



# The Mediating Effect of Mean Thinking Between Stressor and Depression in Senior High School Students

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**Abstract. Objective:** To explore Mediating effects of Zhongyong's thinking on stressors and depression tendencies of high school students. **Method:** 216 high school students have completed questionnaires for Zhongyong Thinking Scale, SAS, and SDS Depression Scale and Stressor Scale for High school students. SPSS 25.0 software was used for descriptive statistics and Pearson correlation analysis. The mediation model in the SPSS PROCESS program compiled by Hayes was used to test the results. **Result:** Stressors are positively correlated with depression tendencies  $r = 0.461$   $p < 0.01$  negatively correlated with Zhongyong thinking ( $r = -0.295$ ,  $p < 0.01$ ), Zhongyong thinking is negatively correlated with depression tendencies ( $r = -0.462$ ,  $p < 0.01$ ). Bootstrap mediating effects have proven the simple mediating effect of Zhongyong thinking on stressors and depression tendencies, constructing 95% confidence intervals, which are [0.062, 0.122], [-0.403, -0.206], [0.011, 0.049]. **Conclusion:** Zhongyong's thinking can reduce the influence of stressors on high school students and reduce the depression tendencies of high school students.

**Keywords:** Mean thinking · Mediating effect · Stressor · Depression

## 1 Introduction

High school is essential for forming cognitive decision-making abilities and preliminary values. The Zhongyong ideology comes from the book Analects of Confucius · Yong Ye: “Zhongyong, as a kind of morality, should be considered the highest state; people have been lacking it for too long.” Refers to an impartial, compromising, and harmonious attitude; it promotes and cultivates the Chinese nation's habit of handling things and the spiritual world. Mean thinking advocated by Confucianism significantly impacts the mental health of high school students. The doctrine of Zhongyong is an excellent

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traditional Confucian thinking, which is more culturally adaptable to Chinese people. This study promotes the development of mental health treatment for high school students in China. Promoting the combination of mean thinking and classical psychotherapy helps advance the development of Chinese localized psychotherapy.

Modern psychological stress theory holds that stressors are influenced by mediating psychological factors and impact mental health. High school students' stressors mainly include learning pressure, pressure from teachers, family environment pressure, parental discipline pressure, classmates' and friends' pressure, social and cultural pressure, and self-physical and mental pressure. Because of the increase of these factors, the negative emotions brought by the stressor will increase, thus showing more depression tendencies.

High school is a critical growth stage in life. Living environment, interpersonal relationships, academic pressure, and family relationship are all important factors that can affect the mental health of high school students. Therefore, it is crucial how high school students choose to face life. Studies have shown that the critical factor affecting high school students' psychological and emotional stability is their ways of thinking as individuals. Depression patients have the problem of thinking in ways that are too extreme. For example, excessive strict self-criticism leads to self-abasement, too negative views on other things, overly extracting negative emotions from other adverse events and things, and then self-absorbing them; the above actions tend to indicate that they bear more negative emotions and show more depression [1].

Therefore, changing the way of thinking can change moods and thus effectively control mental health. Zhongyong, as a way of thinking, its core concept lies in the perception of yin-yang transformation and its overall importance, manifested as the multiple thinking, integration, and harmony of events in interpersonal interaction situations in daily life [2]. Multiple thinking is the degree to which individuals think from different perspectives; Integrability refers to the degree to which external information is integrated with internal thoughts; Harmony refers to the degree to which a non-extreme and harmonious way has adopted the criterion of action when expressing opinions. Research has found a strong link between mean thinking and individual mental health; individuals with more robust Mean thinking have stronger coping and adjustment abilities in the face of negative energies and depression, showing better social adjustments. Similarly, individuals with lower mean thinking exhibit higher levels of negative emotions such as sensitivity and paranoia [3].

Based on this conclusion, this study will further determine the relationship between stressors, mean thinking, and depression tendencies, confirm the impact and positive effect of mean thinking on depression tendencies through relevant data analysis and study the mediating effect of mean thinking on stressors and depression tendencies of high school students.

