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REGULAR ARTICLE

The Role of Resilience and Coping Styles in Subjective Well-Being Among Chinese University Students

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Abstract This study examined the relationship among resilience, coping styles, and subjective well-being (SWB) among 239 Chinese university students, with a focus on the mediating role of coping styles in the relationship between resilience and SWB and the moderating function of resilience in the prediction of SWB from coping styles. Results of latent variable modeling showed that (a) resilience and coping styles significantly predicted SWB, (b) emotion-oriented coping style served as a significant mediator in the relationship between resilience and negative affect, and (c) resilience acted as a moderator in the relationship between task-oriented coping style and life satisfaction. Specifically, for students who showed lower levels of resilience, the adoption of task-oriented coping styles facilitated their life satisfaction. However, the higher levels of resilience seemed not to further the positive effect of the adoption of task-oriented coping styles on students' life satisfaction. Implications for university students' positive education are discussed.

Keywords Resilience · Coping styles · Subjective well-being · Life satisfaction · Positive/negative affect · Chinese university students

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Introduction

This study investigated how resilience and coping styles were related to students' subjective well-being (SWB; i.e., life satisfaction and positive and negative affect). SWB is probably one of the most predominant constructs in relation to healthy development that psychologists, educators, and policy makers are all interest in. How to cultivate and promote SWB has long been the concern of psychologists and educators. With the movement of positive psychology (Seligman and Csikszentmihalyi 2000), human strengths and virtues (Zautra et al. 2010) are highlighted for well-being or happiness, among which, resilience and coping styles are included.

Previous studies in the Western context have evidenced that resilience may help college students with mental health issues cope more effectively with the difficulties in college learning (Hartley 2012, 2013; Steinhardt and Dolbier 2008). More importantly, positive education that focuses on resilience and certain coping skills has been shown to benefit university students' well-being, reduce their symptoms of depression and anxiety, and improve the optimistic explanatory styles, at least in a short-term period (Seligman et al. 2007). It seems that to be resilient and to have effective coping styles may not only promote students' well-being, but also benefit their learning and achievement. Nevertheless, along with the encouraging findings, inconsistencies are also identified behind the resilience programs (Kristjánsson 2012). Therefore, further research is needed to fully understand how resilience and coping styles affect SWB. In fact, research to date has paid less attention to the combined effects that resilience and coping styles may have on SWB. As such, to examine the combined effects may not only enrich our understanding of how resilience and coping styles worked closely together in

exerting their influence on students' SWB, but also nourish the development of positive education.

Resilience and Subjective Well-Being

Resilience is "one of the most heuristic and integrative concepts in 21st-century thinking in the social sciences" (Reich et al. 2010, p. xi; Zolkoski and Bullock 2012). However, how to define resilience seems opaque (Panter-Brick and Leckman 2013). There are some debates about the nature of resilience, such as *is resilience a trait or a process*, *is resilience the cause or outcome*, and *how general are resilience models* (Reich et al. 2010). This study took the trait approach and defined resilience as individual differences in capacities and positive attributes that help people cope positively with environmental challenges and protect them from mental disorders under stress (Anthony 2002; Skodol 2010). This definition is consistent with the emphasis of positive psychology on human strengths and virtues (Zautra et al. 2010) and suggests that resilience tend to link with positive outcomes across multiple aspects of life (Cicchetti and Rogosch 1997; Lemery-Chalfant 2010).

SWB refers to people's cognitive and emotional evaluations of their lives, which is composed of life satisfaction and positive and negative affect (Diener et al. 2003). Demographic factors (e.g., marital status, educational levels, and income), personality (e.g., extroversion, neuroticism, and features of one's goals), and culture have been found to influence individuals' SWB (Diener 2012; Diener et al. 1999, 2003). However, researchers point out that besides the Big Five personality traits, numerous dimensions and narrower traits have been evidenced in their consistent associations with SWB constructs, such as "repressive defensiveness, trust, locus of control, desire for control, and hardiness" (Diener et al. 2003, p. 407). Resilience, as a trait-like personality, seems to be included among those dimensions and traits out of the Big Five (Wagnild and Young 1993).

Research has demonstrated the positive relationship between resilience and well-being (Hartley 2012, 2013; Mak et al. 2011; Mota and Matos 2015; Pretsch et al. 2012). For example, resilient children and youth can succeed through stress and adversity in life (Zolkoski and Bullock 2012). Resilience could also be used to differentiate normal students and those who sought assistant from campus mental health offices (Hartley 2012) and explain the number of credits completed by students with the most elevated levels of psychological distress (Hartley 2013). A study compared the function of resilience and neuroticism in teachers' well-being and showed that resilience had stronger predictive effects for general health perception than did neuroticism; the two constructs had equal effects on job satisfaction (Pretsch et al. 2012). Furthermore, a 4-week resilience intervention lowered students' scores on depressive symptoms, negative affect, and perceived stress (Steinhardt and Dolbier 2008).

