shyness and SWB and a direct path from shyness to SWB also revealed a good fit to the data: χ^2 (60, $N = 496$) = 178.137, $p < .001$; RMSEA = .063; SRMR = .07; CFI = .95. When Model 1 and Model 2 were compared, the significant Chi-square difference, $\Delta\chi^2$ (1, $N = 496$) = 11.47, $p = .001$, indicated that Model 2 provides a better fit to the data than Model 1.

In order to find the best model, one alternative model was tested. A path from EI to social support was added to the partially-mediated model (Model 3) and the results showed a very good fit to the data (Table 2). When Model 2 and Model 3 were compared, the significant Chi-square difference, $\Delta\chi^2$ (1, $N = 496$) = 40.08, $p < .001$, indicated that this additional path significantly contributed to the model. Both the path coefficient from EI to social support ($\beta = .56$) and the path from shyness to SWB ($\beta = -.27$) were statistically significant. The results suggested that Model 3 is better than Model 2. Taken together, Model 3 was selected as the best model (Fig. 1). Shyness contributed to SWB through EI and social support. Notably, the path of shyness \rightarrow EI \rightarrow social support \rightarrow SWB was significant, indicating that EI of shy individuals are often damaged, which may make them less likely to perceive the support from others and finally lower their subjective well-being.

The Bootstrap estimation procedure in AMOS was employed to test the significance of the mediating effects of EI and social support (a bootstrap sample of 1,000 was specified). The basic principle for the bootstrapping approach is that the indirect effect estimates caused by direct effects generally do not follow the normal distribution. In this case, the statistical tests of indirect effect assumed on the normal distribution assumption will be powerless due to the imprecision of the standard error estimates and confidence intervals which were just calculated based on the assumption of normal distribution (MacKinnon et al. 2004). Mackinnon et al. (2004) have suggested that the bootstrap method yields the most accurate confidence intervals for indirect effects. Table 3 displays the indirect effects and their associated 95 % confidence intervals. As shown in Table 3, shyness exerted significant indirect effects on SWB via EI and social support. The indirect effects of shyness on social support via EI and EI on SWB via social support were also significant.

Table 2 Fit indices among competing models

| | Model 1 | Model 2 | Model 3 |
|--------------|------------|------------|-------------------|
| χ^2 | 189.608 | 178.137 | 138.061 |
| <i>df</i> | 61 | 60 | 59 |
| RMSEA | .065 | .063 | .052 |
| CI for RMSEA | .055, .076 | .052, .074 | .041, .063 |
| SRMR | .08 | .07 | .04 |
| CFI | .95 | .95 | .97 |
| NFI | .93 | .93 | .95 |
| GFI | .95 | .95 | .96 |
| AIC | 267.82 | 249.608 | 240.137 |
| ECVI | .504 | .485 | .408 |
| CI for ECVI | .428, .596 | .412, .574 | .347, .485 |

N = 496. Boldface type represents the best model
RMSEA root-mean-square error of approximation, *CI* confidence interval, *SRMR* standardized root-mean-square residual, *CFI* comparative fit index, *AIC* Akaike information criterion, *ECVI* expected cross-validation index

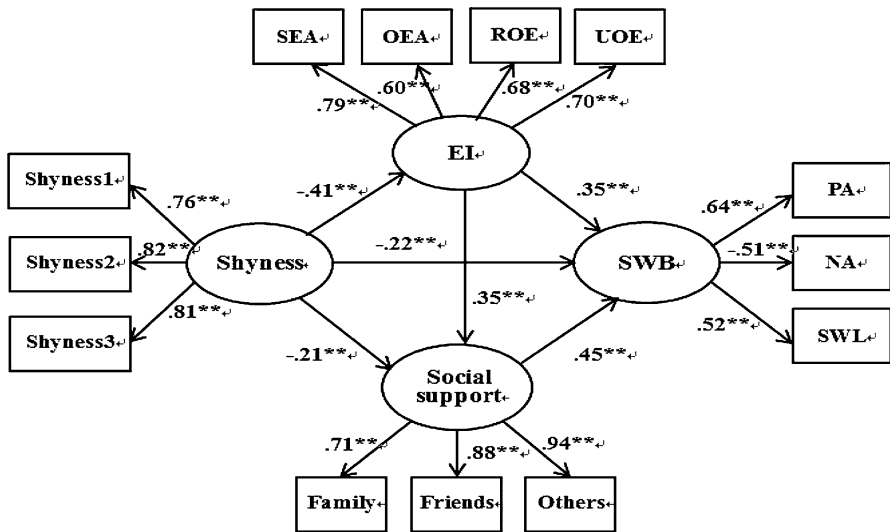


Fig. 1 The finalized structural model (N = 496). Note. Factor loadings are standardized. Shyness 1–shyness 3 = three parcels of shyness; *EI* emotional intelligence, *SEA* self-emotion appraisals, *OEA* others’ emotion appraisals, *ROE* regulation of emotion, *UOE* use of emotion, *SWB* subjective well-being, *PA* positive affect, *NA* negative affect, *SWL* satisfaction with life. Form. ** $p < .01$

Finally, we used the multi-group analysis to identify whether there were significant differences between male and female, urban and rural on the path coefficients. The non-significant Chi-square differences between the two models in which one allows the structural paths to vary across sexes, another constrains the structural paths across sexes to be equal, $\Delta\chi^2(6, N = 496) = 7.01, p > .05$, suggested that the final model was not found to differ by gender. The significant Chi-square differences between the model which allows the structural paths to vary across urban and rural, and another model which constrains the structural paths across urban and rural to be equal, $\Delta\chi^2(6, N = 496) = 12.87, p < .05$, indicated that the final model was significantly different across participants who reported being from urban versus rural settings. We also calculated the critical ratios of differences (CRD), which

