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Exam Anxiety Among Turkish Middle School Students

Ayşe Çiftci[1,*]

[1]*Department of Child Development, Cankiri Karatekin University, Türkiye*

Abstract: The purpose of this study is to investigate the anxiety levels of eighth-grade students in Nevşehir province during the high school entrance exam year and to assess the correlation between these anxiety levels and demographic factors such as gender, sibling count, parental education, and socioeconomic status. A correlational survey design was employed with a sample of 157 eighth-grade students. Data were collected using the Westside Test Anxiety Scale and a Demographic Information Form and analyzed using one-way analysis of variance, Pearson correlation tests, descriptive statistics, and SPSS version 27. The scale's dependability coefficient was determined to be $\alpha = 0.904$. According to the studies, there were no statistically significant differences ($p > 0.05$) between the test anxiety levels of the students and demographic factors such as the number of siblings, parental education, and economic status. However, gender was positively and significantly associated with test anxiety, with female students exhibiting higher anxiety levels than male students ($r = 0.350$, $p < 0.01$). These results demonstrate that while most demographic variables do not predict exam anxiety, gender remains a critical factor. The study underscores the urgent need for schools and policymakers to design and implement gender-sensitive counseling programs and prevention strategies that specifically target the heightened vulnerability of female students to exam-related stress. By highlighting regional patterns in Nevşehir and integrating classical anxiety theories with contemporary educational practice, this study offers evidence-based guidance for shaping more equitable and supportive school-based mental health policies.

Keywords: demographic variables, gender difference, secondary school students, test anxiety, Westside Test Anxiety Scale

1. Introduction

Exams are important and often used instruments in educational contexts for evaluating students' academic proficiency. However, students experience psychological stress as a result of the exam process in addition to cognitive evaluation [1, 2]. According to the study of Miller et al. [3], exam anxiety is a multifaceted psychiatric disorder that includes extreme stress, worry, and fear reactions that occur prior to, during, and following an exam. A reduction in cognitive resources brought on by this anxiety causes distraction, trouble processing information, and a lack of desire [4]. As a result, students who experience exam anxiety do worse academically and run the risk of developing psychological problems in the future [5].

Theoretical frameworks are essential for comprehending exam anxiety. The stress and coping model developed by Ahmed et al. [6] provides a basic framework for understanding how exam anxiety and the cognitive appraisal process are related. Stress reactions are produced when students view an exam as a threat, and the severity and impact of the worry are determined by coping mechanisms. Furthermore, in order to examine individual differences, Spielberger's State-Trait Anxiety Theory [7] conceptualizes exam anxiety in two dimensions: as a general predisposition toward anxiety (trait anxiety) and as a transient state (state anxiety) [8]. Exam anxiety is dynamic and multifaceted, and these models help us understand it.

Students in Turkey are subjected to severe exam pressure from a young age due to the highly competitive nature of the educational system. In this sense, the eighth grade is a crucial time since it is when pupils get ready for the centralized High School Entrance Exam (LGS), which is when anxiety tends to be at its highest [9, 10]. Exam anxiety is increased during this time because students have to deal with expectations from their families, schools, and society in addition to academic accomplishment goals [11]. Additionally, economic position and family attitudes toward exam achievement are significant environmental elements that influence students' exam experiences [12].

Exam anxiety assessment in terms of individual characteristics is especially crucial when considering gender. Exam anxiety is far higher for female students than for their male counterparts, according to a number of studies [5, 13]. Socialization processes, gender role expectations, and social pressures are all linked to this circumstance. According to reports, female students are more anxious because they worry more about their academic performance and accomplishments [5, 13]. However, research on the influence of demographic factors such as the number of siblings, parental education, and economic status on exam anxiety shows a variety of often contradicting results [14].

Examining the anxiety levels of eighth-grade children in Nevşehir Province during test season in relation to demographic factors such as gender, number of siblings, parental education level, and economic situation is the primary goal of this study. The regional setting of the data collection and the thorough analysis of how gender influences exam anxiety are what make this study unique. The

***Corresponding author:** Ayşe Çiftci, Department of Child Development, Cankiri Karatekin University, Türkiye. Email: ayse.ciftci@karatekin.edu.tr

results show that exam anxiety happens regardless of the majority of demographic factors, but gender stands out as a key predictor. This suggests that in order to lessen exam anxiety, especially among female students, advice services and educational policies must be developed [5, 15].