With regard to the relationship between resilience and SWB, research found that resilience was not only related to the cognitive and affective components of SWB, but also mediated or moderated the relationship between SWB and other health-relevant variables. For example, a study on 1419 Hong Kong college students found that resilience was significantly related to positive cognitions about the self, the world, and the future, which, in turn, significantly predicted higher levels of life satisfaction and lower levels of depression (Mak et al. 2011). Another study with 55 recently widowed women showed that dispositional resilience not only mediated the relationship between perceived stress and life satisfaction, but also moderated the aforementioned relationship, with high-resilient participants reporting greater life satisfaction under perceived high stressful situations than did their low-resilient counterparts (Rossi et al. 2007). In terms of positive and negative affect, resilience was found to be negatively correlated with college students' anxiety and depression, and mediated the predictive power of socially prescribed perfectionism for anxiety and depression (Klibert et al. 2014).

Although the relationship of resilience to life satisfaction and negative emotions has been identified, research to date is insufficient to picture the association between resilience and SWB. More importantly, the process through which resilience affects SWB remains unclear. Little research has paid attention to how resilience may work with coping styles in influencing SWB, as coping styles are proposed as a process variable relating to SWB (Diener et al. 1999; Karlsen et al. 2006). This is exactly what this study tended to address.

Coping Styles and Subjective Well-Being

Coping refers to specific processes, in which an individual uses a series of thoughts and behaviors to "manage the internal and external demands of situations appraised as stressful, in order to be protected from psychological harm" (Folkman and Moskowitz 2004; Lazarus and Folkman 1984; Skodol 2010, p. 117). Coping can be understood from either a contextual approach or a stylistic approach (Moos and Holahan 2003). This study adopted the latter approach and assumed that when confronted with stressful situations, individuals act on characteristic styles of coping thoughts and behaviors (Cosway et al. 2000). Task-oriented, emotion-oriented, and avoidance coping styles were examined in this study, which are consistent

with the model of Lazarus and Folkman (1984) and the classification of Endler and Parker (2015). Task-oriented coping styles aim to cognitively restructure the problem or alter the situation, with attempts to solve the problem or diminish its impact by taking action. Emotion-oriented coping styles aim to reduce stress through emotional responses (such as self-blaming or getting angry), self-preoccupation, and/or fantasizing. Avoidance coping styles are to avoid the stressful situations via social diversion or distracting oneself with other situations or tasks (Endler and Parker 2015).

Coping was proposed as a process responsible for adaptation to a stressful or adverse situation, which, in turn, maintained a certain level of SWB (Diener et al. 1999; Karlsen et al. 2006). Certain coping strategies are found to link with higher levels of SWB, such as positive reappraisal, problem-focused coping, rational action, and drawing strength from adversity (Diener et al. 1999). For example, Carver and Scheier (1994) found that the use of problem-focused coping (similar to task-oriented coping styles in this study) and positive reframing after the exam predicted students' challenge with emotions (e.g., excited and eager) after they received their grades. Problem-focused coping and positive reappraisal were also consistently related to the increases in positive affect among 110 caregiving partners of men with AIDS, which was assessed bimonthly pre- and post-bereavement (Moskowitz et al. 1996).

Recently, research has further demonstrated the role of coping in SWB and some relevant constructs. For example, coping incrementally predicted American high school students' school outcomes above and beyond the Big Five personality traits, vocabulary, and demographic variables. Specifically, problem-focused coping predicted grades, life satisfaction, and positive feelings about school; emotion-focused coping only predicted negative feelings; and avoidant-focused coping predicted both positive and negative feelings about school (MacCann et al. 2012). As another example, problem-focused coping, along with neuroticism and extraversion, are the predominant predictors of SWB among Chinese university students (Ye 2008). Besides, a series of meta-analysis studies also evidence the importance of coping for individuals' well-being, such as burnout and posttraumatic growth (Clarke 2006; Prati and Pietrantoni 2009; Shin et al. 2014).

