

The influence of family upbringing on test anxiety of college students: The mediating role of perfectionism

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Abstract: With the increasing pressure of choosing a career, college students have an increasingly obvious tendency to improve their competitiveness by obtaining higher test scores. Among many factors affecting test anxiety, family rearing style and perfectionism are two very important aspects. From the perspective of family environment and personality of college students, this study attempts to study the role of perfectionism in family parenting style based on the family environment and personality. perfectionism in family parenting style on exam anxiety. 185 college students were randomly selected by questionnaire to investigate their family rearing style, test anxiety and family rearing style. Paternal rejection had significant positive predictive effect on students' test anxiety, but had nothing to do with students' test anxiety. Paternal rejection had significant positive predictive effect on students' test anxiety, but had nothing to do with perfectionism; Maternal rejection was positively correlated with test anxiety and perfectionism. Parental overprotection has a significant positive effect on students' test anxiety and perfectionism. Parental overprotection has a significant positive predictive effect on students' test anxiety and perfectionism. The higher the perfectionism level of college students, the higher the degree of perfectionism, the higher the degree of perfectionism, and the higher the degree of perfectionism. The higher the perfectionism level of college students, the higher the degree of exam anxiety. Maternal rejection and parental overprotection influence test anxiety through the partial mediating effect of perfectionism. Family rearing style and perfectionist personality have an important effect on college students' test anxiety.

1. Introduction

It has been shown that nowadays college students generally have anxiety when facing various exams, and what's more, it may cause physical and mental disorders, affecting normal study and life. Foreign scholars in this field of research earlier than domestic scholars. Sarason from the cognitive and emotional point of view, test anxiety as a habitual conditioned emotional response, he believes that in the individual intelligence, motivation, social competence and learning ability, etc. does not meet the requirements of the examination situation, will induce test anxiety^[1]. Zheng Richang, a scholar in China, describes test anxiety as a kind of trait anxiety that arises when an individual is constrained by his or her own evaluative ability, personality traits, and physical and mental

characteristics under the stimulus of the specific situation of the test^[2]. Although different scholars define the concept of test anxiety differently, most scholars agree that test anxiety will have a negative impact on the physical and mental health of individuals. Currently, test anxiety is mostly measured by scales. Sarason first completed the Test Anxiety Scale (TAS) in 1978^[3], and Spielberger completed the TAI (Test Anxiety Inventory) in 1980, which includes two subscales of worry and state, with 20 questions. There are 20 questions in total^[4]. In 1985, Ling Wenbiao used TAI to assess the test anxiety of college students, and pointed out that a large number of students were "tortured" by exams and tests for many years^[5].

The factors affecting the formation of test anxiety are mainly divided into internal and external factors. The former are various factors such as the individual's own genetic factors, personality traits, self-knowledge, self-evaluation, and coping methods. The latter refers to the social environment in which the individual lives environment, family environment, parenting style, social support and other elements. Through the literature review mentioned above, among the external environmental factors formed by test anxiety, family environment is one of the common elements studied by many researchers. Li Qinghua et al. discrete analysis of anxiety of college students based on Probit model^[6], the results show that family environment, especially parents' high expectations have a significant effect on college students' anxiety. Some studies also show that test anxiety is related to parenting style^[7].

The concept of parenting style advocated by Darling is currently the most accepted in the academic world: Parenting style is a collective term for the emotional climate expressed in parents' behavior and their attitudes toward their children, which is a relatively stable behavior that is not easy to change^[8]. Gong Yihua advocates that the so-called parenting style is the behavioral pattern and behavioral intention shown in the process of raising and teaching their children, which reflects the parents' attitudes toward their children and their concept of education^[9]. In Wang Yali's study, it was found that good parenting styles, such as emotional warmth and understanding, were good positive predictors of adaptive perfectionism^[10].

