Relationship between General Self-Efficacy, Personality Traits and Family Functions of Parents of Low-grade Primary School Students

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Abstract: Objective to explore the impact of self-efficacy and parents' personality traits on the family functioning in the students of First and Second grade. Method Four hundred parents randomly selected from 4 private primary schools in Tangxia, Dongguan were measured with General Self- Efficacy Scale (GSES), Big Five Aspect Scale(NEO-FFI) and Family Adapation and Cohension Scale, Second Edition-Chinese Version （FACESII-CV）. Result Firstly, most students have a Intermediate family. There are significant differences between groups with high family functioning and groups with low family functioning in each dimension of NEO-FFI except openness and self-efficacy($P<0.001$). Both neuroticism and conscientiousness play significant roles in predicting family cohension ($P<0.001$). The following four vaiables of neuroticism, conscientiousness, openness and general self-efficacy play significant roles in predicting family adaptability ($P<0.001$). Conclusion   There is significant correlation between the results of family functioning and the self-efficacy, and personality traits of parents.

1 Introduction

Family is the living environment which an individual contacts earliest, and is also the most basic unit of human life. It provides material guarantee and psychological support for the survival and development of an individual. Family function is an important indicator to measure the health of a family system, and also one of the deep variables that affect the physical and mental development of family members [1]. Its normal functioning plays an important role in an individual's personality development, values formation, social adaptability cultivation and physical and mental health [1].

Family functions can be divided into two categories if defined from the perspective of task fulfilling or specific characteristics. On this basis, two orientations of family function theory have emerged. One is oriented by family functioning results and the other is oriented by the characteristics of the process of family activity [1]. The first theory is represented by Epstein, Skinner and Ding Wen [2-4]. They believe that the family function is a series of tasks accomplished for the healthy development of family members' physiological, psychological and social functions, such as satisfying individual clothing, food, shelter, transportation and other material needs, to promote the development of families and their members or dealing with various family emergencies. The second theory is represented by Olson, Beavers, and Ezekiel [5-7]. Olson [5] argues that the family function is the emotional connection of family members, family rules, family communication and the effectiveness of external events. Beavers et al. [6] use the family relationship structure, reaction flexibility, family member's contact quality and family intimacy, adaptability and other characteristics to reflect the level of family function. The studies by Xu Jie, et al. have shown that the characteristics of the process of family activity play a greater role in the prediction of anxiety, depression and other emotional problems of teenagers than the family function [8].

Olson's theory of circular patterns states that family functions are divided into three dimensions: intimacy, adaptability and communication. There is a curvilinear relationship between family function and intimacy and adaptability, a high or low intimacy and adaptability may lead to family dysfunction. According to the characteristics of intimacy and adaptability, families can be divided into different types, of which the balance-type family means a well-balanced family and the extreme-type family means a problematic family [5].

Family relationship is an important variable that affects the family function, including parent-child relationship and conjugal relationship, as well as interactions among family members such as parental dependency, parent-child conflicts, parent-child communication, marital conflicts, and marital communication [9-10]. These factors involve various members of the family, such as parents and children, but the most important members are parents. As the manager of family affairs and the responsible person of family activities, the management style and management ability of parents (especially those responsible for family affairs, which we call "guardian parents") are the key factors that affect their management effectiveness (i.e. family function). As personality has an overall effect on an individual's psychology and behavior [11], it can be assumed that the managing style (of a family), as an individual's behavioral style, should have some relation to the personality trait.

General self-efficacy is a kind of overall self-confidence that the individual has when dealing with various challenges or facing new things [12]. Specific self-efficacy refers to people's level of self-confidence for the ability to use their own skills to complete a task [9], and it can effectively predict the performance of individuals in this area [13]. Specific self-efficacy has some intermediary effects between the general self-efficacy and the job performance [14]. This shows that the general self-efficacy is the basis for the formation of a variety of specific self-efficacies, and it can predict the positive specific self-efficacy.

A good family function plays an important role in the normal growth of an individual. Low-grade primary school students are on the transitional period from early childhood dominated by game-driven activity to the schooling that is led by systematic learning, the development of good learning and behavior habit has a far-reaching influence on their subsequent study and life. Parental management is very important for the development of children's good habits.

