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The Relationship Between Test Anxiety and Family Support, Frequency of the Anxiety, Factors Decreasing and Increasing Test Anxiety and Sex Factors Affecting Test Anxiety

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Abstract: This study examines the effects of family support, frequency of the anxiety, factors decreasing and increasing test anxiety and sex on the test anxiety levels of 8th graders residing in Çankiri, Turkey and preparing for the Secondary Education Student Selection and Placement Test. A total of 500 randomly selected students constituted the sample of the study. Their test anxiety levels were measured by using the "Test Anxiety Inventory" developed by Spielberger and adapted to Turkish by Öner. Other information about students was collected through the "Student Introduction Form". In order to discover whether student scores on the inventory differed with respect to the variables, the data was analyzed by one-way variance analysis and t-test. When the difference was found to be meaningful, Post Hoc Test (Bonferroni Test) was used to determine the group causing the difference. The analysis showed that those who said they did not receive support from their families in overcoming the anxiety, who always felt anxious during testsand whose anxiety was exacerbated by their friends were experiencing higher levels of test anxiety. Inversely, data from those who were not experiencing high levels of anxiety showed that the most important factor for them was spending time with their family members. The study ends with suggestions for children, families, educators and researchers.

Key words: Primary education, test, test anxiety, success

INTRODUCTION

Anxiety is thought to have preventing, discouraging or encouraging effects on behavior. It may lead to either normal or abnormal behaviorand includes various physiological and psychological events such as emotional reactions (state anxiety which may be exemplified by physiological stimulation, sadness, distress, a sense failure, helplessness, lack of prediction) and concern-worry-apprehension (trait anxiety) (Öner, 1981; Aral and Baþar, 1996; Aral, 1997; Köknel, 1997; Cüceloğlu, 2002). It may lead to restlessness and a significant level of maladaptation.

Anxiety and other behavioral disorders are known to occur when children are forced to prepare for examinations without considering their cognitive competence and school success (Aral and Başar, 1996; Berengi, 1996). The special type of anxiety seen during examinations in schools is called test anxiety. It manifests itself in children through a restlessness mixed with fear. It has been defined by Spielberger as a performance-suppressing emotional state with unique cognitive, affective and behavioral characteristics which occurs when faced with an examination or other type of evaluation (Özdemir, 2005). It is most common and has many adverse effects in countries where children prepare rigorously for post-primary education. One adverse effect is that it leads to the development of negative personality traits in children (Zatz and Chassin, 1983). Beidel and Turner (1998) found in a study conducted on 8-12 year children with high levels of test anxiety that 60% of them had anxiety disorders. Another adverse effect is that individuals with high test anxiety cannot fully display their cognitive skills and end up choosing lower-status jobs with low levels of appraisal and competition (Özdemir, 2005).

While in the 1960s a total of 20% of school children were reported to experience test anxiety, the rate rose to 34-41% in later years, probably due to the increased expectations of families from children and the pressures of the modern competitive environments (Kaya, 2003). Test anxiety is also said to be closely related to strict

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discipline, limiting and confidence-hurting parental attitudes, authoritarianism at schools, negative criticisms from teachers, punishments, school failuresand negative evaluations of adults (Öner, 1986, 1990; Öner and Albayrak-Kaymak, 1987). Apart from such external pressures, the existence of a neurotic cell (Man *et al*., 1991) and psychopathology (King *et al*., 1995) have also been listed among possible causes of test anxiety.

Regardless of its reasons though, test anxiety is clearly a major educational and individual problem for many children. To begin with, students with test anxiety are usually observed to fail to transfer their learning; to experience problems in reading comprehension and organizing their thoughts; to have attention deficit; to focus their attention on the test itself and the resulting emotions rather than its contents; to have weakened cognitive skills and retention problems and to have low levels of energy and experience physical problems (Anonymous, 2005). Also, in most studies, nervous and anxious children were found to be less successful and test anxiety was found to lower children's success (Özkan and Dora, 1990; Börü, 2000).