## 2 Method

### 2.1 Participants

With convenient sampling, the questionnaire investigation was conducted on 216 students from Grade 1 to Grade 3 in three high schools in Jiangsu Province. The average age of the participants was 14. A total of 212 valid questionnaires were collected, and

the effective questionnaire rate was 98%. Seventy-one males and 145 females, with a ratio of about 1:2.

## 2.2 The Mean Thinking Scale

Wu Jiahui and Lin Yizheng developed the Mean Thinking Scale (MTS), a total of 13 items, using a 0–7 Likert 7 score (1 = very inconsistent, 7 = very consistent), including three dimensions of multi-thinking, integration, and harmony. The higher the score, the higher the level of mean thinking. The scale's Cronbach's  $\alpha$  coefficient is 0.87, and the test-retest reliability is 0.81 [2].

## 2.3 Self-rating Depression Scale

Self-rating Depression Scale (SDS) was developed by Zung, a Chinese American professor at Duck University, in 1965 [4]. It has been widely used abroad because of its simple method and good quality. In 1977, the American Institute of Mental Health compiled this scale into the Institute's scale manual. The scale consists of 20 items, using a 4-level score, which mainly evaluates the degree of symptoms. The criteria are: '1' no or little time, '2' little time, '3' considerable time, '4' most or all time. After the self-assessment, the scores of 20 items are added to obtain the raw score, and then the standard score is obtained by formula conversion. Of the 20 items of SDS, items 2, 5, 6, 11, 12, 14, 16, 17, 18, 20 were calculated in reverse.

## 2.4 Stressor Scale for Middle School Students

Stressor Scale for Middle School Students, compiled by Zheng Quanquan et al. [5], has seven dimensions to assess students' learning pressure, teacher pressure, family environment pressure, parenting style pressure, peer pressure, social and cultural pressure, and their own physiological and psychological pressure, respectively. The scale is graded as none, mild, moderate, severe, and extremely severe. The Cronbach's  $\alpha$  coefficient of the scale was 0.93; the test-retest reliability is 0.86. High scores on the scale indicate multiple stressors, while low scores indicate the opposite.

## 3 Result

Table 1 shows some dimension features of the sample. It can be seen from the Table 2 that stressors were positively correlated with depression tendency ( $r = 0.461$ ,  $p < 0.01$ ) and negatively correlated with mean thinking ( $r = -0.295$ ,  $p < 0.01$ ). Mean thinking was negatively correlated with depression tendency ( $r = -0.462$ ,  $p < 0.01$ ). As is shown.

As for mediating effect, this paper uses the Process mediating effect test to discuss the simple mediating effect of the concept of mean thinking between stressors and depression. The bootstrap method repeatedly samples the original sample and constructs 95% confidence intervals. The result is shown in Table 3. From its direct effect, the coefficient from stressor to depression is 0.092 ( $p < 0.001$ ). Confidence interval is

**Table 1.** Analysis Table of Dimension Features of Sample [Photo credit: Original]

Element	Minimum	Maximum	Mean	Standard deviation
1. Mean thinking	37.00	91.00	70.8009	8.9816
2. Multi-thinking	8.00	28.00	21.7778	3.1176
3. Integration	14.00	35.00	26.9491	3.7996
4. Harmony	8.00	28.00	22.0741	3.7938
5. Stressors	39.00	194.00	69.1528	29.6110
6. Learning pressure	5.00	24.00	10.7361	4.2568
7. Teacher pressure	7.00	35.00	11.6806	6.3256
8. Family environment pressure	5.00	25.00	7.8750	4.2848
9. Parenting style pressure	4.00	20.00	6.4306	3.3298
10. Peer pressure	7.00	35.00	12.5231	6.2338
11. Social and cultural pressure	6.00	20.00	9.7500	4.6590
12. Self-psychological pressure	5.00	35.00	10.1574	4.4921
13. Depression tendency	20.00	80.00	46.1574	7.6536