In order to explore parenting styles, foreign scholars have successively compiled many questionnaires on parenting styles, among which the Evaluation of Parenting Styles Questionnaire (EMBU) compiled by C. Perris et al. of the Department of Psychiatry, Umea University, Sweden, in 1975, is the questionnaire with more applications both at home and abroad, and is objective and stable^[11]. Yue Dongmei and other scholars in China revised the EMBU questionnaire locally and formed a Chinese version of the Family Parenting Style Questionnaire (FPSQ), which contains 66 questions^[12]. Later, Jiang et al. revised the questionnaire in a more simplified way to form the s-EMBU-C scale^[13], which contains 42 questions, including 3 dimensions: parental rejection, emotional warmth, and overprotection, and a 4-point scoring system, with good reliability and validity, and is widely used.

Zi Fei's research on parenting styles and perfectionism suggests that warm understanding of parents facilitates the development of the well-adjusted dimension of perfectionism in children, who are more likely to be afraid of making mistakes, and whether parental favoritism does not affect the formation of perfectionism^[14]. The results of the study in Jusong also showed that good parenting styles were positively associated with well-adjusted perfectionism and negatively associated with maladjusted perfectionism^[15].

Adler, an Austrian psychologist, was one of the first to study perfectionism, and later Western psychologists did a lot of research on perfectionism to prove his point. According to Adler, the pursuit of perfection is the purest motivation of human beings, the intrinsic motivation of human beings to adapt to themselves, develop themselves and adapt to the environment in which they live, and this intrinsic motivation can prompt human beings to constantly change, develop and improve themselves^[16]. Frost et al. believe that perfectionism is "accompanied by excessive self-appraisal and

the setting of high standards for work" [17]. In fact, many of the current definitions of perfectionism still have a predominantly negative connotation. In the early studies of perfectionism, most researchers regarded perfectionism as a one-dimensional structure of personal standards, but since the late 1980s, scholars have increasingly tended to study perfectionism from the perspective of a multidimensional structure. Scholars represented by Frost, Marten, Hewitt&Flett, Owens, etc., proposed the multidimensional construct of perfectionism [18-19], and later Frost classified perfectionism into false attention, personal standards, suspicious behavior, parental expectations, blame and organization[20], and based on this theory, he compiled the Frost Multidimensional Perfectionism Scale (FMPS) was developed based on this theory. Later, Zi Fei and Zhou Xu revised the questionnaire with Chinese college students as the research sample, and finally revised and developed the Chinese version of the Frost Multidimensional Perfectionism Scale (CFMPS), which has a good reliability and has a wide applicability in the measurement of Chinese college students' perfectionism[21].

According to the results of Chen Shunsen and Ye Guiqing's research, the higher the level of test anxiety of high school students, the less satisfactory their grades are[22]. This indicates that students' excessive demand for academic performance affects the development of test anxiety psychology, and students' demand for academic performance is reflected in the perfectionist psychology. The results of Zhang Xiuge's related research on middle school students show that middle school students' perfectionism affects their test anxiety[23]. Zhang Lijun's research on the relationship between these two in adolescents, perfectionism will have an impact on adolescents' test anxiety[24].

2. Methodology

2.1 Subjects

A total of 185 university students participated in the questionnaire survey, of whom 58 were men and 127 were women; 79 were only children and 106 were not; 72 had families in rural areas and 114 had families in urban areas.

2.2 Measuring tools

2.2.1 Short-form parenting questionnaire (S-EMBU-C)

The Chinese version of the S-EMBU-C parenting method was modified for the 2010 Chiang Award. The questionnaire had two subscales for the parenting version, each with 21 questions. A four-point scale was used, including three dimensions of rejection, emotional warmth, and overprotection, and the higher the scores of the dimensions, the more fathers and mothers preferred this parenting style. The coefficient of homogeneity of the dimensions in this study ranged from 0.64 to 0.84, and the re-test reliabilities also reached the significant level, which can indicate that this questionnaire has good reliability.

2.2.2 Test Anxiety Inventory (TAI)

The Test Anxiety Inventory (TAI) was used in this study, which is a 20-item scale that contains both worry and emotional dimensions. Each subscale consists of eight questions and is scored on a four-point scale. Question 1 is a reverse scoring question. The sum of the scores of the 20 questions was calculated as the total score, with a minimum score of 20 and a maximum score of 80; the higher the score, the higher the level of anxiety. The scale was tested and found to have good reliability and validity, with Chronbach's alpha coefficients of 0.80 and 0.84 for the worry and emotional subscales respectively, and an overall internal consistency of 0.90 for the scale, indicating that the questionnaire

has good reliability.