As can be seen, worrying about passing tests and at the same time experiencing pressure from the environment may lead children to develop intense anxiousness, which may in turn lead to bigger failures. In order to alleviate such anxiety, the role of family support, the frequency of the anxiety, factors decreasing and increasing it and the effects of sex should be identified. To this end, the present study focused on 8th graders from Çankiri city center who were preparing for the Secondary Education Student Selection and Placement Test at the time of the study. It aimed to determine these children's test anxiety levels and examine whether such anxiety was affected by the levels of family support, frequency of the anxiety, factors decreasing and increasing test anxietyand sex.

MATERIALS AND METHODS

The study population comprised 8th graders attending primary schools in Çankiri city center. A total of 500 children (238 girls; 262 boys) preparing for the Secondary Education Student Selection and Placement Test were selected from the population by using random sampling.

The test anxiety levels were measured by using the "Test Anxiety Inventory" developed by Spielberger and adapted to Turkish by Öner (1990). Other information about students was collected through the "Student Introduction Form". The inventory had 20 items and the two subscales of worry and emotionality. Total scores from these 2 sub-dimensions were added up to obtain the total test anxiety score.

Children in the study were grouped and given the Student Introduction Form and the Test Anxiety Inventory in their classes, respectively. The implementation took 20 min on average. Data was run on SPSS (Statistical Package of Social Science) 10.0. In order to discover whether children's test anxiety (worry, emotionality and total test anxiety) was affected by family support, frequency of the anxiety, factors decreasing and increasing test anxiety and sex, t-test and One Way Anova was used. When a meaningful difference was spotted, the Post Hoc Test (Bonferroni Test) was conducted to find the group causing the difference.

RESULTS AND DISCUSSION

Sixty percent of the children admitted to the study were found to have extensive support from their families in alleviating the anxiety and the majority (62.4%) said they sometimes or often experienced test anxiety (sometimes: 55.6%, often: 24.6%). The fear of absent-mindedness during the test emerged as a factor increasing test anxiety whereas not thinking about the test (24.8%), listening to music (14.6%) and spending time with friends (12.8%) and family (11.6%) sprang as factors decreasing it. Girls made up 52, 4% of the study sample whereas boys made up 47.6%. The distributions of children's inventory scores with respect to the variables are given in Table 1-5 and the results are interpreted and discussed.

Table 1 shows that there was a meaningful difference between children's worry ($F_{(2,497)} = 6.348$; $p<0.05$) and emotionality ($F_{(2,497)} = 6.726$; $p<0.05$) sub-test scores and total test anxiety mean scores ($F_{(2,497)} = 7.305$; $p<0.05$) in relation to family support. When worry and emotionality sub-test mean scores and total test anxiety mean scores were examined, it was seen that the children who reported to receive extensive support from their families had lower test anxiety levels whereas, those who claimed not to have any support at all had higher levels. The difference was caused by the lower test anxiety levels of children who received extensive support. Family support is known to be an important factor influencing test anxiety. It is usually emphasized that children whose families are not interested or minimally interested in their success have low success levels and those whose families are interested have higher success levels. It has been found in a study that emotional support given to children by families may have positive effects on school success whereas putting pressure on children to constantly

Table 1: The mean scores, standard deviations and variance analysis results of the Test Anxiety Inventory scores with respect to family support

Test anxiety	Level of family support	n	X	SD	df	F	p-value
Worry	Extensive support	300	15.95	4.76	2.497	6.348	0.002
	Partial support	169	16.98	4.55			
	No support at all	31	18.74	5.45			
	Total	500	16.47	4.79			
Emotionality	Extensive support	300	25.34	6.88	2.497	6.726	0.001
	Partial support	169	27.42	6.82			
	No support at all	31	28.54	7.39			
	Total	500	26.24	6.97			
Total	Extensive support	300	41.30	10.89	2.497	7.305	0.001
	Partial support	169	44.34	10.46.			
	No support at all	31	47.29	11.50			
.	Total	500	42.70	10.92			

Table 2: The mean scores. standard deviations and variance analysis results of the Test Anxiety Inventory scores with respect to the frequency of the anxiety