**Table 2.** Correlation Analysis of the Research Variables [Photo credit: Original]

Variables and Dimensions	1	2	3	4	5	6	-
1. Mean thinking	1						
2. Multi-thinking	.769**	1					
3. Integration	.877**	.528**	1				
4. Harmony	.857**	.470**	.641**	1			
5. Stressors	-.295**	-.225**	-.280**	-.233**	1		
6. Learning pressure	-.287**	-.258**	-.265**	-.202**	.822**	1	
7. Teacher pressure	-.199**	-.104	-.192**	-.193**	.884**	.638**	
8. Family environment pressure	-.252**	-.152*	-.255**	-.215**	.867**	.584**	
9. Parenting style pressure	-.353**	-.285**	-.322**	-.279**	.888**	.703**	
10. Peer pressure	-.243**	-.222**	-.235**	-.159*	.921**	.743**	
11. Social and cultural pressure	-.270**	-.221**	-.249**	-.208**	.891**	.645**	
12. Self-psychological pressure	-.271**	-.198**	-.258**	-.220**	.881**	.794**	
13. Depression tendency	-.462**	-.366**	-.418**	-.375**	.461**	.382**	

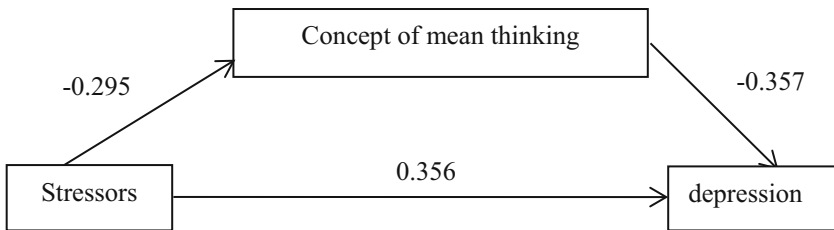
(continued)

**Table 2.** (continued)

Variables and Dimensions	7	8	9	10	11	12	13
7. Teacher pressure	1						
8. Family environment pressure	.745**	1					
9. Parenting style pressure	.759**	.782**	1				
10. Peer pressure	.762**	.771**	.769**	1			
11. Social and cultural pressure	.751**	.819**	.759**	.783**	1		
12. Self-psychological pressure	.708**	.656**	.777**	.788**	.735**	1	
13. Depression tendency	.362**	.397**	.439**	.440**	.440**	.399**	1

**Table 3.** Significance Test and Effect Value Of Mediating Effect [Photo credit: Original]

Effect	Effect	BootSE	BootLLCI	BootULCI	Effect rate
Direct-effect	0.092	0.015	0.062	0.122	77.3%
Mesomeric effect	0.027	0.010	0.011	0.049	22.7%
Gross effect	0.119				



**Fig. 1.** Mediating effect model of mean thinking [Photo credit: Original]

[0.062, 0.122] which doesn't include 0. This result indicates stressors can validly predict depression.

From its indirect effect, stressor to depression's Bootstrap 95% confidence interval is [0.011, 0.049] with the concept of Zhongyong. The result proves the existence of the mediator effect, which occurs in 22.7% of the total. Figure 1 shows the mediating effect model of mean thinking [6].

## 4 Discussion

### 4.1 Stressors and Mean Thinking

This study found a significant negative correlation between stressors and mean thinking. In this study, the stressors included learning pressure, teacher pressure, family environment pressure, parental discipline pressure, classmates and friends pressure, social and

cultural pressure, and self-physical and mental pressure. Stressors are direct and vital factors influencing the formation and development of high school students negative emotions. As a way of thinking, the core of the mean lies in the perception mode of yin-yang transformation and the general nature, which can be reflected in the multiple thinking, integration, and harmony of event clues in daily life [7]. The doctrine of mean thinking is a part of the ability of self-regulation. It has the processing mode of self-regulation thinking, which enables people to actively adjust their emotions, states, and behaviors under certain circumstances. Therefore, moderation thinking can encourage individuals affected by stressors to regulate negative emotions. In conclusion, moderation thinking plays a mediating role between stressors and negative emotions caused by stressors in high school students, reducing the influence of stressors on high school students.