The Combination of Resilience and Coping Styles

Given the identified relationship of SWB to both resilience and coping styles, might the two constructs have any combined effects on SWB? According to Skodol (2010), resilience and coping are regarded as two "interrelated types of individual differences" (p. 113); each of them or a combination of both "are likely either to ameliorate or aggravate their impact of adverse experiences" (p. 113). Moreover, cognitive reappraisal, positive emotionality, and active coping strategies are all regarded as psychosocial factors that relate to resilience and promote successful adaption to stress (Feder et al. 2010). As such, what would be the possibilities when the two constructs work together in predicting SWB? At the theoretical level, there may be two possibilities: (a) resilience may influence SWB via coping styles in that resilience is a trait-like construct and coping styles are the specific processes with coping thoughts and behaviors, as defined in this study; (b) The effects of coping styles on SWB may be differentiated for people who show different levels of resilience. Stated differently, coping styles may mediate the influence of resilience on SWB and resilience may moderate the relationship between coping styles and SWB.

At the empirical level, only limited research has showed the association between resilience and coping styles. For example, a study examined the relationship between adjustment levels and coping among 297 adolescents who were classified into well adjusted, resilient, and vulnerable groups. The results showed that resilient adolescents scored higher on problem-solving coping strategies than their counterparts in the other two groups (Dumont and Provost 1999). Another study investigated a sample of college students and found that emotion-oriented coping was associated with low resilience; task-oriented coping was not only positively related to resilience but also mediated the relationship between conscientiousness and resilience (Campbell-Sills et al. 2006). It seems that resilience is more likely to be positively correlated to task-oriented and negatively to emotion-oriented coping styles.

For the mediation possibility, coping was found to mediate the relationship between resilient personality and well-being variables. For example, a study about Israeli military recruits found that during a 4-month combat training, cognitive appraisal and coping variables mediated the relationship between commitment and control (defined as resilient personality) and mental health, which was measured at the beginning and the end of the training, respectively (Florian et al. 1995). As another example, resilient women appraised their abortion as less stressful and had greater acceptance and less avoidance coping, which, in turn, predicted better postabortion adaptation (Major et al. 1998). In spite of the aforementioned studies, insufficient attention has been paid to SWB as the consequence variable, and no research has examined the moderating function of resilience (Rossi et al. 2007; as an exception) in the relationship between coping and SWB.

To sum up, although the existing research has found the correlation between resilience and coping styles, as well as the mediating function of coping strategies in the relationship between resilience and other well-being variables, the relevant research is far from enough to understand the combined effects of resilience and coping styles on SWB. More importantly, no published empirical study has linked resilience, coping styles, and SWB together, examining both the mediating function of coping styles and the moderating function of resilience. This is what the study aimed to address.

The Present Study

The purpose of this study is twofold. First, it tended to examine whether or not trait-like resilience would influence SWB through coping styles, which is related to the mediation possibility of coping styles in the relationship between resilience and SWB. Second, this study aimed to investigate whether or not resilience and coping styles would have certain interactions on SWB, that is, whether the influence of coping styles on SWB would depend on different levels of resilience. By answering the two research questions, this study may enrich our understanding of how the two well-being-relevant constructs (i.e., resilience and coping styles) work closely together in predicting SWB.

Centered on the mediating role of coping styles, this study hypothesized that resilience would facilitate task-oriented coping styles, which, in turn, enhance life satisfaction and positive affect (H1.1). Resilience would decrease emotion-oriented coping styles, which, in turn, attenuate negative affect (H1.2). No specific anticipation was made for the mediator of avoidance coping styles, given the scarce literature. With respect to the moderating function of resilience, this study anticipated that resilience would moderate the relationship between coping styles and SWB (H2). Given the rare literature, no specific anticipation was made.

Method

Participants

Two-hundred and thirty-nine students from a university in Nanjing, China participated in this study. Among them, 81 were males and 158 were females, ranging from 18 to 23 years old. Seventy-five students were freshmen (the first year), 90 were sophomores (the second year), and 74 were juniors (the third year); 98 were from social sciences and 141 from sciences and engineering department.

Measures

The Connor–Davidson Resilience Scale

As one of the promising assessment in resilience, the Connor–Davidson resilience scale (CD-RISC; Connor and Davidson 2003) was used to measure individuals' resilience. The original CD-RISC has 25 items on a five-point Likert-type scale ranging from 0 (not at all true) to 4 (true nearly all of the time), measuring five components of resilience—personal competence, high standards, and tenacity; trust in one's instincts, tolerance of negative affect, and strengthening effects of stress; positive acceptance of change and secure relationships; control; and spirituality. Recently, a 10-item one-factor short version of the CD-RISC (e.g., "I am able to adapt to change", "I tend to bounce back after illness or hardship") has been modified to solve the inconsistency of the original five-factor structure among different samples (Campbell-Sills et al. 2006; Campbell-Sills and Stein 2007; Hartley 2012; Yu and Zhang 2007). Satisfactory construct validity and reliability among university students was established with factor loadings ranging from .37 to .96 and the Cronbach's αs above .85 (Campbell-Sills and Stein 2007; Hartley 2012, 2013).

