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A Study of Income and Test Anxiety among Turkish University Students

Abstract

This study aimed to investigate the relationship between income level of Turkish university students studying at an English language teaching department and test anxiety levels as well as worry and emotionality components of test anxiety. 249 (60 male, 189 female) undergraduate students studying at an English Language Teaching Department of a state university in Turkey participated in the research. The participants were administered the Test Anxiety Inventory before their final exams and were asked to self-report their income level. The students' income levels were classified as very low, low, moderate and high ($M = 2.31$, $SD = 1.01$). The correlation between test anxiety and income level was measured by *Pearson's Correlation Test* and the comparison of the test anxiety results of different groups of income was measured via *One Way ANOVA*. The results showed a negative correlation between test anxiety and the level of income ($r = -.37$, p (one-tailed) $< .001$) as well as worry (one component of test anxiety) and income ($r = -.32$, p (one-tailed) $< .001$) and emotionality (another component of test anxiety) and income ($r = -.38$, p (one-tailed) $< .001$). It was also seen that there was a statistically significant difference between different groups of income in terms of total test anxiety [$F(3, 245) = 13.791$, $p = .000$] and components of test anxiety: worry [$F(3, 245) = 10.116$, $p = .000$] and emotionality [$F(3, 245) = 14.006$, $p = .000$]. Discussion and implications of the results are presented.

Key Words: Income Level, Test Anxiety, Components of test Anxiety, Turkish University Students.

1. Introduction

People now live in a world constantly demanding more and more and as cited by Zeidner (1998), many people call the second half of 20th century as the age of anxiety. Socioeconomic inequalities, namely the differences in income and socio-cultural levels make it harder for people with very low income to keep up with the demands of today's world and much research focused on the relationship between level of income and social life. In broader terms, all research related with the level of income focus on the effects of low income on three basic aspects: social, academic and personal. For example, Eamon (2000) stated that children who live in a low income environment are more likely to be susceptible to have impaired peer relations, low self-esteem, and low levels of sociability than children who live in families with greater financial resources. Similarly, Woolfolk et al. (2003: 162-163) suggested that factors such as peer influences and resistance cultures, are related to poverty. These findings suggest that low income seems to have a direct effect on social skills. Since low income seems to be limiting individuals in terms of social connections, negative reflections of such a pressure can also be seen in terms of academic success. For instance, Woolfolk et al. (2003) reviewed the literature and showed that income along with poor social skills may affect academic achievement by bringing out factors such as teacher bias, child rearing styles (lack of enough support) and home environment and resources. Similarly, Yousefi et al. (2010) found a negative relationship between income and academic achievement in Iranian high school students. Also, other research shows that income level may affect individuals' self-perceptions as well. For example, it is seen that students from low income groups show signs of negative self-esteem and self-confidence as well as low expectations and learned helplessness (see Woolfolk et al., 2003 for a review). Since cognitive and social development as well as achievement at school and productivity in life can be negatively affected by low income and limited resources (Hill

and Sandfort, 1995; Thomas, 2005), people with very low income feel more anxious and more disadvantaged than the ones with higher income levels.

Parallel with the effects of income, anxiety can be described as the tense, unsettling anticipation of a threatening but vague event; a feeling of uneasy suspense, as cited by Trifoni and Shahini (2011). Parallel with the construct of state and trait anxiety, test anxiety is conceptualized as situation specific trait anxiety which appears over time within exam situations with two components, worry and emotionality (Spielberger et al., 1976). Worry refers to the negative expectations from an evaluation situation as well as low self-esteem and confidence along with self-related negative thoughts and emotionality refers to the physical responses seen during an exam because of anxiety (Spielberger, 1980). According to Liebert and Morris (1967) and Stöber (2004), self-related negative thoughts and low self-esteem are related to high levels of anxiety. Most students and teachers would know that high levels of anxiety and especially test anxiety is a phenomenon which affects learning and/or test performance negatively. Research has showed that students with high test anxiety levels show signs of feeling tense, helpless and of having low self-esteem and increased negative self-related thoughts (Covington, 1998; Spielberger and Vaag, 1995; Zeidner, 1991; Zeidner, 1998; Zeidner and Matthews, 2005; Hembree, 1988). Also, a great body of research revealed a negative relationship between test anxiety and achievement (see Zeidner, 1998 for a review).