Based on the above analysis, we intend to take the guardian parents of low-grade primary school students as an example to explore the influence of parents' general self-efficacy and personality traits on the family function.

2 Objects and Methods

2.1 Objects

A random cluster method was used to randomly select 4 private primary schools from Tangxia Town, Dongguan City. In each private primary schools, one class (60 students per class) were respectively taken from Grade 1 and Grade 2 and a total of 480 students' guardians from 8 classes were taken as the objects. To those guardians, 480 questionnaires were distributed and 427 valid questionnaires were collected. The questionnaire has an effective rate of 89.0%. Among them, 129 were males (30.2%).

2.2 Tools

2.2.1 General Self-Efficacy Scale, GSES） [15]

The Scale is compiled by German scholar Ralf Schwarzer et al. (1981), revised into the Chinese version by Zhang Jianxin and Schwarzer (1995) and used a self-rating scale. There are 10 items in total, which are used to evaluate individuals' self-efficacy in the general field. Likert-4 points scoring is adopted. "1" point to "4" points respectively stand for "completely incorrect" to "completely correct". The total score of the scale ranges from 0 to 40, and a higher score indicate that the individual's general self-efficacy is stronger. In the present study, the Cronbach alpha

coefficient of GSES was 0.873 and the retest reliability at 30 days was 0.846.

2.2.2 Big Five Aspect Scale, NEO-FFI [16]

This scale was prepared by Costa and McCrae et al. (1992), revised into the Chinese version by Zhu Xiaojia (2012). As a self-rating scale, it is used to assess the personality traits of individuals. The scale contains a total of 60 items, covering five dimensions, i.e. neuroticism, extroversion, openness, pleasantness and preciseness. Likert-5 points scoring is adopted. "1" point to "5" points respectively stand for "very inconsistent" to "very consistent." In this study, the Cronbach alpha coefficient of the total scale was 0.824, and the Cronbach alpha coefficient of each dimension was 0.713 to 0.809; the retest reliability with a 30-day interval of the total scale was 0.811, the retest reliability of each dimension was 0.697to 0.844.

2.2.3 Second Edition-Chinese Version, FACESII - CV [17]

This scale was prepared by Olson et al. and revised by Fei Lipeng et al. (1999). As a self-rating scale, it contains a total of 30 items, including two subscales, mainly used to evaluate two aspects of family functions: ① Intimacy: The closeness degree of emotional ties between family members; (2) Adaptability: The ability of the family system to change correspondingly with the situation of the family and different stages of family development. Likert-5 points scoring is adopted. "1" point to "5" points respectively stand for "very inconsistent" to "very consistent." In this study, the Cronbach alpha coefficient of the total scale was 0.878, and the alpha coefficient of each dimension was 0.739-0.866; the retest reliability with a 30-day interval of the total scale was 0.868, the retest reliability of each dimension was 0.734 to 0.832.

2.3 Implementation Process

At a parent meeting, the selected parents were tested with school as a unit. The test was conducted using a standardized method.

2.4 Statistical Analysis

Use SPSS23.0 statistical software package for data processing. The statistical method mainly involved single-factor variance analysis, correlation analysis, regression analysis and path analysis.

3 Results

3.1 Descriptive Statistics

Table 1 Descriptive Statistics and Correlation Analysis Results for Each Study Variable (n = 427)

	M（SD）	1	2	3	4	5	6	7
Self-efficacy	27.54（5.45）							
Nervosity	29.92（7.48）	-0.136**						
Extraversion	43.00（6.12）	0.201**	-0.558**					
Openness	36.02（4.73）	0.149**	0.166**	0.165**				

	M (SD)							
Pleasantness	45.59 （5.73）	-0.056	-0.396**	0.401**	-0.198**			
Preciseness	47.61 （5.69）	0.256**	-0.484**	0.535**	-0.019	0.365**		
Family intimacy	72.02 （9.07）	0.211**	-0.478**	0.403**	0.000	0.289**	0.494**	
Family adaptability	48.67 （7.34）	0.302**	-0.321**	0.335**	0.154**	0.126**	0.404**	0.722**

Note: **$p<0.01$.

