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Investigation of the Anxiety Level of Senior Students of the Statistics Department of the Faculty of Science in Ankara Research Universities*

Beste Buse YILDIRIM**, Mehmet YILMAZ***

Article Information	ABSTRACT
	The university period, in which people realize, evaluate and develop themselves, is extremely important. In this process, job and future uncertainty, expectations and negative influences, especially in the last year, can cause anxiety in people. This situation also affects the learning process of individuals. The aim of this study is to determine the severity of the anxiety levels in terms of various variables of the senior statistics department students. The research covers the senior students of the statistics department of the Science Faculty at Ankara research universities in the 2020-2021 academic year. Based on Ankara, Gazi, Hacettepe and Middle East Technical Universities, the sample size of the sample to be selected was determined in equal shares and 93 samples were obtained, under the assumption that the senior students of the Statistics Department of each university had equal anxiety. "Spielberger State-Trait Anxiety Inventory" and "Beck Hopelessness Scale" were applied to the research group. The obtained data were analyzed with SPSS 28 statistical program. It has been observed that the anxiety and hopelessness levels of senior statistics department students are affected by the effects of COVID-19 on future plans, monthly income, weighted grade point average at the university, age, advantages outside the university, and work experience variables, and are not affected by the gender, marital status, number of siblings, graduated high school type, university studied, reason for choosing statistics department, pre-university settlement, parent education status, job priority, future job prospect, current job prospects, current working status, the idea of finding a suitable job time in accordance with the received education, the most appropriate strategy in case of the not employed within one year, self-development in the COVID-19 pandemic variables. As a result, it is considered that the senior students' anxiety and hopelessness should be reduced, in order to improve themselves better and more effectively providing psychological counseling and guidance services and by increasing training seminars in this direction in the education process, necessary to support them in order to cope with anxiety and hopelessness. **Keywords:** Anxiety level, hopelessness level, state anxiety, trait anxiety

1. INTRODUCTION

Anxiety, which is among the emotional states that are important for people; it expresses the holistic feelings that people experience when they encounter any situation in their inner and outer worlds (Pamuk et al., 2014; Uluç and Duman, 2020). The concept of anxiety has been used frequently throughout human history. Another word meaning of anxiety is "anksiyete" and its origin comes from ancient Greek (Kaya and Varol, 2004; Ünal, 2006; Şanlı Kula and Saraç, 2016). This concept has settled in Turkish as "endişe" in daily usage, but psychiatrists have stated that the word "endişe" does not match in terms of meaning, and they agreed that the word that best fits this concept is "kaygı" (Öztürk, 2004). Anxiety, which was previously considered a biological concept, entered the field of psychology in the first half of the 20th century and related studies began at the end of the 1940s. The concept of anxiety entered the psychological literature for the first time with Sigmund Freud and it was stated as a function of the ego to express the mental state of the individual (Ünal, 2006; Uygun et al., 2016).

There are various reasons for anxiety. In cases where the usual support and environment around the individual disappear withdrawal of support from the individual; waiting for a negative result such as taking the exam without good preparation;

** PhD Student, Ankara University, Faculty of Science, Department of Statistics, Ankara-TÜRKİYE. e-mail: besteyldrm06@gmail.com (ORCID: 0000-0003-1224-8161)
*** Prof. Dr., Ankara University, Faculty of Science, Department of Statistics, Ankara-TÜRKİYE. e-mail: mehmetyilmaz@ankara.edu.tr (ORCID: 0000-0002-9762-6688)

internal contradiction between an idea believed and cared for and an behavior performed and the inability to predict what will happen in the future, i.e. the state of uncertainty; genetics and disposition placement style, internal conflicts in the subconscious, physical illnesses are among the main causes of anxiety (Kaya and Varol, 2004; Cüceloğlu, 2005). Besides the anxiety is among the most important problems of people for generations, epidemics in the century we live in can confront people in forms that are renewed every day due to rapidly developing technology, increasing population, economic problems and environmental factors (Bingöl et al., 2012; Şahin, 2019). Anxiety that can be caused by emotions and events that negatively affect the individual such as increasing uncertainty, unemployment and inequality with these changes, reduces the motivation of people and hinders them from realizing themselves. Similarly, in senior university students who want to realize and improve themselves, factors such as graduation, the beginning of business life or unemployment, and changes in social environment may cause anxiety (Tümerdem, 2007; Şentürk, 2011; Kul et al., 2020).

