

## **The relationship between emotional intelligence and pressure perception of college students: the intermediary role of psychological toughness**

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**Abstract:** This paper aims at exploring the intermediary role of their psychological resilience in the role of emotional intelligence on their stress perception, and to provide intervention programs for college students to regulate their stress perception and improve their quality of life. With 680 college students in Guangdong region as the subjects, "College Students' Emotional Intelligence Scale (EIS) Chinese version", "Pressure Perception Scale" and "Adolescent Psychological toughness Scale" were used as the research tools. The results showed that college students can negatively predict stress perception ( $\beta = -0.53$ ,  $t = -15.88$ ,  $P < 0.01$ ); after the introduction of mental resilience variables, they can negatively predict stress perception ( $\beta = -0.303$ ,  $t = -15.881$ ,  $P < 0.01$ ), and can positively predict all dimensions of psychological resilience (0.143, 0.124, 0.087, 0.093, 0.158,  $p < 0.01$ ). In the mediation model, the targeted focus of psychological resilience, emotional control, positive cognition, and family support dimensions were statistically significant (-0.484, -0.509, -0.197, -0.229,  $p < 0.01$ , respectively). The psychological resilience of college students plays a mediating role in the influence of emotional intelligence on stress perception. The study reveals that emotional intelligence and psychological resilience have a direct effect on pressure perception. Consciously training for emotional intelligence and mental resilience is helpful to weaken college students' pressure perception and improve the mental health level. College students' emotional intelligence can negatively predict stress perception<sup>1</sup>.

**Key words:** emotional intelligence, mental pressure, perceptual, psychological toughness, intermediary role, college students.

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### **I. Introduction**

In recent years, the rapid development of society has made people put under more pressure. As the majority of the country's future, college students do even more so. For college students who are in the transition period from youth to early adulthood, their individual physical development and psychological development are nearly mature and begin to enter the adult society. College students in this period are the most likely to have a tension of self-contradictions. At present, COVID-19 is still rage around the world, while China is still in a normal state of epidemic prevention and control. There are many uncertainties in the future development of the world. With unprecedented challenges, people become more anxious and stress levels increase significantly. College students deeply understand this. In addition, with the new era of the implementation of the talent power strategy, our country requirements for talent quality will constantly improve, we want to cultivate capable college students, more to cultivate comprehensive quality of college students, among them, psychological quality is an important part of comprehensive quality, and personal stress ability is the important touchstone of the former. Combining the aforementioned social development background and the influence of personal growth factors, the experience of college students with insufficient experience may reach an

unpredictable height, so, to provide a suitable method for college students to adjust the pressure and even transformation pressure, is the most worthy of our attention and discussion.

Emotional intelligence, also known as emotional intelligence, known as emotional intelligence, was first defined by American psychologists Meyer and Sullivan. Gorman (1995) proposed that "emotional intelligence is emotional intelligence", and summarized the five aspects of self-management and self-encouragement into emotional intelligence. Baen (1997) interpreted it as a combination of emotional, personal and interpersonal abilities that affect people cope with environmental needs and stresses. Considering the above earlier views on emotional intelligence, it is not difficult to find that emotional intelligence has been greatly associated with self-adaptation and stress response since its formation. At present, the overall level of emotional intelligence of Chinese college students is acceptable (Lu Jiamei et al., 2017). However, due to the increasing changes of The Times and the world in the background of the epidemic is full of uncertainty, the self-assessment of college students may tend to be polarized, which is consistent with the conclusion of existing studies (Liu Dan et al., 2017).

Stress perception refers to the psychological activity formed after the individual's cognitive assessment of stress. The stressful nature of any particular stimulus is determined by the individual interpretation and its response (Fevre et al., 2003), in other words, the individual attitude towards stress greatly affects their own stress perception (Weiner, 1985). Taken together, it is not difficult to find that stress perception can predict the magnitude of stress that an individual can perceive in the face of stress. In addition, Li Sijin et al (2020) found that the more individuals face the pressure situation, the more pressure they feel, the more likely they are to have psychological problems. If an individual cannot reasonably cope with the stress and the pressure continues to work, there will be depression, anxiety and other psychological problems.