When the effects of income in social life and education are considered, it is highly possible for income to have a relationship with anxiety level of individuals. For example, Melchior et al. (2010) have reported that young people from low income families have higher symptoms of depression and anxiety than youths from families with intermediate/high income. It was also suggested in the research that young people with lower income would have a higher potential to experience psychological difficulties in the future, which suggests that income has an important role in shaping an individual's life. In another study, Yousefi et al. (2010) found that family income affected test-anxiety levels of Iranian high school students significantly. However, the studies examining the relationship between income and test anxiety in Turkey have diverse results. For example, in a recent study conducted in Turkey among elementary school students, Aydın (2013: 70-71) reported that "economic background of the students was not found to be a factor that affected their levels of test anxiety". In other words, different levels of test anxiety were seen among high school students in the research, regardless of the level of income. Similarly, Yıldırım (2008) focused on the effects of familial variables on test anxiety among high school students and found that while factors such as frequency of quarrels in the family, the family's projecting familial issues onto the children and the family's pressuring the students to study influenced students' level of test anxiety significantly, other familial factors including the number of people in the family and family income did not have a significant impact on the level of test anxiety. An interesting result of this study also revealed that while the mother's level of education had an effect on test anxiety level, the father's level of education did not have the same significant effect. In contrast to the results of these studies, Yıldırım and Gözüyeşil (2011) reported a significant difference in anxiety levels of high school students in Turkey in terms of the family's monthly income and parental educational level and concluded that social background was an important variable in terms of test anxiety levels. Parallel with that, in another study conducted among Turkish university students by Çağlar et al. (2012), it was found that family income led to a significant difference between the subscale of social avoidance and concern in terms of social anxiety. Since different types of anxiety can be considered to be stemming from one basic tenant of anxiety, "the fear of failure" and lead to lower levels of self-confidence, this result seems to be in parallel with that of the studies related to level of income, socio-economic status and test anxiety.

Studies in the literature focused mostly on the relationship between only low income level children, their anxiety level and achievement at school. Studies concerning the relationship between different income levels and test anxiety are rare in the literature. In fact, it is even more difficult to find such studies in Turkish university contexts. Therefore, this research aimed to find answers for two basic research questions:

1-) Is there a relationship between income and test anxiety among Turkish university students?

2-) Do different levels of income lead to a significant difference in anxiety levels?

2. Method

2.1. Participants

249 undergraduate students (60 male and 189 female) of 18 to 23 years old ($M = 20.48$, $SD = 1.59$) studying at the Department of English Language Teaching in a state university in Turkey formed the population of the study. The students were asked to self-report their income level and since the gross minimum wage announced by the Ministry of Welfare of Turkey is \$514, the students' income level was categorized into four groups: very low (\$0-\$514), low (\$515-\$1052), moderate (\$1053-\$1578) or high (\$1579+) in respect to the current exchange rate (\$1=1.9 Turkish Lira). The self-report results showed that the students' income level ranged from very low to high ($M = 2.36$, $SD = 1.03$) and most of the students had low income. The descriptive data related to the participants are presented in Table 1.

Table 1. Descriptive Data Related to the Participants

		N
Income (\$)*	Very low (\$0-\$514)	58
	Low (\$515-\$1052)	87
	Moderate (\$1053-\$1578)	60
	High (\$1579+)	44

*Income was changed from Turkish Lira to U.S. Dollars according to the current exchange rate (\$1=1.9 TL)

2.2. Means of Data Collection

The research took place during the final exams, assuming that the participants from different classes would have similar reactions since they were all taking final exams. All the participants were administered the Turkish version of the Test Anxiety Inventory (TAI-Spielberger, 1980) prepared by Öner (1990) to measure the test anxiety levels. TAI is a 20-item inventory consisted of two inventories: testing worry and emotionality and components of test anxiety. By adding up the scores obtained from these two inventories, overall test anxiety scores were calculated and because Öner (1990) reported high cronbach alpha coefficients for the Turkish version of TAI (Worry = .93, Emotionality = .94, the total TAI score = .93), the test was accepted as a valid and reliable instrument. This research focused on worry and emotionality separately along with total test anxiety level.

2.3. Data Analysis

To answer the first research question regarding the presence of a relationship between income level and test anxiety scores, *Pearson's Correlation Test* was used at the beginning. Later, to see whether there is a significant difference among groups of various income levels and total test anxiety as well as components, *One-Way ANOVA* was employed separately.

3. Results

3.1. Income and Test Anxiety

The result of the correlation test is given in Table 2.