Anxiety, besides being a situation felt by every human (Cüceloğlu, 1993), it can be evaluated in two ways as state anxiety (acute anxiety) and trait anxiety (chronic anxiety) according to the way it occurs in people. State anxiety, which is considered temporary and short-term, includes in the cognitive assessment and interpretation perceived as negative or threatening as a reaction to the situation that arises when trying to cope with a threatening or dangerous situation in the current environment (Tovilović et al., 2009; Hoşşirin Elmas, 2010; Tektaş, 2014; Aydın and Tiryaki, 2017; Sevinç and Özdemir, 2017; Dinç and Çınar, 2019; Yılmaz, 2019). Trait anxiety that feels like within the individual and is not directly caused by the dangers from the environment, occurs as a result of the thinking that one's self-worth is threatened or as a result of feeling stress focused and tending to interpret the experienced situation. In this direction, the anxiety of the individual is constantly increasing, feels dissatisfaction, restlessness and unhappiness and become dependent on anxious lives. (Canbaz, 2001; Ehtiyar and Üngören, 2008; Aydın and Tiryaki, 2017; Tokgöz, 2017; Yalçın, 2018; Üner, 2019; Yılmaz, 2019; Akca, 2020).

Along with anxiety, the presence of negative expectations from the future and the belief that the negativity will not improve also takes the form of hopelessness.

Many factors such as the gender, the socio-economic level of the family, the accommodation problem, and the success at school of the student studying at the university, can have an effect on the anxiety and hopelessness level of the students (Doğan, 2012; Üstün et al., 2014).

While there are various studies in the literature on the anxiety level of graduate candidates in other related departments of science faculties, it has been observed that there is no study to determine the anxiety levels of students in the statistics department. In this direction, it has been aimed to determine the direction and severity of the anxiety levels with various variables of the senior students of the statistics department.

1.1. Purpose of the Study

The purpose of this study to determine the effects of the anxiety and hopelessness levels of the senior students in the statistics department of the Science Faculty at Ankara research universities, according to various variables.

1.2. Problem of the Study

In the literature, studies on the anxiety level of the students of the Science have been provided, but the studies conducted for the students of the statistics department have been limited. In this study, the anxiety levels of senior students of the statistics department of the Science Faculty studying at research universities in Ankara, will be investigated. In the study has been focused on this problem: "How do the anxiety levels of the senior students of the statistics department differ according to the relevant variables in the research?". In this context, the level of anxiety will be determined and presented in accordance with the various variables. The related research creates a new field of study in the literature, depending on its subject.

In this study, it will be revealed whether the effect of senior students of the statistics department socio-demographic characteristics is dominant or not according to the on the state and trait anxiety scales; at the same time, its effect on hopelessness levels will be examined and solutions to this problem will be presented. In the light of the research, the relationship between anxiety level and future outlook will be revealed and examined in terms of various variables.

1.2.1. Sub-problems of the study

The sub-problems to be answered in the research are as follows:

1. On which factors do anxiety of statistics graduate candidates focus on?

2. Is there a significant difference in the anxiety and hopelessness levels of senior statistics department students in terms of socio-demographic characteristics including gender, age, marital status, number of siblings, type of high school graduated, university attended and monthly income?

3. Is there a significant difference between the anxiety factors (such as the reasons for choosing the statistics department of the students, the place of residence before the university, the weighted grade point average at the university, the education level of the parents, the priority of work, the advantages for business life outside the university, the future job field and job expectation, work experience, current working status, the idea of finding a suitable job time in accordance with the received education, the most appropriate strategy in case of the not employed within one year, the effect of the COVID-19 pandemic on future plans and self-development in this process) and level of the state-trait anxiety and hopelessness?

2. METHODOLOGY

The study has been structured in accordance with the information obtained from the literature study and reliability analysis and has been defined within the framework of measurement variables. Since it has been aimed to describe the relationships between variables, the "relational screening model", one of the general screening methods, has been used.

2.1. Participants

The population of the study has been composed of all the senior students studying at the Science Faculty Statistics Department in Ankara research universities in the province of Ankara in the 2020-2021 academic year. Based on Ankara University, Gazi University, Hacettepe University and Middle East Technical University, the sample size has been determined equally, under the assumption that the senior students of the statistics department of each university had equal anxiety. Accordingly, 93 samples were drawn randomly from the population and reliability analysis was performed.

2.2. Data Collection Tools

The data collection tool of the research consists of three parts. In the first part, personal information form consisting of socio-demographic questions (including gender, age, marital status, number of siblings, type of high school graduated, university attended, monthly income) and, more specifically, which aims to determine the personal information and thoughts of the participant including (the reason for choosing the statistics department, the place of residence before the university, the weighted grade point average at the university, the education level of the parents, the priority of work, the advantages for business life outside the university, the future job field and job expectation, work experience, current working status, the idea of finding a suitable job time in accordance with the received education, the most appropriate strategy in case of the not employed within one year, the effect of the COVID-19 pandemic on future plans and self-development in this process). In the second part, the state and trait anxiety scale adapted in accordance with the "Spielberger State-Trait Anxiety Inventory" (Spielberger, 1966) was used to determine the anxiety level of the students. In the third part, the hopelessness scale adapted in accordance with the "Beck Hopelessness Scale" was used to determine the hopelessness level of the students.