Psychological resilience, or psychological resilience, resilience, was originally a physical concept, meaning the rebound after external forces, is an ability to restore balance in the face of adversity (Erica, 2018). With the help of the physical horizon, if an individual has a high level of psychological resilience, that is, in the pressure situation, individuals can more quickly apply their own "external force" (I. i.e., pressure) into a rebound power, and better adapt to the surrounding environment (Cheng Kun, 2014), so as to speculate that the overall pressure level is low or the self-adjustment pressure is better. From this point of view, psychological resilience should be clearly related to stress. Many studies have shown that psychological resilience has a negative prediction on stress (Rong et al, 2017, Chen Juanjuan et al, 2020) and has a positive effect on negative emotions induced by stress (Martin, 2008). To sum up, as a more complex concept, psychological resilience should be composed of multiple dimensions, and these dimensions may be associated with "positive cognitive attitude", "good emotional regulation" and "others' support", and Hu Yueqin et al. (2008) research pointed out that psychological resilience mainly by target focus, emotional control, positive cognition and family support and interpersonal assistance five dimensions. In this study, the view of Hu Yueqin et al.

There should be a correlation between emotional intelligence and stress perception. Differences in emotional intelligence can make individuals behave quite differently during stress coping. Having a higher level of emotional intelligence will be conducive to individuals in identifying their own and others' emotions, individual self-management and self-encouragement. Combined with the existing experience, it is not difficult to find that high emotional intelligence is more conducive to the negative emotions caused by individual stress situations, which is not conducive to individual stress coping. Pressure perception is an individual's perception of and evaluation of pressure. When faced with pressure, people will have completely different responses due to individual differences. In short, the stronger ability to perceive pressure, even if the pressure is small, will make it feel pressure, while insensitive people are vice versa. Based on the correlation between emotional intelligence, pressure perception and pressure and the understanding of the concept of the first two, this study made the

hypothesis 1: improving the emotional intelligence of college students can reduce their level of pressure perception, and emotional intelligence can negatively predict pressure perception.

This study introduces psychological resilience into "emotional intelligence-stress perception" to explore the deeper internal mechanisms. Foreign scholars suggest that emotional intelligence is a prerequisite for psychological resilience (Martins et al., 2010; Davis et al., 2012). Domestic scholars have found that emotional intelligence can effectively predict psychological resilience (An Rong et al., 2017; Wen Ya et al., 2014). Individuals with good emotional intelligence or mental resilience are conducive to their own pressure response. Therefore, improving their emotional intelligence and mental resilience can help them get rid of stress, which is consistent with the conclusions of previous studies (Xie Dongjun et al., 2019). Therefore, this study puts forward Hypothesis 2: the emotional intelligence of college students can positively predict the psychological resilience.

Stress perception reflects the ability of an individual's ability to perceive and assess pressure, while psychological resilience can reflect the degree of individual pressure. From the understanding of the two, there should be a negative correlation. Ye Baojuan et al (2018) pointed out that the greater the pressure perception, the lower the psychological resilience level of college students. In conclusion, this study proposes hypothesis 3 that psychological resilience can reverse predict stress perception.

Combining the above content, there is a complex interaction between the three, high emotional intelligence individuals in the identification of themselves and others emotions at the same time, can also better regulate their emotions, in the face of pressure, can maintain a lower level of pressure perception and more effectively adjust themselves, thus better adjust the negative emotions, and in the process of coping with pressure, high emotional intelligence individuals present a higher level of psychological resilience. Therefore, this study puts forward the hypothesis 4: the psychological resilience of college students plays a mediating role in the influence of emotional intelligence on stress perception.

## **II. Methods**

### **2.1 Object**

Using stratified random sampling, from May to November 2021, a total of 680 questionnaires were issued to universities in Guangdong, covering universities at different levels of "985", "211", "double first-class" and "general colleges", among which the majors involved different types of majors such as science and technology, art and medicine. Through the principle of lie graph and option novelty, 39 invalid questionnaires were removed, and 641 were recovered. The effective recovery rate of questionnaires reached 94.2%, including 353 boys and 287 girls, 422 freshmen, 30 sophomores, 64 juniors and 124 seniors.

### **2.2 Research tools**

#### **2.2.1 Table of emotional intelligence and strength**

The scale has 33 items in the total, including a 5-point scoring method, with 1 to 5 points from complete incompatibility to full compliance. The higher the final score, the higher the emotional intelligence. There are four dimensions: the ability to feel about emotions, the ability to understand and reason about others' emotions, the ability to understand and reason about their own emotions, and the ability to express emotions. The scale Cronbach coefficient was 0.86.