Table 2. Results of the Correlation Test

		test anxiety	worry	emotionality
income	Pearson Correlation	-.374	-.319	-.380
	Sig. (1-tailed)	.000	.000	.000
	N	249	249	249

As seen in Table 2, there is a significant correlation between income level and test anxiety ($r = -.37$, p (one-tailed) $< .001$), income and worry ($r = -.32$, p (one-tailed) $< .001$) and emotionality ($r = -.38$, p (one-tailed) $< .001$). These results suggest that the higher the level of income a student has, the lower the level of anxiety can be expected to be present and vice versa.

The results of the difference among income levels and test anxiety are presented in Table 3.

Table 3. Results of ANOVA for Test Anxiety

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	5625,304	3	1875,101	13,791	.000
Within Groups	33311,909	245	135,967		
Total	38937,213	248			

The results showed that there was a statistically significant difference between groups in terms of test anxiety scores [$F(3, 245) = 13.791$, $p = .000$]. Post hoc comparisons using *Tukey HSD* test showed that the difference in the test anxiety level between very low (51.36 ± 12.95), low (46.16 ± 11.53 , $p = .044$), moderate (40.42 ± 11.11 , $p = .000$) and high income (38.36 ± 10.83 , $p = .000$) were significant. Similarly, the difference between low income and moderate income ($p = .019$) as well as low income and high income was also statistically significant ($p = .002$). However, the difference between moderate and high level income ($p = .812$) was not statistically significant. Finally, income had a large effect on the level of test anxiety ($\eta^2 = 0.14$).

3.2. Income and Worry

Table 4 shows the results of the difference among income levels and worry component of test anxiety.

Table 4. Results of ANOVA for Worry

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	745,104	3	248,368	10,116	.000

Within Groups	6015,145	245	24,552
Total	6760,249	248	

According to the test results, there was a statistically significant difference between groups in terms of worry scores [$F(3, 245) = 10.116, p = .000$]. *Tukey HSD* test pointed that the difference in the worry score of test anxiety between very low (19.69 ± 5.49), moderate ($15.42 \pm 4.43, p = .000$), high income ($15.20 \pm 5.02, p = .000$) was significant. Similarly, the difference between low income (17.68 ± 4.89) and moderate income ($p = .035$) as well as high income was also statistically significant ($p = .037$). However, the difference between very low income and low ($p = .081$) as well as moderate and high level income ($p = .996$) was not statistically significant. It can also be concluded that income had a medium large effect on worry component of test anxiety ($\eta^2 = 0.11$).

3.3. Income and Emotionality

The results of the difference among income levels and emotionality component of test anxiety can be seen in Table 5.

Table 5. Results of ANOVA for Emotionality

	Sum of Squares	df	Mean Square	F	Sig
Between Groups	2297,132	3	765,711	14.006	.000
Within Groups	13394,386	245	54,671		
Total	15691,518	248			

As for the results of physical responses of test anxiety called as emotionality component of test anxiety and income level, a statistically significant difference was also seen [$F(3, 245) = 14.006, p = .000$]. Post hoc comparisons of *Tukey HSD* test revealed that the difference in the emotionality scores between very low (31.67 ± 7.93) and moderate ($25.0 \pm 7.36, p = .000$) and very low and high income ($23.16 \pm 6.52, p = .000$) was significant. Also, the difference between low income (28.48 ± 7.45) and moderate income ($p = .028$) and low income and high income was statistically significant ($p = .001$). Yet, the difference between very low income and low ($p = .056$) and moderate and high level income ($p = .593$) was not statistically significant. The results also suggested that income had a large effect on emotionality ($\eta^2 = 0.15$).

4. Discussion and Conclusion

The results of this research showed that, in the case of Turkish university students studying English, income is negatively correlated with test anxiety as well as its sub-components, emotionality and worry. In other words, the higher amount of income a Turkish university student has the lower anxiety s/he has. Since cognitive and social development as well as achievement at school and productivity in life can be negatively affected by very low income and limited resources (Hill and Sandfort, 1995; Thomas, 2005), the results seem to be parallel with those in the literature (Woolfolk et al., 2003; Yousefi et al., 2010; Melchior et al., 2010). However, the results of this study show contradictions with the results presented by Yıldırım (2008) and Aydın (2013), who found no significant relationship between test anxiety and level of income among elementary and high school students. The reason for this contraction may be due to the students' perception depending on age. In this study, the research group included university students, who are quite different from elementary or high school students. Since elementary and high school students in Turkey depend much more on their families since they live with them, this may have created the differences in the students' perceptions of life.