The Chinese version of the 25-item CD-RISC was adopted in this study on a five-point Likert-type scale, with 1 indicating *not true at all* to 5 indicating *true all the time* (Yu and Zhang 2007). However, the three-factor model (i.e., tenacity, strength, and optimism) did not fit the data well: $\chi^2_{(272)} = 539.185$, $p < .001$, RMSEA = .064, 90 % CI [.056, .072], SRMR = .073, and CFI = .75. So, the one-factor model with 10 items (i.e., the short version) was run and the model fit the data well after setting the errors of two items correlated: $\chi^2_{(34)} = 57.684$, $p = .007$, RMSEA = .054, 90 % CI [.028, .077], SRMR = .048, and CFI = .94. The factor loadings were from .38 to .72, and the Cronbach's α coefficient was .81.

The Short Form of Coping Inventory for Stressful Situations

The short form of coping inventory for stressful situations (CISSs-SF; Endler and Parker 1999) was used to measure task-oriented (e.g., "Work to understand the situation"), emotion-oriented (e.g., "Blame myself for being too emotional"), and avoidance (e.g., "Buy myself something") coping styles when confronted with stressful situations. The CISS-SF was developed based on the CISS (Endler and Parker 1990, 1994), which has sophisticated features among a variety of coping measures (Cosway et al. 2000; Rafnsson et al. 2006; Skinner et al. 2003). The CISS-SF contains 21 items, which are rated on a five-point Likert-type scale, with 1 indicating *not true at all* to 5

indicating *true all the time*. A three-factor model was supported with all items loading on the theoretical factors, which is consistent with the results of the 48-item CISS in two samples of college students (Endler and Parker 1994, 1999). The three-factor structure of the CISS-SF was also supported among American and Turkish university students and American adults (Boysan 2012; Cohan et al. 2006).

In this study, all the 21 items were translated into Mandarin and then back translated to ensure that the content of the items remained consistent. A three-factor model was tested to observe the applicability of the original three-factor structure among the group of Chinese students, considering the little published psychometric properties of the CISS-SF in the Chinese context. Confirmatory factor analysis results showed that the three-factor model fit the data[1]: $\chi^2_{(148)} = 218.781$, $p < .001$, RMSEA = .045, 90 % CI [.032, .057], SRMR = .062, and CFI = .92. The factor loadings ranged from .34 to .72, consistent with previous findings (Cohan et al. 2006; Murat 2011); the Cronbach's α coefficients were .78 for task-oriented, .79 for emotion-oriented, and .75 for avoidance coping styles.

The Satisfaction with Life Scale and Positive and Negative Affect Schedule

Students' SWB was assessed by two widely used inventories: the satisfaction with life scale (SWLS; Diener et al. 1985) and the positive and negative affect schedule (PANAS; Watson et al. 1988). The five-item SWLS is used to measure the cognitive component of SWB, which has been applied into both English-speaking and non-English-speaking countries such as Arab, Brazil, the Netherlands, Portugal, Spain, and mainland China (e.g., Abdallah 1998; Arrindell et al. 1999; Atienza et al. 2003; Gouveia et al. 2009; Silva et al. 2015; Wu and Wu 2008; Ye 2008). All studies have evidenced its satisfactory reliability and internal and external validity.

The PANAS (Watson et al. 1988) is used to assess the affective component of SWB. It contains two 10-item subscales to evaluate participants' affective experiences in the past month (i.e., positive affect and negative affect, respectively). Satisfactory psychometric properties have been demonstrated by previous studies in different cultures (Chen 2015; Krohne et al. 1996; Lim et al. 2010; Melvin and Molloy 2000; Ye 2008).

This study adopted the Chinese versions of the SWLS and PANAS (Ye 2008) on a five-point scale, with 1 being *not at all true of me* and 5 being *exactly true of me*. A three-factor SWB model (including life satisfaction and positive and negative affect) fit the data with $\chi^2_{(269)} = 494.845$, $p < .001$, RMSEA = .059, 90 % CI [.051, .067], SRMR = .068, and CFI = .89. The factor loadings ranged from .34 to .85, consistent with previous findings (Ye 2008). The estimates of reliability were .82 for the SWLS, .87 for the positive affect subscale, and .85 for the negative affect subscale.