Table 1 shows that family intimacy and adaptability scores were 72.02 ± 9.07 and 48.67 ± 7.34 respectively. According to Olson's family classification criteria, balanced-type families accounted for 20.9% of the total; intermediate types accounted for 62.4%; and extreme types accounted for 16.8%. In other words, the low-grade primary student families mostly belong to intermediate types.

Except for the correlation between pleasantness and self-efficacy, openness and preciseness, openness and family intimacy which were significant, the correlation between the two of the rest all reached a significant level ($P < 0.01$).

3.2 Relationship between General self-efficacy, Personality Traits and Family Function

A hierarchical regression analysis was carried out with the general self-efficacy and personality traits as independent variables, and family function as the dependent variable. To reveal the influence of general self-efficacy and personality traits on the family functioning, we established two hierarchical regression equations. By introducing general self-efficacy or personality traits, we examined the role of personality traits or general self-efficacy in family functioning. That is, with family intimacy and family adaptability as the dependent variables respectively, the general self-efficacy and personality traits variables were placed in the first (second) or second (first) layer with the access method. The results are as shown in Table 2.

As can be seen from Table 2, F values at each level has reached significant levels, indicating significant predictors exist in the independent variables. After controlling for the influence on the general self-efficacy, personality traits still played a very significant predictive role in the family intimacy and the family adaptability; ΔR^2 were 0.323 and 0.241 respectively; ΔF were 36.307 and 18.052 respectively; both reached the significant level at 0.001 level. However, the influence of personality traits is controlled, there is a difference in the predictive role of general self-efficacy on family intimacy and family adaptability. Where, the general self-efficacy has no significant influence on the ΔF value of family intimacy, which means that personality traits can predict family intimacy more effectively than general self-efficacy, and it is a predictor of family intimacy. While the general self-efficacy has an extremely significant influence on the ΔF value of family adaptability, which means that the general self-efficacy and personality traits are all predictors of family adaptability. Through observation of the standard coefficient, it has been found that the Nervosity and preciseness among personality traits are the predictors of family intimacy; and the Nervosity, openness, preciseness and general self-efficacy are predictors of family adaptability.

In order to further explore the relationship between the above variables, it was proposed to establish multivariable regression models of personality traits and family intimacy as well as multivariable regression models of general self-efficacy, personality traits and family adaptability. First, family intimacy or family adaptability was used as a Y variable, general self-efficacy or personality traits was as an X variable. The proposed multivariable regression equation was subject to the significance test, and the results are as shown in Table 3 and Table 4. The results of variance

analysis on family intimacy and family adaptability reached significant level (P <0.01), which showed that the linear relationship between X variables and Y variables was significant. It is reasonable and feasible to establish multivariable regression model .

Table 2 Hierarchical regression analysis for the influence of general self-efficacy and personality traits on family functioning

Step	Predictive variable	Family intimacy					Family adaptability				
		R^2	ΔR^2	β(1)	β(2)	F	R^2	ΔR^2	β(1)	β(2)	F
Step 1	Self-efficacy	0.044	0.042			19.764***	0.091	0.089			42.504***
	Efficacy			0.211***	0.087*				0.302***	0.179***	
Step 2	Personality Traits	0.333	0.323			34.918***	0.252	0.241			23.594***
	Nervosity				-0.288***					-0.181**	
	Extraversion				-0.034					0.043	
	Openness				0.048					0.152**	
	Pleasantness				0.070					-0.016	
	Preciseness				0.289***					0.257***	
		ΔF=36.307***					ΔF=18.052***				
Step 1	Personality Traits	0.326	0.318			40.738***	0.233	0.214			24.233***
	Nervosity			-0.293***	-0.296***				-0.190**	-0.181**	
	Extraversion			0.042	0.028				0.059	0.043	
	Openness			0.058	0.053				0.172***	0.152**	
	Pleasantness			0.054	0.072				-0.049	-0.016	
	Preciseness			0.311***	0.291***				0.302***	0.257***	
Step 2	Self-efficacy	0.332	0.323			34.864***	0.252	0.241			23.549***
	Efficacy				0.085*					0.179***	
		ΔF=4.029*					ΔF=15.851***				

Note: **p＜0.01，***p＜0.001;β (1) and β (2) are respectively the normalized regression coefficients of the variables after the first-level and the second-level variables enter the regression equation respectively.