However, university students who formed the research group in this study may not necessarily be living with their families because of studying in a different city. From this perspective, they may feel their level of income more internalized and self-earned, which means that they are in control of the level of income they receive from their families. Also, some of the students in the research group may have a job and may have been earning a salary, which would be very different from the case of elementary and high school students. In this sense, the results of Çağlar et al. (2012) could be considered to be similar with the findings of this study in terms of the relationship between test anxiety and level of income among Turkish university students.

The most plausible explanation for the results would be provided with the social safety high socio-economic status. Since higher socio-economic status would mean higher life standards and resources, Turkish university students with lower levels of income may feel more stressed in terms of finding resources. As a result, this situation might have affected their learning and/or test taking negatively. Parallel with that, the students with lower levels of income have another potential problem to deal with: finding a job and earning money after graduation. Finding a job in today's world is different. Although English and English teachers are highly needed in Turkey, getting a good job requires higher GPA's and other central exam scores. The pressure may have been felt greater among students from lower level income than students from higher level of income. For instance, if a student has a family with high income, s/he can feel more relaxed as the family would support him/her financially until s/he finds a job. However, this is different among families with lower levels of income. Therefore, the students with lower levels of income may need to study and try harder in exams since getting higher scores would be the only way out to a higher level of income. This effort may lead to higher levels of anxiety in turn. In fact, as a personal observation, it can be said that students with lower levels of income seem to be doing much better in exams than students with higher levels of income. However, the relationship between the level of income and success was left out because of the limitation of this study.

Another reason for the negative relationship between test anxiety and income may be related to interchangeability among different types of anxiety and pressure. In a research, Önem (2010) found positive correlation between foreign language anxiety, test anxiety and general anxiety and accepted this as interchangeability between different types of anxiety since different types of anxiety share a similar notion, "the fear of failure". The test anxiety scores of the students may also be reflecting general anxiety levels. In this sense, it is understandable for participants with higher income to show lower levels of anxiety since they may feel more at ease about their future. Because of their level of income (or their parents'), no matter how badly they score on tests, they may still be able to maintain their socioeconomic level of life. In fact, as seen in the results, generally the difference between moderate and high income was not statistically significant. This may suggest that participants with a very low and low income may feel more pressure since they have a more limited support than other participants with different income levels. As a result, pressure might have led to an increase in their level of general anxiety, which was reflected into the scores of test anxiety inventory. Consequently, negative self-related thoughts and expectations from the tests or the future trigger some somatic reactions and this is reflected in the emotionality scores of the participants.

The results may suggest that affirmative action may be needed to be taken in terms of providing better learning environments and opportunities for students with lower income levels. For instance, in Turkey, students from families of higher income levels study at higher status schools or universities owing to the resources they are provided with such as private courses, etc. On the other hand, students from lower level income families have disadvantages in terms of resources. Although there are exceptional students with very low income to enroll in high

status schools, they are very rare. Also, as mentioned in the literature, students with very low income tend to have more self-related negative thoughts and less self-confidence. Therefore, activities can be organized to help them decrease these negative feelings. For example, they can be assisted during learning by teachers' positive motivation and can be praised more and more by the teacher. They can be asked to participate more by undertaking active duties in the class such as being assigned as the spokesperson for the group. Also, as suggested by Önem (2012) and Önem and Ergenç (2013), students can be asked to re-teach the topic to the class, of course when volunteered. In this way, an interaction chance and environment within the group circling around the students with lower income in the middle can be obtained. Although this would not be easy at the beginning, in time, students with very low income may increase their self-esteem and change their disadvantage into their favor by more practice.

Apart from the suggestions above, anxiety itself is an important and effective inhibitor for learning and a new approach towards lowering the levels of anxiety in learning environments should take place. For instance, Önem (2012) and Önem and Ergenç (2013) proposed and tested a successful model for teaching foreign language, which presented some activities and techniques based on various theories of anxiety in the literature. If the level of students' anxiety is lowered by employing activities, students from different income levels may achieve higher learning levels. If anxiety is taken out of the picture, a same level for learning and success may be achieved and differences among socio-economic levels may be discarded in a way regardless of a student's level of income and resources, not only in Turkey but in all educational contexts.

In this research, a quantitative perspective was taken, leaving qualitative means of data collection methods out on purpose for some reasons. First of all, as the number of the participants was high, it would be inconvenient to employ some other tools such as follow-up interviews and therefore such methods had to be left out. However, with a smaller number of participants, such tools can be used to gather insights from students firsthand. As for future studies, a smaller and more controlled group of participants can be used to form a sample and designing a qualitative study by employing tools like interviews would help to identify the setbacks faced by the students in a broader and more prescriptive way.

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