2.3. Analysis of Data

In order to determine the reliability of the scales created, first of all, reliability analysis was performed for each question and the obtained data were analyzed with SPSS 28 (Statistical Package of Social Science). In order to test the hypotheses of the study, the normality test was applied to the obtained data from the relevant variables. While applying independent sample t-test or one-way ANOVA test for normally distributed variables; Mann-Whitney U test or Kruskal–Wallis H for one way analysis of variance by ranks test was applied for non-normally distributed variables. The significance was taken as 0.05 for the interpretation of the findings. In addition, Spearman and Pearson correlation analysis was applied to determine the relationship between the levels of state anxiety, trait anxiety and hopelessness. Expert opinion was consulted while interpreting the findings.

3. FINDINGS

3.1. Age

Out of 93 participants who participated in the study, 51 (54.84%) of them are between 21-23 years old; 23 (24.73%) of them are between 24-26 years old; 10 (10.75%) of them are between 27-29 years old and 9 (9.68%) of them are 30 and over (Table 1).

Table 1.
Descriptive Statistics for Age Groups

	Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
21-23	51	54,8	54,8	54,8
24-26	23	24,7	24,7	79,6
27-29	10	10,8	10,8	90,3
30 and over	9	9,7	9,7	100,0
Total	93	100,0	100,0	

As a result of the normality test applied to analyze the significant difference between age groups and total scores of anxiety levels, non-parametric tests were used because the data did not have a normal distribution in each group.

Kruskal-Wallis H test was used to determine the relationship whether there was a significant difference between the total scores of anxiety and hopelessness levels according to the age groups (Table 2).

Table 2.
Kruskal-Wallis H Test for Age Groups

	Hopelessness	Trait Anxiety	State Anxiety
Kruskal-Wallis H	11,666	2,295	4,154
df	3	3	3
Asymp. Sig.	,009	,514	,245

When the test results are examined according to Table 1; there was no significant difference between age groups and total scores of the state and trait anxiety levels ($p > 0.05$). It was concluded that there was a significant difference between age groups and total scores of the hopelessness level ($p < 0.05$).

In order to determine determine the significant difference between which age groups, the Mann-Whitney U test was applied and it is shown in Table 3 and Table 4.

Table 3.
Ranks According to Age Groups

	Age	N	Mean Rank	Sum of Ranks
Hopelessness	24-26	23	19,11	439,50
	30 and over	9	9,83	88,50

Table 4.
Mann-Whitney U Test for Age Groups

	Hopelessness
Mann-Whitney U	43,500
Wilcoxon W	88,500
Z	-2,523
Asymp. Sig. (2-tailed)	,012

According to the test results, between the age group of 30 and over and the age group 24-26 difference was statistically significant. The hopelessness levels of individuals in the 24-26 age group were higher than those in the 30 and over age group (Table 3-4).

The descriptive statistics for the current working status and work experience of the participants regarding the difference in hopelessness level in the age group 30 and over are shown in Table 5 and Table 6.

Table 5.
Descriptive Statistics for Current Working Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Working	8	88,9	88,9	88,9
Not Working	1	11,1	11,1	100,0
Total	9	100,0	100,0	

Table 6.
Descriptive Statistics for Work Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	8	88,9	88,9	88,9
No	1	11,1	11,1	100,0
Total	9	100,0	100,0	

According to descriptive statistics, the reason why there is no difference in the level of hopelessness for those aged 30 and over is that 8 out of 9 participants aged 30 and over both have work experience and are working. (Table 5-6).

3.2. Monthly Income

Out of 93 participants who participated in the study, the monthly income of 41 (44.1%) was 1000-1499 TL; 12 of them (12.9%) was 1500-1999 TL; 9 of them (9.7%) was 2000-2499 TL; 31 of them (33.3%) was of 2500 TL or more (Table 7).

Table 7.
Descriptive Statistics for Monthly Income

	Frequency	Percent	Valid Percent	Cumulative Percent
1000-1499	41	44,1	44,1	44,1
1500-1999	12	12,9	12,9	57,0
2000-2499	9	9,7	9,7	66,7
2500 TL or more	31	33,3	33,3	100,0
Total	93	100,0	100,0	

Normality test was applied to analyze whether there is a significant difference between monthly income and total scores of levels of anxiety and hopelessness. Trait anxiety scale total score was normal; others were not normally distributed according to monthly income. Levene homogeneity of variance test was used to determine whether the variances of the variables measured in the groups were homogeneous (Table 8).