In conclusion, given the multifaceted and dynamic nature of exam anxiety, it is critical to address the interaction of individual and environmental elements. This all-encompassing strategy should be used by educators, guidance counselors, and legislators when creating treatments to stop and lessen exam anxiety. In this regard, the current study presents contributions with a regional focus and offers a scientific basis for the organization of guide services.

1.1. Theoretical framework

The literature mostly discusses test anxiety by making a difference between trait and state anxiety [7]. While trait anxiety describes a person's inclination to suffer worry generally, state anxiety describes the momentary anxiety that a person experiences in a particular circumstance (such as taking an exam). According to the research of Vasiou and Vasilaki [16], this divergence provides a crucial viewpoint for comprehending individual variations in test anxiety.

According to the stress and coping model developed by Ahmed et al. in 2022, test anxiety stems from cognitive appraisal processes. A stress reaction occurs when people feel threatened by an exam. The choice of coping mechanisms is influenced by this evaluation procedure. While unsuccessful coping can result in greater anxiety, good coping strategies can lessen the harmful impacts of anxiety [17].

Research on the impact of demographic characteristics on test anxiety has repeatedly shown that gender is a decisive factor. According to the works of Yarkwah [5] and Pelch [13], exam anxiety is more common among female students. Individual perspectives and socially formed gender roles are linked to this circumstance. However, research on the effects of variables including parental education and economic status shows conflicting findings [18].

Test anxiety has a detrimental effect on students' academic performance and psychological development, according to studies done especially in Turkey [5, 19]. According to these studies, test anxiety is significantly shaped by local circumstances and geographical variations. Thus, regional data collection makes it possible to create educational policies and guidance methods that are more successful.

2. Research Methodology

2.1. Research design

This study was designed utilizing the correlational survey model, which is a quantitative research method. One noninterventional descriptive research approach that seeks to determine the connections and variations between current variables is the correlational survey model [20]. This model aims to identify meaningful correlations between variables rather than proving causation [21]. This study investigated the associations between demographic factors (e.g., gender, number of siblings, parental education, economic status, etc.) and test anxiety levels among middle school students in the eighth grade. This method seeks to experimentally demonstrate the ways in which environmental and personal factors interact with test anxiety.

2.2. Participants

During the 2023–2024 school year, eighth-grade pupils enrolled in public middle schools in the Ürgüp district of Nevşehir province made up the study population. A convenience (nonrandom) sampling strategy was used to pick 157 students in total for the sample. 78.3% of the participants were female, and 21.7% were male, and they ranged in age from 13 to 15. During interpretation, consideration was given to the sample's overrepresentation of female students. Furthermore, the majority of students had several siblings. The parents' educational backgrounds were primarily elementary and high school. The low- and middle-income groups accounted for the majority of the families' economic condition. The socioeconomic features of the area are consistent with this population structure.

2.2.1. Instruments

Demographic Information Form: Developed by the researchers, this form was intended to gather basic demographic data from participants, including household income, gender, age, number of siblings, and parental education levels. The analysis of sociocultural elements that could affect test anxiety requires these data [22].

The Westside Test Anxiety Scale (WTAS): Exam anxiety is measured using the WTAS, a valid and dependable 10-item Likert-type scale with a range of 1 to 5 [23]. It has undergone extensive psychometric validation and Turkish adaptation. A high degree of reliability was shown by the Cronbach's Alpha internal consistency coefficient, which was determined to be $\alpha = 0.904$ in this study [24]. The Turkish version of the WTAS was culturally and linguistically adapted following standard back-translation procedures to ensure contextual validity [19].

2.2.2. Procedure

Data collection was voluntary, with informed consent from students and their parents. Under the guidance of teachers, the questionnaires were given out in person at a number of Ürgüp public middle schools. In order to guarantee data quality and increase student enthusiasm, this approach was used [25]. Every participant needed about 20 minutes to complete the implementation procedure. All operations followed ethical guidelines, and participant identities were kept private. The Cappadocia University School of Health Sciences Ethics Committee provided the appropriate permits for data gathering on March 6, 2024, with decision number 24.04.

2.2.3. Data analysis

The acquired data were entered into the SPSS 27 software tool for statistical analysis. The overall characteristics of the individuals and their test anxiety levels were first displayed using descriptive statistics (mean, standard deviation, frequency, and percentage). The Kolmogorov–Smirnov test was used to determine whether the scale scores were normal, and parametric tests were judged suitable for analysis [26]. Normality was confirmed separately for each demographic subgroup (gender, income, and parental education), fulfilling the assumptions for parametric testing.

