

## Study and Analysis of Adolescent Rebellious Emotional State

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**Keywords:** emotion state; rebellious period; CFPS; SPSS

**Abstract:** The questionnaire for the mental state part of the children's self-answer part of the CFPS was selected from 10 to 15 years old. In order to avoid the interactive influence of the information filled in the questionnaire, the respondents were mainly divided into two groups. The other part is a self-assessment positive mental state scale. And ensure that the two groups have equal numbers within a reasonable range of variance, and that the numbers are equally distributed in each age group.

### 1. Research Overview

The data in this article are derived from the 2016 Children's Tracking Data of the CFPS-China Family Tracking Survey. The effective sample size of the screened questionnaire is 8,425, and the data mainly includes two modules. The first module is data on parents' educational behavior. The data is mainly derived from direct interviews and indirect interviews. The second module is data on children's puberty performance. This article screens children born after 2001 and before the beginning of 2011, that is, children with a minimum age of 6 years and a maximum age of 15 years compared with 2016. Some people also think that rebellious psychology is the psychological state that often appears in the rebellious period of teenagers, which is a normal phenomenon. It is the psychological state that teenagers take an opposite attitude and words and deeds to each other in order to maintain their self-esteem. The arrival of adolescence means the gradual independence of teenagers' self-knowledge, which makes them vulnerable, sensitive, self-abased and anxious. In order to avoid the interactive effect on the information filled in the scale, the survey subjects were mainly divided into two groups, one filled in the self-rated negative mental state scale, the other filled in the self-rated positive mental state scale. In addition, it is ensured that the population of the two groups is equal within a reasonable range of variance, and the population distribution in each age group is also equal.

### 2. Analysis of mental state data of children aged 10 to 15

After data compilation, the number of self-judgement negative mental state scales reached 2532, and 20 variables were used to analyze the negative mental state of adolescents aged 10 to 15 years. The SPSS output is as follows:

**Table 1.** KMO and Bartlett test

KMO Sampling Suitability	.970
Approximate chi-square	44308.357
Bartlett sphericity test	Degrees of freedom 190
	Degrees of freedom .000

As can be seen from the above figure, the KMO value is 0.970, which indicates that the data structure is very good, and there is a linear correlation between the hypothesis test variables, and the P value is less than 0.001, which meets the Bartlett's test to reject the original hypothesis condition,

indicating that the data can be used for principal component analysis. From the SPSS output common factor variance table, it can be seen that the variables in the first column are all 1, indicating that all variables can be explained by 100%. The figure of the explanation degree of common factor variance is as follows:

**Table 2.** The explanation degree of common factor variance

ingredient	Initial eigenvalue			Extract load sum of squares		
	total	Variance percentage	Cumulative%	total	Variance percentage	Cumulative%
1	9.978	49.888	49.888	9.978	49.888	49.888
2	2.380	11.898	61.786	2.380	11.898	61.786
3	1.381	6.906	68.692	1.381	6.906	68.692
4	.891	4.456	73.148			
5	.782	3.910	77.058			
6	.764	3.818	80.876			
7	.629	3.146	84.022			

As can be seen from the above table, the characteristic value of the third principal component is 1.381, which is greater than 1, and the characteristic value of the fourth principal component is 0.891, which is less than 1. Therefore, the first three principal components are retained, and the rest are excluded.

All correlation coefficients are greater than 0.3, and it is believed that there is a linear correlation between the study variables. Therefore, three principal components are extracted for adolescents' negative mental state. The principal component extraction results show that the first three principal components have eigenvalues greater than 1, explaining 49.89%, 61.79%, and 68.69% of the total data variation.

It can be obtained from the steep slope map that the slope gradually flattened from the third node, so that the extraction of the first three principal components is more in line with actual research needs. Therefore, this study finally extracted the first three principal components, which accounted for 68.69% of the data variation, which respectively reflected the degree of interference of external factors on self-esteem, behavioral performance, and negative emotion self-suggestion. Let  $y$  be the formation of adolescents' negative emotions,  $x_1$  represents the influence of external factors on the emotions of teenagers,  $x_2$  the behavioral performance of teenagers on the formation of negative emotions,  $x_3$  represents the role of adolescents' self-suggestion on the formation of negative emotions, and the degree of cumulative interpretation based on variance. The formula is as follows:

$$y = 0.726x_1 + 0.173x_2 + 0.100x_3$$

That is, when other factors remain unchanged, the influence of external factors on the formation of youth negative emotions is relatively large, accounting for 72.6%, followed by the behavior of adolescents as a self-negative emotion, which accounts for 17.3%. The ability of self-suggestion has more influence on the formation of negative emotions, accounting for 10.0%. It can be seen from the data that when external factors have an impact on teenagers' emotions, they often feel that others are unfriendly, they often worry about small things, and they often feel a sense of failure and frustration. Teenagers with poor self-suggestion skills often feel that they are worse than others, don't want to eat, can't concentrate, etc., which often leads to poor sleep and a less pleasant life.

### 3. Conclusion

Through empirical analysis, this paper finds that the influence of external factors on the formation of teenagers' negative emotions is the greatest, and these factors mainly refer to the opinions of others on them. It shows that teenagers are more concerned about others' feelings. Secondly, their own behavior has a greater impact on their own emotional proportion, indicating that they need to be encouraged to increase their self-confidence, need to affirm their ability. It can be seen from the data

that when external factors have an impact on teenagers' emotions, they often feel that others are unfriendly, they often worry about small things, and they often feel a sense of failure and frustration. Teenagers with poor self-suggestion skills often feel that they are worse than others, don't want to eat, can't concentrate, etc, which often leads to poor sleep and a less pleasant life. Finally, self-suggestion is also important. As the first guardian of teenagers, this paper suggests that parents should encourage and praise their children more when they educate them, so as to improve their self-cognition and affirmation. In daily life, can create a relaxed and harmonious family atmosphere, let the children more brave, easily through the adolescence of emotional instability.

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