Table 8.
Levene Variance Homogeneity Test for Monthly Income Groups

		Levene Statistic	df1	df2	Sig.
Trait Anxiety	Based on Mean	1,348	3	89	,264
	Based on Median	1,285	3	89	,284
	Based on Median and with adjusted df	1,285	3	85,164	,285
	Based on trimmed mean	1,365	3	89	,259

Variances are homogeneously distributed according to Table 8 (p>0.05). One-way ANOVA test results are shown in Table 9. Since the variances are homogeneously distributed and there is no equal sample, the Bonferroni method, which is one of the Post Hoc analyzes, was used to determine which income level groups there is a significant difference and also is shown in Table 9.

Table 9.
*One-Way ANOVA Test and Multiple Comparisons (*Bonferroni *Test) for Monthly Income*

		Sum of Squares	df	Mean Square	F	Sig.
Trait Anxiety	Between Groups	1674,198	3	558,066	5,096	,003
	Within Groups	9746,125	89	109,507		
	Total	11420,323	92			
Monthly Income (I)	**Monthly Income (J)**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**		
1500-1999 TL	2500 TL and more	-13,15323*	3,55782	,002		

* The mean difference is significant at the 0.0083 level.

According to Table 9, a significant difference was found between the trait anxiety total score according to the monthly income group. When Bonferroni correction is used (α=0.0083), it has been founded that the level of trait anxiety is higher in the participants with an income level of 2500 TL and more, compared to the participants whose income level is between 1500 TL and 1999 TL.

Since the levels of state anxiety and hopelessness are not normally distributed according to monthly income, Kruskal-Wallis H test, which is a non-parametric test, was applied (Table 10).

Table 10.
Kruskal-Wallis H Test for Monthly Income

	Hopelessness	State Anxiety
Kruskal-Wallis H	9,807	8,276
df	3	3
Asymp. Sig.	,020	,041

According to Table 10, as a result of Kruskal-Wallis H test, a significant difference was found between monthly income and total scores of the state anxiety and hopelessness level (p<0.05).

Mann-Whitney U test was applied to determine which income level groups had a significant difference (Table 11-12).

Table 11.
Ranks According to Monthly Income

	Monthly Income	N	Mean Rank	Sum of Ranks
Hopelessness	1000-1499 TL	41	29,51	1210,00
	1500-1999 TL	12	18,42	221,00
State Anxiety	1000-1499TL	41	29,87	1224,50
	1500-1999 TL	12	17,21	206,50

Table 12.
Mann-Whitney U Test for Monthly Income

1000 – 1499 TL & 1500 – 1999 TL	State Anxiety	Hopelessness
Mann-Whitney U	143,000	128,500
Wilcoxon W	221,000	206,500
Z	-2,193	-2,501
Asymp. Sig. (2-tailed)	,028	,012

According to the results shown in Table 11 and Table 12, a significant difference was found between the 1000 – 1499 TL income group and the 1500 – 1999 TL income group. It was found that the total scores of the hopelessness levels of participants with a monthly income of 1000-1499 TL were higher than those with a monthly income of 1500 - 1999 TL. There is no significant difference between monthly income and total score of the state anxiety.

3.3. Weighted Grade Point Average at the University

The weighted grade point average of 2 of the participants at the university is between 1-1.99, 67 of them 2-2.99, 24 of them 3-4.00 (Table 13). Grade point average of 1-1.99 was not included in the analysis in order to analyze the data set more accurately.

Table 13.
Descriptive Statistics for Weighted Grade Point Average at the University

	Frequency	Percent	Valid Percent	Cumulative Percent
1-1.99	2	2,2	2,2	2,2
2-2.99	67	72,0	72,0	74,2
3-4.00	24	25,8	25,8	100,0
Total	93	100,0	100,0	

Normality test was applied in order to analyze the significant difference between the total scores of anxiety and hopelessness levels according to the weighted grade point average at the university. According to the test result, non-parametric tests were used because the data did not have a normal distribution in each group.

Mann-Whitney U test results are shown in Table 14 and Table 15.

Table 14.
Ranks According to Weighted Grade Point Average

	Point Average	N	Mean Rank	Sum of Ranks
Hopelessness	2.00-2.99	67	50,51	3384,00
	3.00-4.00	24	33,42	802,00
State Anxiety	2.00-2.99	67	49,84	3339,00
	3.00-4.00	24	35,29	847,00

Table 15.
Mann-Whitney U Test for Weighted Grade Point Average at University

	State Anxiety	Hopelessness
Mann-Whitney U	547,000	502,000
Wilcoxon W	847,000	802,000
Z	-2,318	-2,723
Asymp. Sig. (2-tailed)	,020	,006

According to the test results, it was determined that there was a significant difference between the total scores of state anxiety and hopelessness level according to the weighted grade point average at the university. It was found that participants with a weighted grade point average of 2-2.99 had higher total state anxiety and hopelessness levels than participants with a weighted grade point average of 3-4.00 (Table 14-15).