One-way analysis of variance (ANOVA) was used to evaluate how demographic factors affected test anxiety. Additionally, linear correlations between continuous variables were ascertained using Pearson correlation analysis. The threshold for significance was chosen at $p < 0.05$. The scale's internal consistency was assessed using Cronbach's alpha, which confirmed its good reliability ($\alpha = 0.904$).

By using these techniques, the study investigated whether test anxiety varied considerably across different demographic groups and investigated how it related to gender, family structure, and economic status.

Although the study focused on demographic variables such as gender, sibling number, parental education, and income level, it is important to note that contextual factors—such as school climate, teacher–student relationships, and institutional support structures—were not included in the data collection process. These environmental variables may function as confounding factors that influence students' exam anxiety levels. Their exclusion should be considered when interpreting the results, as the observed associations reflect only the measured demographic characteristics.

3. Findings

The analysis results pertaining to the associations between the demographic traits of the eighth-grade children who took part in the study and their test anxiety levels are shown in this section.

3.1. Demographic data

The average age of the students who took part in the study was 13.9 years (SD = 0.56), with 78.3% of them being female and 21.7% being male. 54.8% of households reported having a monthly income over 25,000 TL, while 76.4% of children said they had more than one sibling. Both moms and dads have a primary school education (39% of mothers and 37% of fathers) and a high school education (41% of mothers and 42.7% of fathers). The sample's general socioeconomic composition is reflected in this demographic distribution (see Table 1).

3.2. Westside Test Anxiety Scale results

Students' test anxiety scores ranged from moderate to severe, with an average of 3.82 (SD = 0.76). The scale's Cronbach's alpha coefficient, which indicates great reliability, was determined to be 0.904. Additionally, effect sizes were calculated (Cohen's d = 0.73), indicating a medium-to-large magnitude of the gender difference in test anxiety.

Table 2 shows that test anxiety levels were considerably higher for female students (M = 3.95, SD = 0.69) than for male students (M = 3.41, SD = 0.82), according to an independent samples t-test (t (155) = 2.84, $p < 0.01$). This finding supports the notion that test anxiety is influenced by a student's gender and implies that female students suffer from higher levels of anxiety during exams. According to similar findings in the literature, female students have higher levels of academic anxiety [27].

The variations in test anxiety between siblings and only children were investigated using a one-way ANOVA. There was no discernible difference (F (1,155) = 1.32, $p > 0.05$). This suggests that test anxiety is not substantially impacted by the number of siblings.

There were three categories for family income: low, middle, and high. There were no statistically significant differences in test anxiety across the groups (see Table 3), according to a one-way ANOVA (F (2,154) = 0.92, $p > 0.05$). This implies that students' test anxiety levels are unaffected by family income.

The findings of the ANOVA revealed no discernible variations in test anxiety ratings according to the educational attainment of the fathers (F (2,154) = 0.84, $p > 0.05$) or mothers (F (2,154) = 1.09, $p > 0.05$). These results imply that students' test anxiety is not directly impacted by parental education.

Gender and test anxiety were shown to be positively and significantly correlated (r = 0.350, $p < 0.01$), which supports the idea that test anxiety is more common among female students. Test anxiety and other demographic factors did not significantly correlate ($p > 0.05$).

The study's conclusions show that, of the demographic factors looked at, test anxiety is most closely related to gender. Test-related stress may be influenced by gender roles and psychosocial development, as seen by the higher anxiety levels seen in female students. Test anxiety was not found to be significantly influenced by other socioeconomic characteristics, such as the number of siblings, family income, or parental education. These findings are consistent with other research highlighting the complex nature of test anxiety and how it relates to individual differences [27].

Table 1
Demographic characteristics of participants

Variable	Category	*f*	%
Gender	Female	123	78.3
	Male	34	21.7
Age	13	55	35.0
	14	72	45.9
	15	30	19.1
Number of siblings	Only child	37	23.6
	More than one sibling	120	76.4
Family income level	Below 15,000 TL	40	25.5
	15,000–25,000 TL	31	19.7
	Above 25,000 TL	86	54.8
Mother's education	Primary school	61	39.0
	High school	64	41.0
	University and above	32	20.0
Father's education	Primary school	58	37.0
	High school	67	42.7
	University and above	32	20.3

Table 2
Westside Test Anxiety Scale means by gender

Gender	Mean	Standard Deviation	*n*
Female	3.95	0.69	123
Male	3.41	0.82	34

Table 3
Test anxiety means by income level

Income Level	Mean	Standard Deviation	*n*
Below 15,000 TL	3.88	0.75	40
15,000–25,000 TL	3.73	0.78	31
Above 25,000 TL	3.81	0.76	86

4. Conclusion

While exam anxiety is highly correlated with certain demographic categories, other variables did not exhibit any significant variations, according to the study's findings. The findings are thoroughly discussed in this part in light of current research and a variety of psychological theories.

