

The Prediction of Test Anxiety Based on Family Communication Pattern Dimensions: The Mediating Role of Academic Resilience Among First Year High School Students

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Background: Anxiety as a global phenomenon and an inseparable part of human life has attracted the attention of many researchers in the field of psychology. Regarding the effect of family institution on the attitude and performance of children, Fitzpatrick and Ritchie believe that family is a source where expectations, beliefs and norms of familial life are established, and form the viewpoint and interaction of person with existence.

Objectives: The aim of present study is to investigate the mediating role of academic resilience in the relationship between dimensions of family communication pattern and test anxiety in first-grade high school male students.

Materials and Methods: The study comprised 291 male high school students, selected by random multi-stage cluster sampling method in Shiraz, Iran. The family communication patterns questionnaire, academic resilience inventory (ARI) and test anxiety questionnaire were used for collection of data. The Cronbach's coefficient was used to ascertain the reliability of research. The results showed an acceptable reliability of the instrument. The collected data were analyzed using SPSS software, and simultaneous multiple regressions for predicting variables.

Results: Results showed that 1- Family conversation orientation was negative and significant predictor of test anxiety, 2- Family conversation orientation was positive and significant predictor of academic resilience, 3- Family conformity orientation was positive and significant predictor of test anxiety, 4- Academic resilience played a complete mediating role in the relationship between family conversation orientation and test anxiety.

Conclusions: According to these results, increasing of conversation orientation and resilience and decreasing of conformity orientation leads to reduction of test anxiety in first-grade high school male students.

Keywords: Resilience; Test Anxiety Scale; Family; Communication; Conformity

1. Background

Anxiety as a global phenomenon and an inseparable part of human life has attracted the attention of many researchers in the field of psychology. Atkinson and Hilgard (1) defined anxiety as a form of stress and worry that is intertwined with fear, but its reason is less obvious and more ambiguous than fear. Human in his life experiences various kinds of anxiety, including the test anxiety which is experienced in schooldays or the whole education period. Test anxiety refers to a kind of fear, worry and stress which people often confront amid having a test, sometimes leading to forgetfulness; those who are worried about test and its results long before having it, completely lose their concentration during the test (2).

Sarason (1960, 1975, and 1980) defines anxiety as a kind of mental preoccupation which is recognized by indifference and skepticism about one's personal abilities, thus

leading to negative cognitive evaluation, lack of concentration, undesired physiologic reactions and low educational performance. This mental preoccupation attracts the attention of individuals to themselves, creates disorder in their performance through decreasing their attention to incentives of learning and prevents encoding and information processing. He adds that test anxiety is established in children during interaction with their parents and is internalized during the years before attending school. Hence, negative communicative relationship patterns of parents are important in emergence of test anxiety in children (3).

Regarding the effect of family institution on the attitude and performance of children, Fitzpatrick and Ritchie (4) believe that family is a source where expectations, beliefs and norms of familial life are established, and form the

viewpoint and interaction of person with existence. Accordingly, it is expected that family is an effective factor on anxiety of children including test anxiety. Among the important models presented for the relationship between family and children's performance, family communication pattern reflects the way parents communicate with their children. The scholars who presented this model are Fitzpatrick and Ritchie (5) who identified two items of conversation orientation and conformity orientation as fundamental beliefs. These dimensions determine the extent to which members of a family talk about their thoughts and feelings and consult with each other. In the conversation dimension, all members of the family are encouraged to discuss and exchange ideas about a vast range of subjects (6), and interact spontaneously and constantly with each other (7). The conformity dimension, emphasizes on coordination, avoidance of conflicts and contrasts, dependence and unity of family members (8), urging members to unify their attitudes, values and beliefs (9) Such studies show that each of these dimensions may have certain outcomes and effects.