Table 3 Indirect effects and 95 % confidence intervals for the third model

| Model pathways | Estimated | 95 % CI | |
|--------------------------------|--------------------|---------|-------|
| | | Lower | Upper |
| Shyness → EI → SWB | -.15 ^a | -.16 | -.11 |
| Shyness → social support → SWB | -.09 ^a | -.10 | -.06 |
| Shyness → EI → social support | -.145 ^a | -.147 | -.11 |
| EI → social support → SWB | .16 ^a | .07 | .27 |

^a Empirical 95 % confidence interval does not overlap with zero

indicated that there was a significant difference between the two parameter estimates at $p < .05$ when they were greater than 1.96. All the structural paths of the final model were not observed to differ by gender; however, the structural path from shyness to SWB was identified to be significantly different between urban and rural participants, $CRD = 2.14$, $p < .05$. The path coefficient for urban ($\beta = -.46$, $p < .001$) was greater than the coefficient for rural ($\beta = -.13$, $p > .05$), indicating that in Chinese rural area, EI and social support fully mediated the relationship between shyness and SWB; but in urban area, in addition to EI and social support, there are other mediators between shyness and SWB.

4 Discussion

The current study was designed to explore the mediator effects of EI and social support on the relationship between shyness and SWB in Chinese college students. As expected, shyness was an effective predictor of SWB. The SWB of shy persons was significantly lower than the SWB of less shy persons. This is in line with the findings of the previous studies (Buss and Plomin 1984; Gross and John 2003). The best model from this study indicated shyness and SWB were partially mediated by EI. This result is consistent with earlier studies suggesting a relationship between EI and SWB (Mikolajczak et al. 2008; Petrides et al. 2007; Salovey et al. 1999) and shyness (Gerits et al. 2004; Márquez et al. 2006). The current finding indicates that level of emotional intelligence is often inadequate in shy individuals, which could possibly damage their abilities to perceive, appraise, manage and express emotions, thus causing them to experience excessive negative emotions, thereby reducing their subjective well-being.

The best model from the current study also supports the mediation effect of social support between shyness and SWB. This finding is consistent with the previous studies (Chalise et al. 2007; Jackson et al. 2002; Kahn et al. 2003; Karademas 2006; Singh 2005) that confirmed the significant correlation between shyness, SWB and social support. The current finding suggests that due to the incorrect self-evaluation and lacking of confidence, shy people usually stay away from social situations to relieve their painful feelings. In this condition, social support they obtained and perceived is much less than their peers, thus increasing their negative affect while reducing their positive affect and life satisfaction, thereby lowering their SWB.

The study also revealed the path of shyness → EI → social support → SWB was significant. This path indicates that social support is a mediator between EI and SWB while EI partially mediates the relationship between shyness and social support. This result is consistent with previous researches reporting a significant positive correlation between EI and social support (Berges and Augusto 2007; Gallagher and Vella-Brodrick 2008; Kong et al. 2012a; Koydemir et al. 2012; Lopes et al. 2003). In the present study, level of

emotional intelligence is often inadequate in shy individuals, which may prevent the management and use of their own and others' emotions. EI involves the ability that a person has to interrupt his or her negative emotional states and to prolong the positive ones. So, a low EI will contribute to a less social support search from others and this will lead to lower their SWB because, as Singh (2005) found, participants who reported lower levels of social support felt lower levels of SWB.

The findings regarding urban and rural differences indicate that in Chinese rural area, the lower SWB caused by shyness is entirely due to the defect of EI and the lack of social support. But in urban area, besides EI and social support, there are other factors that can mediate the relationship between shyness and SWB. According to Knight et al. (2009) and Chen et al. (2009), compared to rural area, the overly complicated external environment in urban area—such as economic development, educational level, improved communications, spread of the media and rising materialism—are more likely to have their effect on shyness and SWB. In addition to these external factors, some internal elements (e.g., self-esteem, self-efficacy) may also buffer the negative effect of shyness on SWB. Given this finding, this is clearly an area that needs further exploration.

Although this study breaks new ground in several ways, it is certainly not without limitations, which leave enough space for future research to verify and expand the findings. The first limitation is that any causal relationships among the variables should be drawn with caution due to the correlational cross-sectional nature of the study. Future longitudinal or experimental studies will facilitate more causal evaluations. The second limitation is that the data in this study were collected only via self-report scales. Thus, an important goal of future research lies in investigating the variables by multiple methods (e.g., experience-sampling, physiological markers, etc.) may reduce the “subjectivity” limitation of the findings. The third limitation is that the study group was composed of high numbers of participants in Chinese culture, which limits the generalizability of the findings. The fourth limitation is that we did not control for several personal dimensions that may influence the relationship between shyness and SWB, such as extraversion and neuroticism.

Notwithstanding these limitations, the present study represents the first attempt to investigate both EI and social support in one and the same study to extend our understanding of the mechanisms between shyness and SWB. The employment of Chinese college students provided meaningful evidence for external validity. In addition, the significant path from shyness through EI and social support to SWB shed light on the underlying mechanisms of the vicious cycle that leads shy individuals to suffer from unhappiness. Under such circumstances, it is likely that employing EI improvement programs and enhancing the social support for shy people can have far reaching effects.

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