#### **4.2 Mean Thinking and Depression Tendency**

This study found that there was a significant negative correlation between mean thinking and depression tendency. This result is consistent with previous results [1, 3, 8]. The mean doctrine refers to an unbiased, compromised, and harmonious attitude towards life. High school students with depression often have the problem of too extreme thinking and mean thinking emphasizes the positive regulation of emotions. Individuals with high moderation thinking are more inclined to combine their intrinsic values and needs with the current environment to adopt the most suitable emotional expression for the moment and achieve harmonious coexistence with the environment. As a way of thinking, mean thinking can make people think holistically and harmoniously to reduce the problem of too extreme a way of thinking caused by depression. Second, the doctrine of the mean thought has self-convergence value principle, namely “bear, let,” the principle promotes own depression tendency of high school students to change their mindset of dealing with problems [1] from the extreme way of thinking changed into a balanced compromise way of thinking, Use the mean thinking to reduce the depression tendency of high school students. In conclusion, the mean thinking is significantly negatively correlated with the depression tendency of high school students. By changing the depression tendency, the thinking mode of high school students is too extreme, and the depression tendency of high school students is weakened.

#### **4.3 Stressors and Depression Tendency**

This study found that stressors were positively correlated with depression tendency. This result is consistent with previous results [9–11]. According to the social cognitive theory of depression, depression occurs through interaction between the individual and the external social environment. The stressor is an important environmental factor that produces depression tendency. This study found that the more stressors, the greater the likelihood of depression. For senior high school students, the stressors mainly include learning pressure, teacher pressure, family environment pressure, parental discipline pressure, classmates and friends pressure, social and cultural pressure, and self-physical and mental pressure. Among them, the most significant stressors of high school students were classmates and friends pressure (mean 12.5231), teachers pressure (mean 11.6806), learning pressure (mean 10.7361), and self-physical and mental pressure

(mean 10.1574). In middle school, due to various factors such as increased academic burden, sensitive interpersonal relationships, increased learning pressure, and so on, negative emotions brought by stressors will increase, and depression tendencies will come very quickly to occur [9]. This investigation found that the more stressors there are, the greater the tendency of depression may be.

#### 4.4 Research Impact, Role, and Prospect

This study focuses on the influence of mean thinking on stressors and depression tendencies of high school students. It adopts the convenient sampling method to investigate and study three high schools. There are few types of research on mediating mean thinking in our country. Therefore, this research explores the mediating role of mean thinking on stress sources and depression tendency in high school students. This research also provides a reference for the degree and positive effect of mean thinking on depression tendency and stress sources in high school students. The research results show that the mean thinking refers to the attitude of being impartial, compromise and harmony, which can effectively attenuate the influence of stressors on depression tendency from thinking, so the mean thinking plays a mediating role in the emergency source and depression tendency of high school students.

This study is significant in determining the relationship between mean thinking, stressors, and depression tendency. The doctrine of the mean is an excellent traditional Confucian thinking, which is more culturally adaptable to Chinese people. This study promotes the development of mental health treatment for high school students in China. Promoting the combination of Zhongyong thinking and classical psychotherapy is helpful in advancing the development of Chinese localized psychotherapy.

This study has some deficiencies, which can be improved in future research. First of all, the self-rating questionnaire used in this study may have a particular impact on the accuracy of the data. In the future, other ratings can be used to improve the accuracy of the data. Secondly, this study adopts a random survey of three high schools in Jiangsu Province, which may lead to incomplete data collection. The survey scope can be expanded in the future to improve the comprehensiveness of the data.

## 5 Conclusion

The stressors of high school students are positively correlated with depression tendency, negatively correlated with mean thinking, and negatively correlated with depression tendency. There is a mediating effect of mean thinking between stressors and depression.

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