Another variable which may predict general anxiety as well as test anxiety is resilience (10, 11). Preliminary studies reported that resilience is a personal feature related to brilliant and extraordinary individuals. Additional studies revealed that this structure is also observable in different kind of people, on different levels of development and growth including childhood, juvenility and adulthood (12). Furthermore, it is a multidimensional structure affected by environmental context and cultural and social conditions (13, 14). In this context, some researchers attempted to identify different aspects of resilience such as academic resilience for which different definitions have been suggested (15). According to Waller (16) resilience is positive adaptation in reaction to unpleasant situation. Olsson et al. (17) define resilience as successful adjustment revealed in the time of difficulties and pressures. According to other studies, resilience as a predictor of test anxiety is influenced by other factors such as family conditions and the communicative patterns on the family (18-27). Regarding what has been said, the significant role of academic resilience in predicting test anxiety has been substantiated, a condition leading to successful results and mental peace of students. Therefore, more extensive researches in this area are considered necessary. A review on the previous research indicates that few studies deal directly with mediating role of academic resilience in predicting test anxiety. Moreover, there has been no report on the relationship between the mediating role of academic resilience and communicative patterns of family and test anxiety.

2. Objectives

The present study attempted to address the mediating role of this variable. The research hypotheses are:

1. The orientation of family conversation is negative pre-

dictor and family conformity orientation is positive predictor of test anxiety.

2. The orientation of family conversation is positive predictor and family conformity orientation is negative predictor of academic resilience.

3. Through controlling dimensions of family communicative pattern, academic resilience is a negative predictor of test anxiety.

4. Academic resilience plays a mediating role in the relationship between dimensions of family communicative pattern and test anxiety.

3. Materials and Methods

The present study is a descriptive correlative research conducted through pathway analysis method. In this study, conversation orientation and conformity orientation are the predictor variables, academic resiliencies mediating variable and test anxiety is the variable criterion. The statistical population includes all high school students in Shiraz, the capital city of Fars province, southern Iran, enrolled in the year 2013-2014. Participants included 291 male students selected through random multi-stage cluster sampling method introduced.

3.1. Research Instruments

3.1.1. Revised Family Communication Patterns (RFCP)

This scale is introduced by Koerner and Fitzpatrick (8) and evaluates the degree of respondents' agreement on 26 items on family communications on a Lickert scale from completely agree to completely disagree. The first 11 items are related to conformity orientation including (In our home, my parents usually have the last word, or my parents often say that children should not argue with adults) and the next 15 items refer to conversation orientation (In our family we often talk about our feelings and emotions or my parents encourage me to challenge their ideas and beliefs). Koerner and Fitzpatrick reported the reliability of this scale (Cronbach's alpha coefficient) for conversation dimension as 0.89 (ranging from 0.92 to 0.82) and for conformity dimension as 0.79 (ranging from 0.84 to 0.73). In Iran, Jokar and Rahimi (28) and Sabri (29) estimated the validity (factor analysis) and reliability (Cronbach's coefficient) for this scale and report it as sufficient. In this study, Cronbach's coefficient was used for determining the reliability, where 0.82 and 0.83 were calculated for conversation and conformity dimensions, respectively.

3.1.2. Test Anxiety Inventory (TAI)

This inventory includes 25 items (During examination, I cannot keep calm) that the respondent scores 0, 1, 2, and 3 on a scale of four choices (never, rarely, sometimes, and often). The minimum score in this test is zero and the maximum is 75. When a respondent achieves higher score, it

shows more test anxiety (30). In this study Cronbach's alpha coefficient were utilized to determine the reliability of questionnaire which was calculated as 0.92.

3.3.3. Academic Resilience Questionnaire

This questionnaire was designed by Martin (31) in order to evaluate the resilience of students facing impediments, challenges, stressful conditions, and educational stress. It includes 6 items (I think I can get along very well with the tensions of school) which are scored based on Lickert scale from completely disagree (1) to completely agree (5). In Hashemi research (32), the reliability of this questionnaire is reported as suitable and the findings of factor analysis of basic items indicated a general factor in the scale. In the present study, Cronbach's alpha coefficient was calculated 0.79 for reliability.