3.4. Advantages for Business Life Outside of University

Participants regarding the advantages they have for business life outside of university; 35 (37.6%) of them had foreign language advantage; 18 (19.4%) of them had abroad experience; 29 (31.2%) of them had internship; 8 (8.6%) of them had vocational courses; 2 (2.2%) had second university advantage. 5 (5.4%) of them have no any advantage. Since there is also the "other" option in these advantages, the analyzes were made separately for each subgroup and when necessary, two or more subgroups were selected and analysis was applied to them. Subgroups are divided into separate subgroups by coding "1" for those with advantage and "0" for those without advantage.

Normality test was applied to analyze the significant difference between the advantages for business life outside of the university and the total scores of trait anxiety, state anxiety and hopelessness level.

The number of those who have a foreign language is 35 and the number of those who do not is 58. As a result of the normality test, the total score of the foreign language and hopelessness level was not normally distributed; foreign language and total scores of the state and trait anxiety scale were found to be normally distributed.

The number of those who have abroad experience is 18, and the number of those who do not is 75. As a result of the normality test, experience abroad and total scores of the state anxiety and hopelessness levels were not normally distributed; total score of the trait anxiety scale was found to be normally distributed.

The number of those who have internship experience is 29, and the number of those who do not have internship experience is 64. As a result of the normality test, the internship experience and total score of the level of hopelessness was not normally distributed; total scores of the state and trait anxiety scale were found to be normally distributed.

The number of those who attended the vocational course was 38, and the number of those who did not attend the vocational course was 55. As a result of the normality test, the vocational course and total scores of the state anxiety scale and hopelessness level were not normally distributed; total score of the trait anxiety scale were found to be normally distributed.

The number of those who have a second university is 2, and the number of those who do not is 91. As a result of the normality test, the second university and total scores of the state anxiety scale and hopelessness level were not normally distributed; total score of the trait anxiety scale was found to be normally distributed.

The number of those who have any advantage for business life is 88, and the number of those who do not is 5. As a result of the normality test, those who did not have any advantage and the total score of the hopelessness level were not normally distributed; total scores of the state and trait anxiety scale were found to be normally distributed.

The independent sample t-test was used to determine the significant difference between total scores of the state and trait anxiety according to foreign language. (Table 16).

Table 16.
Independent Sample t-test for Foreign Language

State Anxiety	F	Sig.	t	df	Two-Sided p
Equal variances assumed	4,970	,028	2,546	88	,013
Equal variances not assumed			35,29	847,00	,023

According to the test result in Table 16, there was a statistically significant difference between foreign language and total score of the state anxiety (p<0.025). Accordingly, the state anxiety level of the group that does not have a foreign language advantage is higher. There was no statistically significant difference between foreign language and total score of the trait anxiety (p>0.025).

Mann-Whitney U test was used to determine the significant difference between foreign language and total score of the hopelessness level. According to the test results, there was no statistically significant difference between foreign language and total score of the hopelessness level.

The independent sample t-test was used to determine the significant difference between abroad experience and total score of the trait anxiety (Table 17).

Table 17.
Independent Sample t-test for Abroad Experience

Trait Anxiety	F	Sig.	t	df	Two-Sided p
Equal variances assumed	,212	,647	2,947	91	,004
Equal variances not assumed			2,794	24,331	,010

According to the test result shown in Table 17, there was a significant difference trait anxiety according to the abroad experience. It has been founded that the trait anxiety levels of those who do not have abroad experience are higher.

The Mann-Whitney U test was used to determine the significant difference between the abroad experience and the total scores of the state anxiety and hopelessness levels (Table 18-19).

Table 18.
Ranks According to Abroad Experience

	Abroad Experience	N	Mean Rank	Sum of Ranks
Hopelessness	No	75	49,77	3732,50
	Yes	18	35,47	638,50
State Anxiety	No	75	51,11	3833,00
	Yes	18	29,89	538,00

Table 19.
Mann-Whitney U Test for Abroad Experience

	State Anxiety	Hopelessness
Mann-Whitney U	367,000	467,500
Wilcoxon W	538,000	638,500
Z	-3,000	-2,020
Asymp. Sig. (2-tailed)	,003	,043

According to the Mann-Whitney U test results, there was a statistically significant difference between the total score of the according to the abroad experience. It has been founded that the state anxiety of those who have no abroad experience are higher than those who have abroad experience. There was no statistically significant difference between the total score of the hopelessness level according to the abroad experience. (Table 18-19).

In order to determine the existence of a significant difference between the internship experience and total scores of the state and trait anxiety, the independent sample t-test was used and there was no statistically significant difference.

Mann-Whitney U test was used to determine the significant between internship experience and total score of the hopelessness level and is shown in Table 20 and Table 21.