2.2.3 Chinese version of the Frost Multidimensional Perfectionism Scale (CFMPS)

The Chinese version of the Frost Multidimensional Perfectionism Scale (CFMPS), revised by Zi Fei and Zhou Xu, was used, which consists of 27 questions divided into five dimensions: "fear of mistakes", "parental expectations", "personal standards", "doubts about action" and "rationality". The CFMPS consists of 27 questions divided into five dimensions: "fear of mistakes", "parental expectations", "personal standards", "doubts about action", and "rationality", and is based on a five-point scale, with higher scores indicating a greater tendency toward perfectionism. The Cronbach's a coefficients for each dimension of the scale ranged from 0.60 to 0.85, and the Cronbach's a coefficient for the total scale was 0.80, indicating that the reliability of this scale is good.

3. Results

3.1 Common method bias test

Since all the data in this experiment were collected by electronic questionnaires and some of the questions were reverse scored, possible common bias was controlled for during the actual survey, thus requiring a test for common method bias. In this study, Harman's one-way test was used, and the total number of factors with eigenvalue roots greater than 1 in the results was 21, of which the largest percentage of variance explained was 18.43%, which was much smaller than 40%, and thus it can be assumed that there is no obvious common method bias in this scale.

3.2 Descriptive statistics score and correlation analysis

Table 1: Descriptive statistics and correlation analysis of variables (N=185)

	The father refused	Father's Emotional Warmth	Overprotective father	Mother's refusal	Mother's emotional warmth	Overprotective mothers	Test anxiety	perfectionism
M	8.46	17.64	15.19	8.96	19.97	16.65	38.71	83.89
SD	2.71	4.96	2.95	3.14	4.95	3.82	10.81	17.62
1	1	-0.31**	0.50**	0.53**	-0.15*	0.37**	0.23**	0.86
2		1	0.24**	-0.17*	0.48**	-0.00	-0.07	0.08
3			1	0.30**	0.07	0.43**	0.26**	0.21**
4				1	-0.38**	0.54**	0.39**	0.20**
5					1	0.11	-0.17**	0.04
6						1	0.29**	0.35**
7							1	0.38**
8								1

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. Same below.

Descriptive statistics and correlation analysis were performed on the scores of the main variables, and the results are shown in Table 1. It can be seen that test anxiety was significantly and positively correlated with father's rejection ($r=0.23$, $p<0.01$) and father's overprotection ($r=0.26$, $p<0.01$), and significantly and negatively correlated with mother's rejection ($r=0.39$, $p<0.01$) and mother's overprotection ($r=0.29$, $p<0.01$). Positive correlation, and a significant negative correlation with maternal emotional warmth ($r=-0.17$, $p<0.01$). Perfectionism was significantly positively correlated with paternal overprotection ($r=0.21$, $p<0.01$) and significantly positively correlated with maternal rejection ($r=0.20$, $p<0.01$) and maternal overprotection ($r = 0.38$, $p<0.01$). Test anxiety and perfectionism ($r=0.38$, $p<0.01$) were significantly positively correlated.

3.3 Tests for mediating effects

In this study, the mediation effect analysis was conducted using the mediation effect test procedure proposed by Wen Zhonglin^[25], using the plug-in process3.3 in SPSS24.0 with the bias-corrected nonparametric percentile Bootstrap method, with the dimensions of fathers'/mothers' parenting styles as the independent variables, test anxiety as the dependent variable, and perfectionism as the mediator variable.

In the results of the mediation effect test, the resulting Bootstrap 95% confidence interval was [0.06, 0.55] when the mediation effect analysis was conducted with father overprotection as the dependent variable, which did not contain zero, thus the mediation effect of perfectionism on father overprotection and test anxiety was significant. The results are shown in Table 2.