4. Results

Table 1 shows descriptive results, mean and standard deviation, the correlation matrix of bivariate variables for dimensions of family communication patterns, academic resilience and test anxiety.

As shown in Table 1, conversation orientation has negative and significant relationship with test anxiety ($r = -0.17, P < 0.01$), and positive and significant relationship was found between conversation orientation and academic resilience ($r = 0.40, P < 0.01$). Moreover, conformity orientation with test anxiety shows a positive and significant relationship ($r = 0.31, P < 0.01$) and negative and significant relationship with academic resilience ($r = -0.16, P < 0.01$). The results indicated a negative and significant relationship between test anxiety and academic resilience ($r = -0.24, P < 0.01$).

Simultaneous multiple regression analysis was used to examine the research hypotheses. The main objective of the study is to investigate the mediating role of academic resilience which is conducted through stages suggested by Baron and Kenny (33). The first stage includes a regression analysis of test anxiety score on dimensions of family communication patterns (Table 2), the second stage involves a regression analysis of academic resilience on dimensions of family communication patterns (Table 3) and the third stage comprises a regression analysis of test anxiety score on academic resilience with controlling the dimensions of family communication patterns (Table 4).

Table 1. Mean, Standard Deviation, and Correlation Coefficients of Dimensions of Family Communication Patterns, Academic Resilience and Test Anxiety

Variables	Mean	SD	Conversation Orientation	Conformity Orientation	Academic Resilience	Test Anxiety
Conversation orientation	40.61	9.67	1			
Conformity orientation	37	8.81	-0.12	1		
Academic resilience	23.20	2.59	0.40 ^a	-0.16 ^a	1	
Test anxiety	39.58	15.6	-0.17 ^a	0.31	-0.24 ^a	1

^a All coefficients are significant at the level of 0.05.

Table 2. Predicting Test Anxiety Based on Dimensions of Family Communication Patterns^a

Predictor variables	Criterion variable	F	p	R	R2	β	t	P
Conversation orientation	Test anxiety	12.22	0.01	0.34	0.11	-0.14	2.01	0.05
Conformity orientation						0.27	3.99	0.01

^a R: Coefficient of Correlation; R2: Coefficient of Determination; P: Significant Level; β : Coefficient of Regression; F: F-test; t: t-test.

Table 3. Regression Analysis of Academic Resilience on Dimensions of Family Communication Patterns (Second Stage)

Predictor variables	Criterion variable	F	p	R	R2	β	t	P
Conversation orientation	Academic resilience	20.23	0.01	0.42	0.17	0.39	5.89	0.01
Conformity orientation						-0.11	1.65	N.S

Table 4. Regression Analysis of Test Anxiety on Academic Resilience With Controlling Dimensions of Family Communication Pattern (Third Stage)

Predictor variables	Criterion variable	F	p	R	R2	β	t	P
Conversation orientation	Test anxiety	9.88	0.01	0.37	0.12	-0.07	1.01	N.S
Conformity orientation						0.27	3.99	0.01
Academic resilience						-0.16	2.17	0.05

According to the results presented in Table 2, predictor variables are all significant for test anxiety in students ($F = 12.22, P < 0.01$). It is also observed that conversation orientation dimension is a negative predictor of test anxiety ($\beta = -0.14, P < 0.01$) and conformity orientation is positive significant of test anxiety ($\beta = 0.27, P < 0.01$), hence the result confirm the first hypothesis. All predictor variables explain 11 percent of test anxiety variance.

According to the results presented in Table 3, the predictor variables are all significant predictors for academic resilience in the students ($F = 20.23, P < 0.01$). It is also observed that conversation orientation dimension is positive predictor of academic resilience ($\beta = -0.39, P < 0.01$). As observed, predictor variables explain 17 percent of academic resilience variance.