Table 20.
Ranks According to Internship Experience

	Internship experience	N	Mean Rank	Sum of Ranks
Hopelessness	No	64	51,29	3282,50
	Yes	29	37,53	1088,50

Table 21.
Mann-Whitney U Test on Internship Experience

	Hopelessness
Mann-Whitney U	653,500
Wilcoxon W	1088,500
Z	-2,279
Asymp. Sig. (2-tailed)	,023

According to the Mann-Whitney U test results, there was a statistically significant difference between the total score of the hopelessness level according to the internship experience. The hopelessness level of those who have no internship experience is higher than those who have internship experience (Table 20-21).

Independent sample t-test was applied to determine the significant difference between vocational course and second university and total score of the trait anxiety level, and Mann-Whitney U test was applied to determine the significant difference between these variables and total scores of the state anxiety and hopelessness levels. As a result of the applied tests, no statistically significant difference was found.

In order to determine the relationship between those who do not have any advantage and the total scores of state and trait anxiety, the independent sample t-test was applied and is shown in Table 22.

Table 22.
Independent Sample t-test for Those Who Do Not Have Any Advantage

State Anxiety	F	Sig.	t	df	Two-Sided p
Equal variances assumed	4,599	,035	-2,171	91	,033
Equal variances not assumed			-5,475	9,509	<,001

According to the test result in Table 22, there was a statistically significant difference between those who do not have any advantage and total score of the state anxiety ($p<0.025$). It was founded that those who did not have the advantage had higher levels of state anxiety. There was no statistically significant difference between those who do not have any advantage and total score of the trait anxiety.

Mann-Whitney U test was applied to determine the existence of a significant difference between those who did not have the advantage and total score of the hopelessness level, and no statistically significant difference was found.

3.5. Work Experience

Out of 93 participants who participated in the study, 45 (48%) of them have work experience; 48 (52%) of them do not have work experience (Table 23).

Table 23.
Descriptive Statistics for Work Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Have work experience	45	48,0	48,0	48,0
No work experience	48	52,0	52,0	100,0
Total	93	100,0	100,0	

The normality test was applied to analyze the significant difference between the work experience variable and the total scores of anxiety and hopelessness levels. According to the results of the normality test, it was founded that the total score of the trait anxiety scale according to work experience was normally distributed, and the others were not normally distributed.

In order to analyze the significant difference between work experience and trait anxiety, the independent sample t-test was applied and there was no statistically significant difference.

Mann-Whitney U test was applied to determine the significant difference between work experience and total scores of the state anxiety and hopelessness (Table 24-25).

Table 24.
Ranks According to Work Experience

	Work Experience	N	Mean Rank	Sum of Ranks
Hopelessness	No	45	40,06	1802,50
	Yes	48	53,51	2568,50
State Anxiety	No	75	45	41,44
	Yes	18	48	52,21

Table 25.
Mann-Whitney U Test on Work Experience

	State Anxiety	Hopelessness
Mann-Whitney U	830,000	767,500
Wilcoxon W	1865,000	1802,500
Z	-1,925	-2,405
Asymp. Sig. (2-tailed)	,054	,016

According to the results in Table 24 and Table 25, there was a statistically significant difference between the total score of the hopelessness level according to the work experience ($p<0.025$). It has been observed that the hopelessness levels of participants without work experience are higher than those with work experience. There was no statistically significant difference between work experience and total score of the state anxiety.

3.6. Impact of the COVID-19 Pandemic on Future Plans

Out of the participants who participated in the study regarding how the COVID-19 pandemic has affected their future plans, 19 (20%) of them did not receive feedback on their job applications (1); 34 of them (37%) said that their job opportunities decreased in parallel with the increase in unemployment rate (2); 27 (29%) of them made it difficult to attend face-to-face

trainings / courses (3) and 13 (14%) of them did not allow them to realize their abroad education / seminar plans related to their business field (4) (Table 26).

Table 26.
Descriptive Statistics for Impact of the COVID-19 Pandemic on Future Plans

	Frequency	Percent	Valid Percent	Cumulative Percent
1	19	20,0	20,0	20,0
2	34	37,0	37,0	57,0
3	27	29,0	29,0	86,0
4	13	14,0	14,0	100,0
Total	93	100,0	100,0	

Normality test was applied to analyze the significant difference between the total scores of anxiety and hopelessness levels according to the effect of the COVID-19 pandemic on future plans. According to the test result, the data were normally distributed.

Levene homogeneity of variance test was used to determine whether the variances of the variables measured in the groups were homogeneous (Table 27).