Table 3   Variance Analysis of Family Intimacy Regression Equation

Model	Quadratic sum	Degree of freedom	Mean square	F	*P*
Regression	11177.796	2	5588.898	99.150**	0.000
Residual	23900.054	424	56.368		
Total	35077.850	426			

Note: **P<0.01

Table 4   Variance Analysis of Family Adaptability Regression Equation

Model	Quadratic sum	Degree of freedom	Mean square	F	P
Regression	5762.412	4	1440.603	35.311**	0.000
Residual	17216.366	422	40797		
Total	22978.778	426			

Note: **$P<0.01$

The stepwise regression method was used to evaluate the predictive role of personality traits (X_1 variable) on family intimacy(Y_1 variable) , and the predictive role of personality traits(X_2 variable) and general self-efficacy (X_3 variable) on family adaptability (Y_2 variables). The proposed multivariate regression equation was subject to the significance test, and the results are as shown in Table 5 and Table 6.

Model	Predictive variable	β	t	P	R	R^2	ΔR^2	SE
1	Preciseness	0.404	9.117	0.000	0.404	0.164	0.162	6.725
2	Preciseness	0.350	7.819	0.000				
	Self-efficacy	0.212	4.729	0.000	0.453	0.205	0.202	6.626
3	Preciseness	0.273	5.445	0.000				
	Self-efficacy	0.210	4.735	0.000				
	Nervosity	-0.161	-3.289	0.001	0.475	0.225	0.220	6.487
4	Preciseness	0.267	5.398	0.000				
	Self-efficacy	0.182	4.121	0.000				
	Nervosity	-0.195	-3.980	0.000				
	Openness	0.164	3.788	0.000	0.501	0.251	0.244	6.387

Table5 Stepwise regression analysis of the influence of personality traits on family intimacy
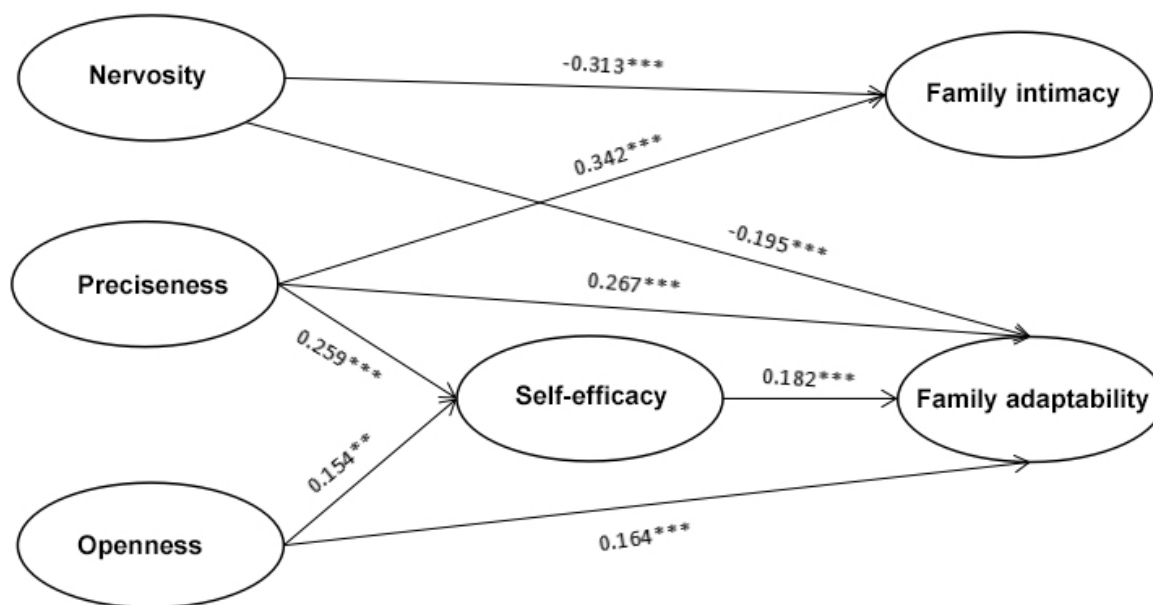
Model	Predictive variable	β	t	P	R	R^2	ΔR^2	SE
1	Preciseness	0.494	11.703	0.000	0.494	0.244	0.242	7.901
2	Preciseness	0.342	7.475	0.000				
	Nervosity	-0.313	-6.829	0.000	0.564	0.319	0.315	7.508

Table 6 Stepwise regression analysis of the influence of personality traits on family adaptability

According to the results in Table 5 and Table 6, through the stepwise regression analysis with general self-efficacy as the dependent variable and personality trait as the independent variable, it is

found that openness and preciseness have entered the regression equation and the path map is as shown in Figure.1.