Data Analysis

Confirmatory factor analysis was used to test the construct validity of the three measures. Structural equation modeling with latent variables (Bollen 1989; Wang and Wang 2012) was adopted to test the mediating role of coping styles and the moderating function of resilience, respectively. Specifically, resampling methods, bootstrapping in this study, were adopted to test the significance of the mediating effect in that these methods do not require "as many problematic assumptions" as traditional mediation analyses (Taylor et al. 2008, p. 246), and are suitable for the cases when the analysis is extended from a single-mediator case to a multiple-mediator case. The latent moderated structural (LMS) equations approach (Klein and Moosbrugger 2000) was used to test the moderating function of resilience in the relationship between coping and SWB, with the specific combined effect of each coping style with resilience was examined for life satisfaction and positive and negative affect, respectively. The Mplus 7.0 statistical package (Muthén and Muthén 1998–2012) was used in all modeling procedures.

Results

Preliminary Results

The means, SDs, and Cronbach's α coefficients of resilience, coping styles, and SWB are reported in Table 1. Sex, grade, and major differences in resilience, coping styles, and SWB were examined. No significant differences were identified in the demographic variables, except for the sex difference in avoidance coping, with male students scoring higher than their female counterparts ($t = 4.899$, $p < .001$). Thus, sex, grade, and major differences were not included into the model testing.

As can be seen in Table 1, resilience and task-oriented coping were positively correlated with life satisfaction and positive affect; negatively correlated with negative effect. Emotion-oriented coping style was only positively related to negative affect; avoidance coping was positively related to life satisfaction and positive affect. Besides, resilience

[1] Two items with factor loadings lower than .25 (i.e., items 17 and 20) were removed; the errors of item 21 (i.e., phone a friend) and item 7 (i.e., visit a friend) were correlated because of the overlap in the contents (Cohan et al. 2006).

Table 1 Intercorrelations among resilience, coping styles, and subjective well-being

Variables	1	2	3	4	5	6	7
(1) Resilience	–						
(2) Task-oriented coping style	.60***	–					
(3) Emotion-oriented coping style	−.20**	−.02	–				
(4) Avoidance coping style	.21**	.21**	.19**	–			
(5) Life satisfaction	.41***	.27***	−.05	.29***	–		
(6) Positive affect	.54***	.52***	−.11	.23**	.40***	–	
(7) Negative affect	−.33***	−.20**	.37***	.02	−.18**	−.15*	–
M	3.67	3.57	3.05	3.37	3.33	3.05	2.11
SD	.50	.68	.69	.68	.68	.64	.64
Cronbach's α	.81	.78	.79	.75	.82	.87	.85

* $p < .05$, ** $p < .01$, *** $p < .001$

was positively associated with task-oriented and avoidance, but negative with emotion-oriented coping styles.

The Mediating Function of Coping Styles

With bootstrapping method, a multiple-mediator model (i.e., task-oriented, emotion-oriented, and avoidance coping styles) was examined with life satisfaction and positive and negative effect being consequences simultaneously. The model fit indices go as follows: $\chi^2_{(1351)} = 2128.164$, $p < .001$, $\chi^2/df = 1.58$, RMSEA = .049, 90 % CI [.045, .053], SRMR = .068, and CFI = .83.

Results of total indirect, specific indirect, and direct effects showed that (a) resilience had non-significant total indirect effects on life satisfaction (estimate = −.06, SE = .16, and $p = .696$); no coping styles served as significant mediators in the relationship between resilience and life satisfaction (all $p_s > .10$). (b) Resilience had marginally significant total indirect effects on positive affect (estimate = .28, SE = .16, and $p = .076$); task-oriented coping styles served as a marginally significant mediator in the relationship between resilience and positive affect (Path 1; estimate = .25, SE = .14, and $p = .078$). (c) Resilience had non-significant total indirect effects on negative affect (estimate = −.20, SE = .20, and $p = .329$);[2] however, emotion-oriented coping styles served as a significant mediator in the relationship between resilience and negative affect (Path 2; estimate = −.11, SE = .05, and $p = .039$). (d) Resilience had significant direct effects on life satisfaction (estimate = .57, SE = .19, and $p = .003$) and positive affect (estimate = .39, SE = .17, and $p = .024$), rather than on negative affect (estimate = −.17, SE = .23, and $p = .464$).

Then, the 95 % CIs of the marginally significant (Path 1) and significant (Path 2) mediating paths were checked to ensure the significance of multiple mediators. Path 1, that is, the mediating role of task-oriented coping styles in the relationship between resilience and positive affect, was not supported in that the lower and upper limits of the 95 % CI were −.029 and .536, containing zero value. Path 2, that is, the mediating function of emotion-oriented coping styles in the relationship between resilience and negative affect, was supported with the lower and upper limits of the 95 % CI being −.208 and −.006, not containing zero value. In sum, hypothesis H1.1 is not supported because no significant mediational function was identified for task-oriented coping in predicting life satisfaction and/or positive affect from resilience. Hypothesis H1.2 is supported that emotion-oriented coping styles were demonstrated to be a mediator in the relationship between resilience and negative affect (see Fig. 1).