Table 27.
Levene Variance Homogeneity Test for Impact of the COVID-19 Pandemic on Future Plans

		Levene Statistic	df1	df2	Sig.
Hopelessness	Based on Mean	4,262	3	89	,007
	Based on Median	3,379	3	89	,022
	Based on Median and with adjusted df	3,379	3	76,037	,023
	Based on trimmed mean	4,252	3	89	,007
Trait Anxiety	Based on Mean	,660	3	89	,579
	Based on Median	,506	3	89	,679
	Based on Median and with adjusted df	,506	3	79,828	,679
	Based on trimmed mean	,651	3	89	,584
State Anxiety	Based on Mean	1,161	3	89	,329
	Based on Median	1,028	3	89	,384
	Based on Median and with adjusted df	1,028	3	87,726	,384
	Based on trimmed mean	1,135	3	89	,339

The variances for state and trait anxiety were homogeneously distributed (p>0.05); and level of hopelessness were not homogeneously distributed according to the Table 27 (p<0.05). Therefore, one-way ANOVA test was used for state and trait anxiety level (Table 28), and Welch ANOVA test was used for hopelessness level (Table 29). Since the variances were homogeneously distributed and there was no equal sample, the Bonferroni method from Post Hoc analysis was used to determine which groups had a significant difference, and it is also shown in Table 29.

Table 28.
One-Way ANOVA Test on the Impact of the COVID-19 Pandemic on Future Plans

		Sum of Squares	df	Mean Square	F	Sig.
Trait Anxiety	Between Groups	1562,292	3	520,764	4,702	,004
	Within Groups	9858,031	89	110,764		
	Total	11420,323	92			
State Anxiety	Between Groups	1428,787	3	476,262	8,461	<,001
	Within Groups	5009,944	89	56,292		
	Total	6438,731	92			

According to the results of the one-way ANOVA test, it was concluded that there was a significant difference between the total scores of state anxiety and trait anxiety according to the options for the COVID-19 pandemic to affect future plans (Table 28).

Table 29.
Welch ANOVA Test and Multiple Comparisons (Bonferroni Test) on the Impact of the COVID-19 Pandemic on Future Plans

	Hopelessness	Statistic	df1	df2	Sig.
	Welch	2,791	3	36,814	,054
	COVID Effect (I)	COVID Effect (J)	Mean Difference (I-J)	Std. Error	Sig.
Trait Anxiety	1	4	13,90283*	3,78814	,002
State Anxiety	1	4	12,03644*	2,70052	,000
	2	4	11,02715*	2,44658	,000
	3	4	10,94872*	2,53278	,000

* The mean difference is significant at the 0.0083 level.

As a result of the Welch ANOVA test, it was observed that there was no significant difference between the total score of the hopelessness level according to the options for the COVID-19 pandemic to affect future plans. According to the result, when Bonferroni correction was used (α=0.0083), the total scores of the state and trait anxiety levels of the participants who could not receive feedback on their job applications were higher than those who could not realize their training/seminar plans related to the job field. The total score of state anxiety level of participants whose job opportunities narrowed in parallel with the increase in unemployment rate was higher than those who could not realize their training/seminar plans related to their field of work. It has been observed that the total score of state anxiety levels of participants who have difficulty in attending face-to-face trainings / courses is higher than those who cannot carry out their training / seminar plans related to the field of work (Table 29).

3.7. The Relationship Between State-Trait Anxiety and Hopelessness Levels

Since the levels of state anxiety, trait anxiety and hopelessness were not normally distributed, Sperman's rho correlation test was applied (Table 30).

Table 30.
Sperman's rho Correlation Test

		State Anxiety	Hopelessness	Trait Anxiety
State Anxiety	Correlation Coefficient	1,000	,719**	,781**
	Sig. (2-tailed)	.	**<,001**	**<,001**
	N	93	93	93
Hopelessness	Correlation Coefficient	,719**	1,000	,681**
	Sig. (2-tailed)	**<,001**	.	**<,001**
	N	93	93	93
Trait Anxiety	Correlation Coefficient	,781**	,681**	1,000
	Sig. (2-tailed)	**<,001**	**<,001**	.
	N	93	93	93"

According to the test results, there was a significant and positive relationship between the level of state anxiety and hopelessness. (r = 0.719, p<0.001). A significant and positive relationship was found between trait anxiety and hopelessness level (r = 0.681, p<0.001). And there was a significant and positive relationship between state anxiety and trait anxiety (r = 0.781, p<0.001) (Table 30).

4. RESULTS, DISCUSSION AND RECOMMENDATIONS

Most of the studies to date on anxiety the has analyzed the statistical difference between variables such as gender, age, grade point average, monthly income, work experience and levels of anxiety and hopelessness. In the studies have emphasized the negative effects of anxiety. It was seen that the variables in the studies analyzed were limited. In this study, in addition to the variables of gender, age, marital status, number of siblings, graduated high school type, university studied, monthly income status; the relationship between the reason for choosing statistics department, pre-university settlement, weighted grade point average at the university, parent education status, the job priority, advantages outside the university, the job field, job expectation, work experience, working status, the most appropriate strategy in case of the not employed within one year, self-development in the COVID-19 pandemic variables and the levels of state anxiety, trait anxiety and hopelessness was analyzed. The results of this study will contribute to the creation of a road map for prospective students who will prefer statistics departments in research universities in Ankara or to their career planning by minimizing the anxiety and hopelessness levels of current students.