#### **2.2.2 Mental resilience scale**

The scale is a total of 27 items, 5 points scoring method, from completely inconsistent to fully meet

1~5 points, and 12 reverse score, the higher the score, the stronger the psychological toughness, a total of five subscale: target focus, emotional control, positive cognition, family support, interpersonal assistance. Each dimensional Cronbach coefficients was 0.619, 0.659, 0.767, 0.747, 0.818, respectively. The Cronbach coefficient of the total table of this test was 0.86.

### 2.2.3 The Pressure Perception Scale

There are 14 items in the scale, with the 5-point score method, and 1 to 5 points from complete incompatibility to full compliance. The higher the final score, the stronger the pressure perception. There are two dimensions: feeling of tension, feeling out of control. The scale Cronbach coefficient was 0.86.

### 2.3 Data processing

Statistical analysis of the data was processed using SPSS23.0 software. Statistical methods include descriptive statistical analysis, correlation analysis, regression analysis, and Bootstrap method.

## III. Results

### 3.1 Correlation analysis of emotional intelligence, psychological resilience and stress perception

All dimensions of emotional intelligence were positively correlated ( $r = 0.279 \sim 0.523$ ,  $P$  value  $< 0.01$ ), emotional intelligence and stress perception ( $r = -0.532$ ,  $P$  value  $< 0.01$ ), and stress perception ( $r = -0.558 \sim -0.380$ ,  $P$  value  $< 0.01$ ). Means and standard deviation of each scale are shown in Table 1.

	M	SD	emotional intelligence	Goal focus	emotional control	Positive cognition	Family support	Interpersonal assistance	Stress perception
Emotional intelligence	124.128	12.730	1						
Goal focus	19.108	3.481	0.523**	1					
Emotional control	18.220	5.114	0.309**	0.297**	1				
Positive cognition	16.911	2.434	0.454**	0.467**	0.168**	1			
Family support	22.448	4.245	0.279**	0.273**	0.243**	0.290**	1		
Interpersonal assistance	19.962	5.142	0.390**	0.276**	0.378**	0.190**	0.374**	1	
Stress perception	38.586	7.239	-0.532**	-0.532**	-0.558**	-0.380**	-0.384**	-0.400**	1

Note: \*  $p < 0.05$  \*\*  $p < 0.01$

**Table 1** Correlation coefficient of emotional and intellectual resilience and stress perception among college students ( $r$  value,  $n=641$ )

### 3.2 The mediating role of all dimensions of psychological resilience between emotional intelligence and stress perception

Using emotional intelligence as the independent variable, stress perception was the dependent variable for regression analysis, the result shows that, the predictive effect of emotional intelligence on stress perception was statistically significant ( $\beta = -0.53$ ,  $t = -15.88$ ,  $P < 0.01$ ), Target Focus, emotional control, positive cognition, Family Support, the predictive effect of interpersonal assistance on pressure perception was also statistically significant (the value was -0.300, respectively, -0.378, -0.118, -0.139, -0.100, The  $t$ -value were 44.826, -9.090,

-12.225, -3.666, -4.447,  $P < 0.01$ ).

Mediator effect analysis was performed with emotional intelligence as the independent variable, each dimension of psychological resilience as the mediating variable, and stress perception as the dependent variable. Positive prediction of mental resilience (0.143, respectively, 0.124, 0.087, 0.093, 0.158,  $p < 0.01$ ), no statistical significance of stress perception in psychological resilience ( $p = 0.08$ ), the rest of the targets is focused, emotional control, positive cognition, all family support dimensions were statistically significant for the negative perception of stress perception (-0.484, respectively, -0.509, -0.197, -0.229,  $p < 0.01$ ), egative prediction of emotional intelligence on stress perception was statistically significant ( $\beta = -0.303$ ,  $P < 0.01$ ). It indicates that emotional intelligence plays a mediating role between emotional intelligence and stress perception through goal focus, emotional control, positive cognition, family support, goal focus, emotional control, positive cognition, and family support.