Table 2: Table of mediating effects of perfectionism as a mediator before the dimension of overprotective father and test anxiety

	Effect	BootSE	BootLLCI	BootULCI
indirect effect	0.27	0.13	0.06	0.55
direct effect	0.67	0.25	0.19	1.15
aggregate effect	0.94	0.26	0.45	1.46

After controlling for the mediating variable of perfectionism, and the results are shown in Figure 1, the effect interval [0.19,1.15] of the independent variable of father overprotection on test anxiety did not contain 0, and the predictive effect was significant, indicating that the mediating variable of perfectionism partially mediated the effect of father overprotection and test anxiety, with a mediation effect rate of 29%.

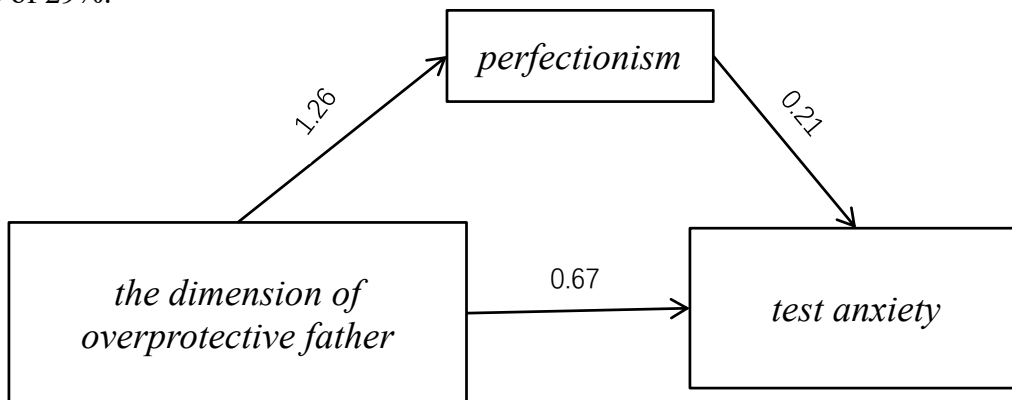


Figure 1: The mediating model of perfectionism between the dimension of overprotective father and exam anxiety

Table 3: Mediation effect table for perfectionism as a mediator before the mother rejection dimension and test anxiety

	Effect	BootSE	BootLLCI	BootULCI
indirect effect	0.22	0.10	0.02	0.42
direct effect	1.12	0.26	0.60	1.61
aggregate effect	1.34	0.28	0.78	1.87

When analyzing the dimensions of mother's parenting style as the independent variables, the Bootstrap 95% confidence interval obtained when mother's rejection was used as the independent variable was [0.02, 0.42], which did not contain zero, thus the mediating effect of perfectionism on mother's rejection and test anxiety was significant. The mediating effect at this point is shown in Table 3 as the results shown:

After controlling for the mediating variable of perfectionism, the effect interval [0.60,1.61] of the

independent variable of mother rejection on test anxiety did not contain 0, and the predictive effect was significant, suggesting that the mediating variable of perfectionism partially mediated the effect of mother rejection and test anxiety, with a mediation effect rate of 16%. The results are shown in Figure 2.

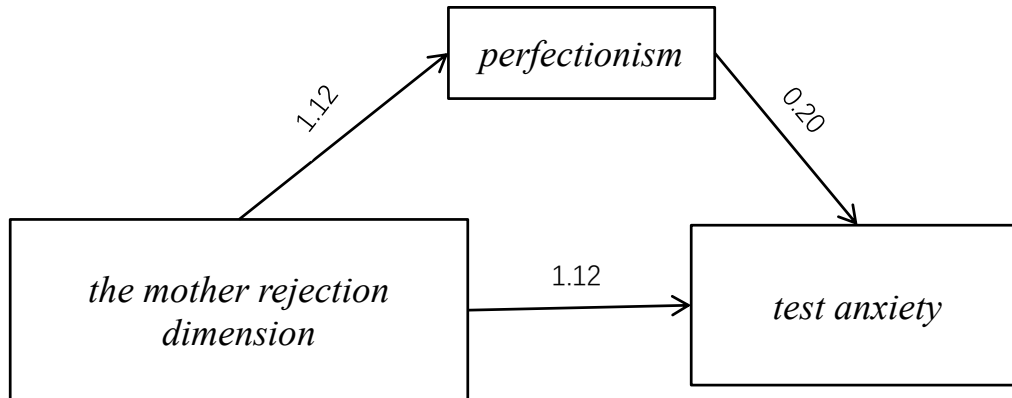


Figure 2: The mediating model of perfectionism between the mother rejection dimension and exam anxiety