4.1. Gender and test anxiety

The study's most startling conclusion is that female students had noticeably higher exam anxiety levels than their male counterparts. This illustrates the intricate interaction of cultural, psychological, and biological elements. According to feminist and gender theories [28], females are more likely to express their feelings freely because of gender roles and societal expectations, which frequently leads to greater anxiety levels [29].

According to cognitive psychology, female students may experience more frequent and powerful negative automatic thoughts, which are a contributing factor to anxiety [30]. Furthermore, according to Bandura's social learning theory [31], girls may experience higher levels of anxiety as a result of modeling and observational learning [32]. Girls typically report higher anxiety levels, which are linked to perceived social support and self-efficacy beliefs, according to Yarkwah [5] and Pelch [13].

4.2. Number of siblings and anxiety level

Test anxiety and the number of siblings did not significantly correlate, indicating that family dynamics are more important in terms of quality than quantity. Stronger predictors of anxiety, according to family systems theory and family dynamics approaches [33], are the nature of relationships, patterns of interaction, and support networks within the family.

Accordingly, a recent study by Yu and Yan [34] found that having siblings does not directly affect academic anxiety, even though they may help children's social abilities. These findings suggest that individual psychological capacities, parental attitudes, and educational resource availability have a greater influence on the effectiveness of family support systems than does the number of siblings.

4.3. Income level and test anxiety

Test anxiety is complicated and cannot be fully explained by socioeconomic considerations, as seen by the minimal impact of economic position on this concept. According to Bourdieu's theory of cultural capital [35], anxiety is more directly shaped by personal psychological processes and environmental circumstances than by socioeconomic standing, which may have an indirect impact on academic achievement [18].

According to the theory of Putwain et al.[27], exam anxiety has stronger roots in academic and personal expectations, even though financial hardships can also be a source of stress. Similarly, in a Turkish sample, Özcan et al. [36] discovered that academic stress was not significantly impacted by income level.

4.4. Parental education level

The absence of significant differences by parental education and income level may be due to the relative homogeneity of the sample, reflecting the socioeconomic structure of the region. Cultural norms around academic achievement and family expectations may further moderate these effects.

The complexity of this variable is demonstrated by the lack of a substantial correlation between test anxiety and parental education levels. Parental education can influence academic accomplishment, according to the social capital theory of Coleman [37], although its impact on anxiety levels can differ [14]. Higher-educated parents may put pressure on their children because of their high standards, whereas other parents may take a more accepting and encouraging stance.

Attachment theory, proposed by Bowlby [38], states that the type of parent–child interaction has a greater influence on the development of anxiety. Parental sensitivity and emotional support are crucial, regardless of educational attainment [14].

4.5. Psychosocial and environmental factors

In practical terms, schools should implement structured psychological support programs, regular stress management workshops, and peer mentoring systems to mitigate exam anxiety, particularly for female students. Collaboration between school counselors and families can enhance resilience and coping skills.

The educational atmosphere, instructor attitudes, and social circumstances all influence test anxiety in addition to personal characteristics [16]. Anxiety can be effectively reduced by a supportive guidance service and a healthy school climate [27].

The growing usage of technology in recent years has led to research on how it affects test anxiety. Teenagers' academic stress and anxiety may be exacerbated by social media and digital communication. Therefore, digital life should be considered in current anxiety studies.

Gender is identified as a significant variable in this study, which emphasizes the complex nature of test anxiety. It also implies that interpersonal, familial, and environmental factors are more important in explaining test anxiety than demographic factors alone. A deeper understanding of the mechanisms causing test anxiety may be possible in future research that combines qualitative and quantitative methodologies. Future research could adopt longitudinal or mixed-method designs, incorporating variables such as self-efficacy, coping strategies, and teacher support to provide a more comprehensive understanding of exam anxiety dynamics.

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Ethical Statement

Within the scope of data collection, the necessary permissions were obtained from the Cappadocia University School of Health Sciences Ethics Committee on March 6, 2024, with decision number 24.04.

Conflicts of Interest

The author declares that she has no conflicts of interest to this work.

Data Availability Statement

The data that support this work are available upon reasonable request to the corresponding author.

Author Contribution Statement

Ayşe Çiftci: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Supervision, Project administration.

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