Using Bootstrap method (Bootstrap=5000) for mediation model test of psychological resilience, 95% confidence interval does not include 0 except interpersonal assistance dimension, the mediation effect is statistically significant, the results show that target focus, emotional control, positive cognition, family support has partial mediation between emotional intelligence and pressure perception, part of the mediation effect accounted for 22%, 20%, 5% and 7%. See Table 2.

Model path	The effect value	SE	95%CI
Emotional intelligence => target focus => stress perception	-0.069	0.01	-0.190 ~ -0.074
Emotional intelligence => emotional control => stress perception	-0.063	0.01	-0.153 ~ -0.081
Emotional intelligence => positive cognition => stress perception	-0.017	0.01	-0.061 ~ 0.007
Emotional intelligence => family support => stress perception	-0.021	0.00	-0.057 ~ -0.019

**Table 2** Bootstrap Test of Indirect Effect of Mental toughness (n = 641)

## **IV. Discussion**

### **4.1 Relationship between emotional intelligence and stress perception**

From relevant analysis, emotional intelligence is significantly negative prediction of stress perception, consistent with previous studies (Xie Yangxi et al., 2014; Mu Jing, 2020). Emotional intelligence is a more complex concept, which includes both the physical observation and adjustment of self-emotions, but also includes the self-action and the emotional regulation of others. Thinking by definition, high emotional intelligence helps individuals to maintain low levels of pressure perception, namely, when individuals are in a stress scenario, individuals tend to adopt more positive cognition to meet the negative effects of stress, rather than view stress in a negative, negative or even pessimistic attitude. Baen (2006) showed that emotional intelligence guides people to deal with stress. Emotional intelligence can have a negative effect on stress perception in future mental health education, and the necessity of thematic learning in future colleges and primary and secondary schools and the need to develop a clearer and accurate definition for better development of this ability.

In the future research, researchers can explore the relationship between emotional intelligence and pressure

intuition by broadening the dimension and exploring the possible more complex relationship between the two.

#### **4.2 Mediating role of psychological resilience**

From the perspective of the intermediary role of psychological resilience, high emotional intelligence is conducive to individuals to maintain a high level of emotional control. Good emotional control further promotes individuals to form a more positive cognition, and makes it easier or better at obtaining family support, so as to maintain a good target focus state in life. In the process of stress response, the individual is not the negative effects of external pressure anxiety, but can take good adjustment to negative effects, and maintain a good and stable attitude, can better and quickly adapt to the pressure scenario and can form like spring rebound force, and finally successful control pressure, solve the problem smoothly.

#### **4.3 Introduction of coping with methods**

This study deeply explores the internal connection mechanism between emotional intelligence and stress perception, creatively introduce psychological resilience into "emotional intelligence-stress perception", and assume "mental intelligence-psychological resilience-stress perception" this path, laid a theoretical foundation for subsequent exploration, for the complex internal mechanism of the framework. However, there are still some deficiencies in this study, such as a small sample size and insufficient sample representation. In the following study, researchers can collect more diversity in a larger scope, to improve the limitations and deficiencies of this study, which will further help us clear and build the deep theory, to improve the mental health level of college students to provide empirical research basis, the mental health of mental health education curriculum system is of great significance.

Combined with the demonstration results of the investigation and the existing literature materials, the coping mode also plays an important role in the process of "emotional intelligence- -pressure perception". Yang Rui et al (2021) found that individuals with high pressure perception tend to choose negative coping methods; individuals with low pressure perception tend to adopt positive coping methods. Therefore, in the future research, researchers can introduce "coping" into "emotional intelligence, mental resilience, stress perception" this path, further explore the "coping" in "emotional intelligence, mental resilience, stress perception" path may exist more complex relationship, to perfect the relationship to make their own contribution, for the contemporary college students' mental health education.

### **V. Conclusion**

1) Pairwise significant correlation between emotional intelligence, mental resilience and stress perception, and emotional intelligence positively and significantly predicts mental resilience, while emotional intelligence and psychological resilience negatively and significantly predict stress perception.

2) The psychological resilience of college students plays a partial mediating role between emotional intelligence and pressure perception.

The enlightenment of this study is that emotional intelligence and psychological resilience have a direct effect on pressure perception, and conscious training on emotional intelligence and mental resilience to improve the emotional intelligence and psychological resilience of college students will help to reduce college students' pressure perception and improve the level of mental health.

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