Test anxiety	Frequency of Test Anxiety	n	X	SD	df	F	p-value
Worry	Never	37	13.16	4.71	3.496	35.855	0.000
	Sometimes	278	15.24	3.82			
	Often	123	18.60	4.72			
	Always	62	19.74	5.48			
	Total	500	16.47	4.79			
Emotionality	Never	37	19.37	6.82	3.496	40.035	0.000
	Sometimes	278	24.79	5.88			
	Often	123	29.37	6.18			
	Always	62	30.64	7.68			
	Total	500	26.24	6.97			
Total	Never	37	32.27	11.01	3.496	46.293	0.000
	Sometimes	278	40.04	8.64			
	Often	123	48.05	10.03			
	Always	62	50.22	12.24			
	Total	500	42.70	10.92			

Table 3: The mean scores. standard deviations and variance analysis results of the Test Anxiety Inventory scores with respect to factors increasing test anxiety

Test anxiety	Factors increasing test anxiety	n	X	SD	df	F	P
Worry	Family pressure	32	16.93	4.28	6.493	1.754	0.107
	Insomnia	14	16.71	5.02			
	Health problems	9	15.66	3.00			
	Friends	21	19.14	4.81			
	Fear of absent-mindedness	312	16.34	4.57			
	Pressure from teachers	10	13.80	2.97			
	Other	102	16.47	5.62			
	Total	500	16.47	4.79	6.493	2.250	0.037
Emotionality	Family pressure	32	28.31	6.76			
	Insomnia	14	24.78	5.98			
	Health problems	9	22.55	4.39			
	Friends	21	29.42	7.33			
	Fear of absent-mindedness	312	26.28	6.36			
	Pressure from teachers	10	22.90	2.99			
	Other	102	25.67	8.80			
	Total	500	26.24	6.97			
Total	Family pressure	32	45.25	10.12	6.493	2.205	0.041
	Insomnia	14	40.78	10.13			
	Health problems	9	38.22	6.53			
	Friends	21	48.57	9.55			
	Fear of absent-mindedness	312	42.63	10.16			
	Pressure from teachers	10	36.70	4.76			
	Other	102	42.14	13.69			
	Total	500	42.70	10.92			

achieve more actually hinders it (Börü, 2000). In another study by Akbaş (1995) authoritarian parental attitudes were found to be responsible for the development of test anxiety. On the contrary, positive parental attitudes and support greatly influence children's success-especially at times of long and intensive exam preparation. Children who are accepted and supported by their families are more success-oriented than children who are not accepted by their families. The latter brings low levels of test anxiety (Baltaş, 2004).

Table 4: The mean scores. standard deviations and variance analysis results of the Test Anxiety Inventory scores with respect to factors decreasing test anxiety

Test anxiety	Factors decreasing test anxiety	n	X	SD	df	F	p-value
Worry	Listening to music	73	17.41	4.96	6.493	1.110	0.355
	Going out with friends	64	15.93	4.74			
	Watching TV	29	16.72	3.56			
	Spending time with family	58	15.72	4.35			
	Not thinking about the test	124	16.85	4.86			
	Doing exercises	15	16.73	4.87			
	Other	137	16.12	5.02			
	Total	500	16.47	4.79			
Emotionality	Listening to music	73	26.93	7.32	6.493	0.576	0.750
	Going out with friends	64	25.70	6.62			
	Watching TV	29	26.03	4.70			
	Spending time with family	58	24.96	5.46			
	Not thinking about the test	124	26.61	6.82			
	Doing exercises	15	26.26	7.00			
	Other	137	26.38	8.01			
	Total	500	26.24	6.97			
Toplam	Listening to music	73	44.47	11.24	6.493	0.871	0.516
	Going out with friends	64	41.48	10.39			
	Watching TV	29	42.75	7.41			
	Spending time with family	58	40.68	8.61			
	Not thinking about the test	124	43.38	11.01			
	Doing exercises	15	43.00	10.69			
	Other	137	42.51	12.34			
	Total	500	42.70	10.92			

Table 5: The mean scores. standard deviations and variance analysis results of the Test Anxiety Inventory scores with respect to sex

Test anxiety	Sex	n	X	SD	df	t	p-value
Worry	Male	238	15.76	4.37	498	3.697	0.055
	Female	262	17.12	5.06			
Emotionality	Male	238	24.16	6.33	498	3.274	0.071
	Female	262	28.13	7.00			
Total	Male	238	39.88	9.99	498	3.422	0.065
	Female	262	45.25	11.12			