When maternal overprotection was used as the independent variable, the resulting Bootstrap 95% confidence interval was [0.15, 0.55], which did not contain zero, thus the mediating effect of perfectionism on maternal rejection and test anxiety was significant. The mediating effect at this point is shown in Table 4 for the results shown:

Table 4: Mediation effect table for perfectionism as a mediator before the dimension of maternal overprotection and test anxiety

	Effect	BootSE	BootLLCI	BootULCI
indirect effect	0.32	0.10	0.15	0.55
direct effect	0.49	0.22	0.05	0.92
aggregate effect	0.81	0.24	0.35	1.27

After controlling for the mediating variable of perfectionism and the results are shown in Figure 3, the effect interval [0.05,0.92] of the independent variable of maternal overprotection on test anxiety did not contain 0, and the predictive effect was significant, suggesting that the mediating variable of perfectionism partially mediated the effect of maternal overprotection and test anxiety, with a mediation effect rate of 40%.

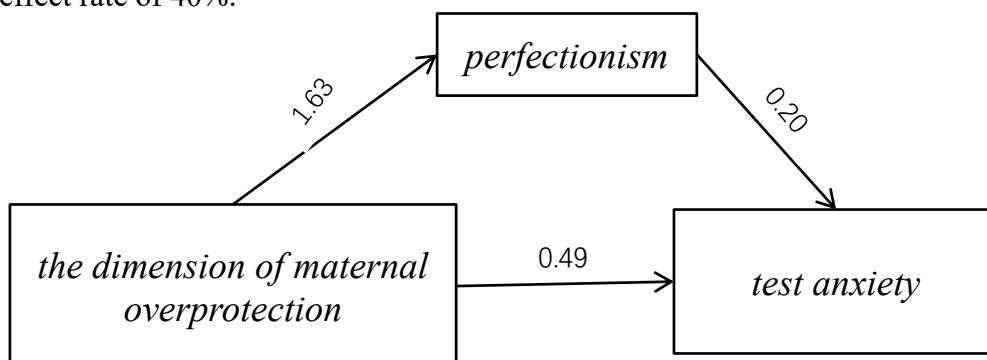


Figure 3: The mediating model of perfectionism between the dimension of maternal overprotection and exam anxiety

4. Conclusions

4.1 Discussion of the results of descriptive statistics and correlation analysis of parenting styles, test anxiety, and perfectionism among college students

From the results, it can be seen that college students' test anxiety is significantly and positively correlated with parental rejection and parental overprotection, which is basically consistent with Wang Miaomiao's study^[26]. Parents are the first teacher of children, students' character and personality are mostly influenced by their parents, and overly strict or overly pampered parenting styles are not conducive to children's growth. When parents adopt negative parenting styles and deal with their children in a strict and rejecting way, children will be relatively sensitive, have low self-esteem, and worry too much that failing the exam will damage their self-esteem, so they attach great importance to the exam, and need to prove themselves through better academic performance, so they will have high test anxiety before the exam^[27].

In the results of this study, father's emotional warmth has no significant correlation with students' test anxiety, and mother's emotional warmth has a significant negative correlation with students' test anxiety, while in Wang Miaomiao's results, both parents' emotional warmth and test anxiety show a negative correlation^[26]. This may be related to the expression of emotional warmth of our parents. In our culture, fathers are more subtle and introverted in their expression of love for their children, while mothers' emotional warmth for their children is more direct and exists in a subtle way, so fathers' emotional warmth will have less influence on students, but mothers' influence on students will be greater. This is consistent with previous research findings that children of parents who adopt positive parenting styles on a regular basis are more inclined to face difficulties positively and deal with stress effectively, as described in the Parental Acceptance-Rejection Theory^[28].