The Moderating Function of Resilience

Nine models based on LMS equations approach (Klein and Moosbrugger 2000) were executed to observe whether resilience moderated the relationship between task-oriented, emotion-oriented, and avoidance coping styles and SWB. Taking the interaction of resilience and task-oriented coping style as an example, the predictors were resilience, task-oriented, emotion-oriented, avoidance coping styles, and the product term of resilience and task-oriented coping styles, the outcomes were life satisfaction and positive and negative affect. Three sub-models were run separately, within each of which, the effect of the product term on life satisfaction, positive affect, and negative affect was examined, separately, although all the SWB components were included in the same model. The procedure was the

[2] Based on the results, a modified model was run by only keeping the marginally significant (b) and significant (c) mediational paths. The model fit indices were the same, but resilience did have significant total indirect effects on negative affect (estimate = −.11, SE = .05, and $p = .039$), consistent with the result that the emotion-oriented coping style served as a significant mediator.

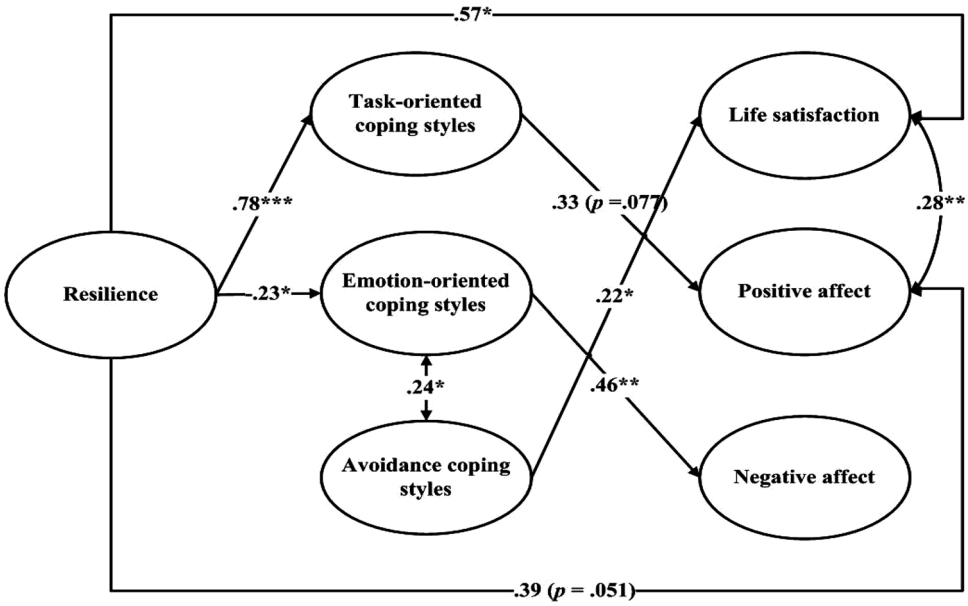

Fig. 1 Predicting SWB from resilience: the mediation function of coping styles. *Note* for brevity, significant paths are presented. *Path 1* resilience → task-oriented coping styles → positive affect, *Path 2*: resilience → emotion-oriented coping styles → negative affect

same for the product terms of resilience and emotion-oriented coping styles and resilience and avoidance coping styles.

It was found that the significant moderation only lied in the product term of resilience and task-oriented coping styles in predicting life satisfaction. In this model, resilience ($B = .86$, $p = .002$) and avoidance coping styles ($B = .39$, $p = .012$) significantly positively predicted life satisfaction; task-oriented ($B = -.12$, $p = .542$) and emotion-oriented ($B = .01$, $p = .895$) coping styles became non-significant predictors. The interaction effect was negative ($B = -.41$, $p = .031$), with the simple slope test presented in Fig. 2. As can be seen in the figure, in different resilience levels, the predictions of life satisfaction from task-oriented coping styles were different. When students reported lower levels of resilience, the task-oriented coping style they adopted enhanced their life satisfaction. However, when students reported higher levels of resilience, the adopted task-oriented coping style seemed to have null relationship with their life satisfaction (see Fig. 2: the slope for the higher level of resilience was very close to zero). In other words, students' higher levels of resilience might not further the positive effect of task-oriented coping styles on their life satisfaction.