Figure 1   General self-efficacy, personality traits and family function path map

Note: **$p<0.01$，***$p<0.001$

As can be seen from Figure 1, Preciseness and nervosity have entered the regression equation of family intimacy (R = 0.564, P <0.001), both of which have interpreted 31.5% variation of family intimacy (ΔR^2 = 31.5%); Preciseness, nervosity, openness and general self-efficacy have entered the regression equation of family adaptability(R = 0.501, P <0.001). The three have interpreted a total of 24.4% of the variation in family adaptability ($\Delta R2$ = 24.4%). Among them, preciseness and openness further affect family adaptability through general Self-efficacy, which is consistent with the results of hierarchical regression analysis.

4 Discussion

Through this study, it has been found that the balanced-type of low-grade primary student families accounts for 20.9%, the intermediate type accounts for 62.4% and the extreme type accounts for 16.8%. Compared with previous studies, the proportion of the intermediate type has increased significantly, the proportion of the balanced-type has decreased significantly, and the proportion of the extreme type shows no significant change [18-19]. It is suggested that 79.1% of low-grade primary student families have more or less problems, that is, at least either family intimacy or family adaptability is at the extreme level [20].

According to this study, it is also found that Nervosity and preciseness are the predictors of family intimacy. Nervosity, preciseness and openness, and general self-efficacy are the predictors of family adaptability. The general self-efficacy has some intermediary effects between preciseness and family adaptability as well as between openness and family adaptability. In other words, the Nervosity plays a predictive role on family intimacy and family adaptability, which is a direct negative predictive effect; while the preciseness and openness play a predictive role on family adaptability, part of which is direct positive effect, and the other part works through the intermediary variable of general self-efficacy.

The direct predictive effect of Nervosity, preciseness and openness is mainly reflected in the direct influence on the parental management ability and management style:

Nervosity [16] refers to an individual's tendency to experience negative emotions. High-neurotic parents are more sensitive to the outside world, having more psychological pressure and impulsive words and deeds, and they are more likely to experience negative emotions such as anger, anxiety and depression, and showing stronger reactions to external stimuli than the average person. They have poor ability to regulate emotions, as well as poor ability to think, make decisions, and respond effectively to external pressure. This hinders the full communication among family members and results in that they cannot find a solution to the problem calmly and effectively. Besides, it also tends to cause family conflicts due to improper words and deeds, thereby reducing family intimacy and family adaptability.

Preciseness [16] refers to such personality traits rigorous, careful and self-restraint. High-preciseness parents showed strong organizational skills, and they are rigorous and meticulous, sustained, faithful and trustworthy, and have a strong moral principles, self-grasp ability and lofty ideals, preferring to adopt an efficient strategy [21] to enable the family to deal with difficulties more effectively, to be less negatively stimulated, to generate less family conflicts and conflicts, thus improving family intimacy and family adaptability [21].

High- openness parents are imaginative, independent and seeking changes. They are willing to accept new ideas and find new ideas [15]. Facing difficult problems, they can guide families to break the routine and creatively solve problems so that the family can better overcome difficulties and adapt to new environments and new situations, showing a higher degree of family adaptability.

General self-efficacy is not equal to actual ability, and it is only a kind of overall self-confidence which affects the actual effect of various tasks [13]. High general self-efficacy can help parents to better deal with family affairs and improve family adaptability.

The general self-efficacy has some intermediary effects between preciseness and family adaptability as well as between openness and family adaptability. That means, the preciseness and openness also work on the family adaptability through general self-efficacy in addition to the above direct influence. High-preciseness or high-openness parents tend to show a higher general self-efficacy which motivates them to think proactively, thereby they are more likely find a solution to the problem so that their family show a higher adaptability.

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