Table 2 reveals a statistically meaningful difference between worry ($F_{(3,496)} = 35.855$; $p<0.05$) and emotionality ($F_{(3,496)} = 40.035$; $p<0.05$) sub-test scores and total test anxiety mean scores ($F_{(3,496)} = 46.293$; $p<0.05$) with respect to the frequency of the anxiety experienced by children. While, those children who reported never to experience test anxiety had very low anxiety levels, those who said that they always had test anxiety were found to have higher levels. The results also suggest that 8th graders are aware of their own test anxiety levels and can make objective evaluations of themselves. The difference was found to emerge from the low test anxiety scores of students who said they never experienced test anxiety. Various studies have shown that a moderate level of anxiety is actually essential for better performance. It can be seen that highly successful and highly unsuccessful students both have higher levels of test anxiety than moderately successful ones.

As can be seen from Table 3, the difference between emotionality ($F_{(6,493)} = 2.250$; $p<0.05$) sub-test scores and total test anxiety mean scores ($F_{(6,493)} = 2.205$; $p<0.05$) was statistically meaningful with respect to the factors increasing test a nxiety. On the other hand, worry ($F_{(6,493)} = 1.754$; $p>0.05$) sub-test scores were not statistically meaningful. Total test anxiety mean scores show that pressure from teachers led to the lowest level of anxiety whereas that from the peer group led to the highest level. The difference was seen to stem from the high test anxiety mean scores of children who stated that the peer group and family pressure led to increased test anxiety. This type of anxiety is said to be related to psychological and situational conditions such as family attitudes and pressure from teachers (Pehlivan, 2004). In a study by Geen (1987) it was concluded that children who were under too much pressure and too high levels of test anxiety were slower in studying than those who had lower levels of anxiety and that no difference existed between low and normal pressure environments with respect to test anxiety levels.

According to Table 4, there is no statistically meaningful difference between worry ($F_{(6,493)} = 1.110$; $p>0.05$) and emotionality ($F_{(6,493)} = 0.576$; $p>0.05$) sub-test scores and total test anxiety mean scores ($F_{(6,493)} = 0.871$; $p>0.05$) with respect to the factors decreasing test anxiety ($p>0.05$). Total test anxiety mean scores show that children who said spending time with family and going out with friends would lower the anxiety level indeed have low test anxiety levels. This suggests that families and friends have a positive effect on test anxiety.

Table 5 reveals that the difference between worry ($t_{(498)} = 3.422$; $p>0.05$) and emotionality ($t_{(498)} = 3.697$; $p>0.05$) sub-test scores and total test anxiety mean scores

($t_{(498)}$ = 3.422; p>0.05) is not statistically meaningful with respect to sex. The study of Everson *et al.* (1991) showed through separate factor analyses of scores obtained by girls and boys on the test anxiety inventory that the factors of worry and emotionality were the same in both sexes. However, it was also found that the test anxiety levels of girls were higher than those of boys. In other studies too, girls were seen to experience relatively higher levels of test anxiety than boys (Albayrak-Kaymak, 1987; Man *et al.*, 1991). It is believed that the different experiences of girls and boys in traditional societies, the lack of confidence in girls and the high level of parental pressure on them may lead to higher anxiety levels in girls as compared to boys.

CONCLUSION

This study was conducted with the aim of determining the effects of family support, frequency of anxiety, factors decreasing and increasing test anxietyand sex on the test anxiety levels of 8th graders from Çankiri who were preparing for the Secondary Education Student Selection and Placement Test. The results suggested that children who felt they did not receive any support from their families; those who always experienced anxiety in test situations; those who stated that family pressure and peer group increased test anxiety; those who felt listening to music and not thinking about the test decreased the anxiety and girls had higher levels of test anxiety.

In line with these results, the following suggestions may be made:

Children preparing for tests may benefit from spending time with their family and friendsand practicing a sport in coping with test anxiety. Therefore, parents may create opportunities for children to spend quality time with family members and friends. Additionally, cooperation between families and schools may be useful in decreasing test anxiety. Children may also benefit from being encouraged to concentrate on the process of test-taking rather than seeing tests as an end product and they may also need to be given opportunities to engage in sport and social activities.

Considering the importance of the topic for the general well-being of the society, large-scale studies on the implementation of individual methods to alleviate test anxiety would be useful.

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