Discussion

The Mediating Function of Coping Styles

Before the discussion on the mediating function of coping styles in the relationship between resilience and SWB, the relationship of SWB to resilience and coping styles is briefly stated. As can be seen in Fig. 1, when working closely together, resilience and coping styles both showed their contributions to SWB. Resilience directly positively predicted life satisfaction and positive affect (marginally); had negative relationship with negative affect (via emotion-oriented coping styles). These results are mostly consistent with previous research findings on the positive and negative association of resilience to life satisfaction and negative affect (Klibert et al. 2014; Mak et al. 2011; Rossi et al. 2007). Different coping styles had different functions in SWB components: task-oriented and emotion-oriented coping styles positively predicted positive affect and negative affect, respectively, which support the extant literature (MacCann et al. 2012; Moskowitz et al. 1996). Avoidance coping styles positively predicted life satisfaction, but had null relationship with positive and negative affect as found in the literature (Clarke 2006; MacCann et al. 2012; Shin et al. 2014; Ye 2008). In general, most of the results echo the literature on SWB that other personality traits (except for the Big Five) and coping styles do play their roles in explaining SWB (Diener et al. 2003).

More importantly, this study demonstrated the combined effect of resilience and coping styles on SWB. The relationship between resilience and coping styles is consistent with previous findings that resilience is positively and negatively associated with task-oriented and emotion-oriented coping styles, respectively (Campbell-Sills et al. 2006; Dumont and Provost 1999). Resilient students are more likely to be competent, self-controlled, tolerant of negative affect, and accept changes with positive attitudes. Therefore, when encountering difficulties and adversity, they are more likely to alter the situations and/or take action to solve the problem (i.e., task-oriented coping),

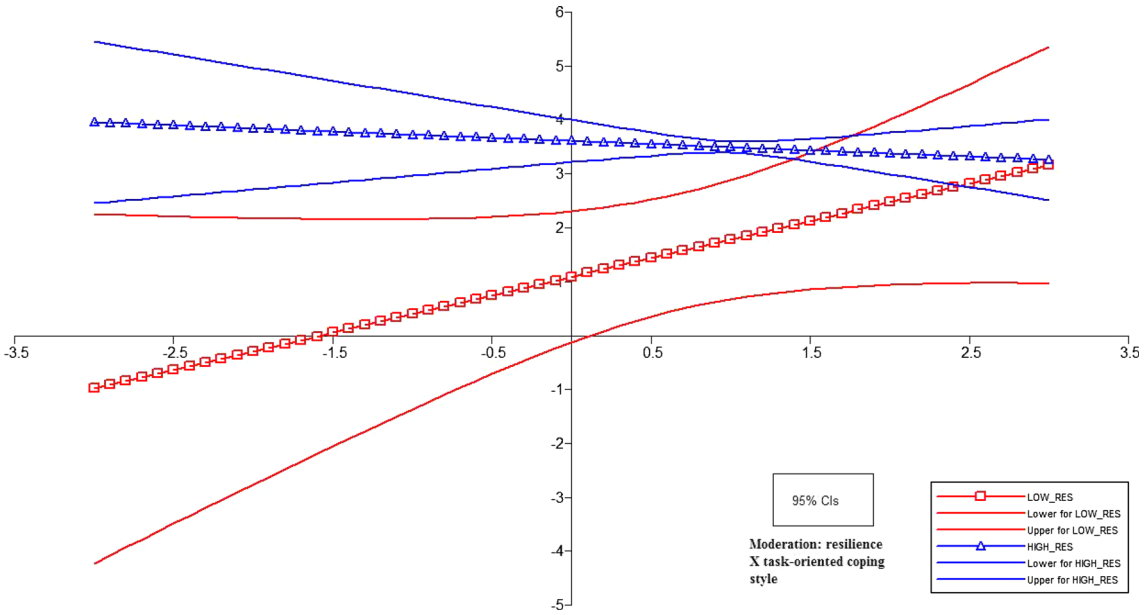

Fig. 2 Predicting life satisfaction: a plot of moderation (resilience × task-oriented coping styles with LOOP option)

rather than to blame themselves for being too emotional, become tense, or daydream (i.e., emotion-oriented coping).

Regarding the specific mediation, unexpectedly, hypothesis H1.1 (Path 1) was not supported that resilience would influence students' life satisfaction and positive affect via task-oriented coping styles. Instead, resilience had direct effects on the two SWB components. The explanation for this result may lie in two aspects. First, as two adaptive psychological constructs in relation to SWB, resilience and task-oriented coping styles may both have direct impact on SWB, herein life satisfaction and positive affect. Resilience, as the capability to recover quickly from difficulties and/or toughness, is more likely to facilitate people's positive evaluations of life (i.e., life satisfaction); while task-oriented coping styles is probably more closely related to people's emotion and mood in that people would feel happy and relaxed when problems are solved. Second, the result might be specific for the current sample in that the relevant research in the mediating function of coping styles in the relationship between resilience and SWB is limited. Further research is needed to draw a general conclusion.