According to the results presented in Table 4, predictor variables are all significant predictors for test anxiety in students ($F = 9.88, P < 0.01$). Besides, regression analysis results show that conformity orientation dimension is positive predictor of test anxiety ($\beta = 0.27, P < 0.01$) and academic resilience is negative predictor of test anxiety ($\beta = 0.16, P < 0.05$). Hence, the results confirm the third hypothesis. It must be noted that predictor variables in total explained 12 percent of test anxiety variance.

In order to investigate the fourth hypothesis of research which is concerned with the mediating role of academic resilience in the relationship between family communication patterns and academic resilience, the regression coefficient of dimensions of family communication pattern obtained in the three stages were compared to each other. It was found that the regression of conversation orientation has decreased significantly from first to the third stage (from -0.14 to -0.07). Thus, academic resilience played a complete mediating role in the relationship between conversation orientation and test anxiety of the students.

5. Discussion

The aim of present research is to predict test anxiety and academic resilience based on dimensions of family communication pattern. The most important goal followed here is to investigate the mediating role of academic resilience in the relationship between family communication patterns and test anxiety. The results obtained are discussed in line with these objectives and the proposed hypothesis. As expected, the orientation of conversation dimension of family communication pattern is a negative significant predictor of test anxiety in children. This finding indicates that there is a greater chance of reducing test anxiety of children in families having constructive relationship, which is dominated by an interactive dialogical atmosphere. This is possibly due to the fact that children in such families enjoy the opportunity to express their feelings, beliefs, fears, problems and passions, leading to more peace which alleviates their stress more reasonably. The children in these families are aware of the fact that in case of having problems

in their education and in their tests, their parents are ready to hear, accept and support them. Hence, they experience less stress and tension in their tests. In the opposite atmosphere with existing conformity dimension of family communication pattern, children do not find the opportunity to express their ideas, feelings and beliefs. This leads to their excessive concern about parents' reaction in the face of difficulties including educational and test problems. This can be destructive and irrational and with mounting test anxiety. Regarding the performance of parents in creating test anxiety in children, Kazemian (3) reported that test anxiety was created in an unconstructive relationship between parents and children years before entering school. This concern will gradually be embedded in them, and leads to mental preoccupation accompanied by skepticism in their abilities and creation of inferiority complex, a condition resulting in increasing test anxiety. The present research also showed that academic resilience was a negative predictor of test anxiety. In other words, those who have resilience are more flexible (14) and are able to succeed under difficult situations (34) and able to think creatively and flexibly in finding solutions (35), while not getting fragile, over-excited, unreasonably emotional, and cope with undesirable and difficult situations (36). They become optimistic and are able to organize their daily responsibilities (31). Such features and characteristics help control psychological and behavioral balance under problematic and stressful situations. Hence, resilient people experience less stress in test situations.

Another finding to mention is the ability to predict academic resilience of children by family communication pattern. In this regard, Fitzpatrick and Ritchie (5) state that the dimensions of conversation orientation and conformity orientation determine to what extent members of a family talk about their thoughts and feelings and share them with each other. In conversation dimension, all member of family are encouraged to discuss and share their ideas about a wide range of subjects (6) and spontaneously interact with each other (37). As a result of this interaction, it is expected that a supportive center is established for the children who gain higher degrees of resilience.

Our study on the mediating role of academic resilience in regard to the relationship between dimensions of family communication pattern and academic resilience reveals that conversation orientation only indirectly and through mediation of academic resilience predicted test anxiety, a finding of considerable importance. This indicates that families having conversation orientation bring up their children with more resilience and subsequent reduction in test anxiety.

These findings can be applied by institutions such as education system, especially for family education programs which emphasizes reinforcing and promoting the culture of conversation and interaction among families. Such actions will lead to growth of children with high academic resilience and less test anxiety. It is also sug-

gested that future research in this field is needed using other variables of mediation such as social support.

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