Parental overprotection is significantly and positively related to perfectionism, which is consistent with the results of Wang Meng's study^[29], when parents are overprotective, children will lack the opportunity to exercise, thus limiting the development of their abilities, dependence, poor resilience, lack of initiative, and easy to do things carefully, forming perfectionism^[30]. Maternal rejection is significantly and positively related to child perfectionism. Mothers' rejection is insensitive to children's emotional needs, requires compliance with parents in all matters, they themselves are afraid of mistakes and failures, their self-worth depends mainly on parental approval, and their children try their best to be perfect in order to avoid parental rejection^[31]. They usually think that "if I do better, if I am perfect, my parents will love me"^[32], and the unconscious internalization of parental standards by children leads to the development of strict self-criticism and a constant search for perfection.

There is a significant positive correlation between perfectionism and test anxiety. This is consistent with the findings of Wang Yanchun et al.^[33-35]. The more an individual pursues perfection, the more he or she will be afraid of failure and expect success or over-achievement in the examination, which will lead to anxiety. Whether an individual can be sensitive to his or her own emotions and whether he or she can reasonably release the pressure when facing stress to face the examination with a good state of mind also affects the level of examination anxiety to a certain extent^[36].

4.2 Discussion of Results of the Mediating Role of Perfectionism on Family Parenting Relationships and Test Anxiety in College Students

In this study, perfectionism has a partial mediating effect on both the independent variable and the dependent variable test anxiety when parents are overprotective of the independent variable. When parenting with overprotective parents, students' independence development is greatly limited, self-awareness is underdeveloped, and the goals established when something needs to be accomplished differ from their actual level. A study of biracial children found that an elevated sense of being overly

concerned with making mistakes led to increased levels of anxiety^[37]. This suggests that being overly concerned with one's inadequacies regardless of one's actual level of competence can potentially lead to anxious affective states^[35].

Maternal rejection not only positively predicts test anxiety, but also predicts test anxiety through the mediating effect of perfectionism. The mother's rejection, as the child's significant other, may cause the child's nonadaptive cognition^[38], in pursuit of the mother's approval, the child overly seeks for higher standards and fails to view achievement correctly, thus generating a higher level of test anxiety.

5. Prospects and shortcomings

The present study shows that perfectionism is partially mediated between parental overprotection, maternal rejection and test anxiety, i.e., family upbringing has a direct or indirect effect on students' personality formation and academic performance. In terms of family upbringing, more attention should be paid to the development of students' self-independence, so that students can distinguish between actual levels and self-expectations that are not equal. Parents can allow students to make their own choices at all levels of schooling or other key events in their development, so as to cultivate the character of students to make their own decisions and be responsible for themselves from an early age, and to gradually develop an objective understanding of themselves.

Researchers need to combine theory and practice, pay more attention to students' physical and mental health, and pay more attention to and prevent college students' test anxiety. Families and schools should pay attention to the cultivation of students' self-independence from childhood, both in life and personality, to help students form an objective understanding of themselves, so that the actual level of students and self-expectation to reach a balance as much as possible, and reduce test anxiety.

By exploring the correlation between college students' family upbringing styles, test anxiety and perfectionism and the mediating role and mechanism of perfectionism between upbringing styles and test anxiety, this study perfects the research on the influencing factors of college students' test anxiety and also plays some complementary roles and enriches the exploration of college students' test anxiety. At the same time, this study on perfectionism to explore the relationship between family upbringing styles and test anxiety, the exploration of family upbringing styles and perfectionism is also more detailed, enriching the study of these two.

Due to the lack of ability on my subjective side and the influence of some factors on the objective side, there are still the following shortcomings in this study: in terms of research tools, this experiment uses the questionnaire method to investigate, and all questionnaires are electronic questionnaires, and the scale has more questions, which can't guarantee the state of the subjects when they fill out the questionnaire. And only 185 valid questionnaires were recovered in this study, there is still a lot of room for expansion in the sample size.

From the results of the study, although the present study suggests that perfectionism partially mediates the effects of certain dimensions of family parenting style on test anxiety, how the dimensions of perfectionism play a role in the relationship between family parenting style and test anxiety was not explored and needs to be examined in greater depth.

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