Hypothesis H1.2 (Path 2) was supported that resilience diminished negative affect via weakening emotion-oriented coping styles. This mediation is consistent with previous findings on the negative relationship between resilience and negative affect (Klibert et al. 2014; Mak et al. 2011), resilience and emotion-oriented coping styles (Campbell-Sills et al. 2006), and between emotion-oriented coping styles and negative affect (MacCann et al. 2012). As capacities and positive attributes to help people cope with environmental challenges (Anthony 2002; Skodol 2010), resilience is more likely to weaken negative coping thoughts and behaviors, such as self-blaming, becoming tense, and/or getting angry in front of stress (i.e., emotion-oriented coping styles), which, in turn, reduce negative affect. Undoubtedly, further research is necessary to confirm the possibility, given the rare literature.

The Moderating Function of Resilience

Hypothesis H2 is supported regarding the moderating function of resilience, although the effect was only found for the interaction of resilience and task-oriented coping styles on life satisfaction. It seems that the effect of coping thoughts and behavior on well-being depends on people's resilient personality. Specifically, when students reported lower levels of resilience, the use of task-oriented coping styles boosted their life satisfaction; when students were in higher levels of resilience, the adoption of task-oriented coping styles did not further the positive effect on life satisfaction. The results are reasonable. If people are not good at recovering from difficulties and stressful situation, to alter the stressful situations or to plan to solve the problems may lead to a satisfactory evaluation of their lives. If people are highly resilient, they tend to use task-oriented coping styles to deal with adversities. Therefore, the positive relationship between task-oriented coping styles and life satisfaction may not be further boosted under the condition of higher resilience. Of course, this possibility calls for further examinations.

Contributions, Limitations, and Implications for Education

This study examined the relationship of SWB to resilience and coping styles among a group of Chinese university students. The research results supported the hypothesized mediating function of coping styles in the relationship between resilience and SWB and the moderating function of resilience in the relationship between coping styles and SWB. These findings echo the theoretical thinking in the science of SWB and the research areas of resilience and coping that trait-like resilience and coping styles, as interrelated types of individual differences, work closely together in exerting their influence on well-being (Diener 2012; Feder et al. 2010; Skodol 2010; Zautra et al. 2010). These research findings also enrich our understanding of the combined effect of resilience and coping styles on SWB: on the one hand, resilience directly influences university students' life satisfaction and indirectly influences their negative effect via emotion-oriented coping styles; on the other hand, how coping styles influence SWB relies on students' resilient personality.

Of course, this is a cross-sectional study and only targeted a group of Chinese students, the generalization of the research results should be cautious. Moreover, the relationship between resilience and SWB could be reciprocal and the causal relation shouldn't be inferred (Diener 2012). Despite the limitations, the current study highlights the importance of resilience and coping styles for Chinese university students' well-being, which exactly fits the notion of positive psychology on human strengths and virtues (Zautra et al. 2010). To promote students' healthy development, educators and counselors in higher education institutes need to pay more attention to the positive psychological constructs (e.g., resilience and adaptive coping styles in this study, as well as their dynamic relationships).

Specifically, both resilience and coping education or intervention programs are needed, given the different functions of resilience and coping styles in SWB. On the one hand, these programs help to cultivate students' acceptance of changes and challenges, tolerance of negative affect, self-control, and positive attitudes toward adversity and/or challenges (i.e., resilience). On the other hand, these programs teach students on how to reconstruct or alter stressful situations and take action to solve problems (i.e., task-oriented coping), rather than just getting angry, blaming to have too emotional responses, or being self-preoccupied and fantasizing (i.e., emotion-oriented coping). Considering its positive relation with life satisfaction, avoidance coping could be suggested to Chinese students, particularly when the stress is beyond the resources that they have to deal with. Besides the aforementioned, it is the consideration of the dynamic function of resilience and coping styles in SWB that maximizes the effectiveness of resilience and coping education or intervention programs. Resilience could limit the use of emotion-oriented coping styles, which, in turn, reduces students' negative affect; meanwhile, task-oriented coping styles could benefit students' life satisfaction when they lack resilience. This highlights the necessity to integrating resilience and coping styles into positive education.

In sum, only if the strengths and virtues are emphasized and valued may students enhance their competence, play the active role in front of adversity, and enhance SWB. In future studies, it is appealing to examine the current research findings among diverse samples to enrich the understanding of the relationship among resilience, coping styles, and SWB, and more importantly, to provide heuristics meanings for students' positive education.

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