The purpose of this study is to determine the donrection and severity of anxiety levels of the senior students of the statistics department with the various variables. Considering the first finding of the study, there was no significant difference between state-trait anxiety according to age, it was found that there was a significant difference between the level of hopelessness

according to age. It was seen that the hopelessness levels of individuals in the 24-26 age group were higher than those in the 30 and over age group. Öz Ceviz et al. (2020), in their study to determine the factors affecting students' anxiety levels, found that the level of anxiety was statistically significantly lower in students aged 30 and over, but contrary to our findings regarding the gender factor, the anxiety level of male students was lower than that of female students. In another study, the differences in hopelessness levels of adolescents living in orphanages and living with their families were analyzed according to socio-demographic variables; The effect of the age and mother variable was found to be statistically significant in terms of hopelessness levels in the orphans. In the same study, the hopelessness levels of the groups were compared; It has been stated that the hopelessness levels of the adolescents living in orphanages are higher (Tümkaya 2005). When the literature is examined, the results obtained in our study support the results of the literature.

In the second finding of the study, a significant difference was found between monthly income and trait anxiety. Deveci et al. (2012) analyzed the relationship between health, social and demographic factors and anxiety levels of university students, and reported that factors such as low income and housing problems increase state and trait anxiety. Coşkun and Akkaş (2009) analyzed the relationship between trait anxiety and social support perceptions of mothers with disabled children, and stated that trait anxiety levels decreased with the increase in the education level of the mother and the income level of the family. Similarly, in another study, it was found that there was a statistically significant difference between trait anxiety and monthly income level (Şanlı Kula and Saraç, 2016). These results are in accordance with the results obtained in our study.

In the third finding of the study, a statistically significant difference was found between the weighted grade point average at the university and state anxiety, trait anxiety and level of hopelessness. Saraç (2015) analyzed students' future anxiety and hopelessness levels according to some socio-demographic variables and found a statistically significant difference between weighted grade point average and hopelessness level. This result in the literature supports our study. Contrary to our study, Şanlı Kula and Saraç (2016) did not find a statistically significant difference between weighted grade point average and trait anxiety.

In another finding of the study, the advantages that students have outside the university for business life were analyzed, and a statistically significant differences were found between the foreign language and the state anxiety; the abroad experience and the state anxiety and trait anxiety level; the internship experience and the hopelessness level; the those who do not have any advantage and state anxiety. At the same time, it was observed that the level of hopelessness of individuals without work experience was higher than those with work experience. In the study conducted by the Yazar Aslan (2015) to determine the level of anxiety and hopelessness, there were statistically significant differences between work experience, anxiety level and hopelessness level, while the variable of the expected time to find a job suitable for the education received was found to be significant contrary to our findings. Dursun and Aytaç (2009) analyzed unemployment anxiety among university students and found that those who were worried about finding a job had higher levels of state anxiety and trait anxiety. On the other hand, students who have work experience have found that their state and trait anxiety levels are lower than those who do not have any experience. The results found are in accordance with the results of our study.

In addition, a significant difference was found between the impact of the COVID-19 pandemic on future plans and state anxiety and trait anxiety. The state and trait anxiety levels of individuals who do not receive feedback on their job applications, and those whose job opportunities are narrowed and whose attendance at face-to-face trainings/courses are difficult, are higher than those who cannot realize their training/seminar plans related to their field of work. Individuals who do not plan such as education/seminar do not have state and continuous anxiety about the future; The state anxiety levels of the individuals whose job opportunities were narrowed differed as it was thought that this process was reflected on them temporarily. Anxiety increased even more in individuals who could not receive feedback on their job applications, pushing individuals to pessimism during the time they could not receive feedback. Çiçek et al. (2020) analyzed the effects of COVID-19 on teachers and students and the perspectives of teachers and students on distance education. They found that due to the COVID-19 epidemic, students' aggression levels increased, their social life rituals differed, and they experienced negativities such as depression, fear, extreme stress, restlessness, loss of appetite and sudden anger. At the same time, it has been observed that students have both positive and negative thoughts about distance education. Uluç and Duman (2020) analyzed the levels of uncertainty and fear tolerance of university students in the COVID-19 epidemic, stated that the level of fear of students who lost their relatives due to the COVID-19 epidemic was significantly higher than the students who did not, and found that there was a difference between uncertainty and intolerance to fear in the COVID-19 epidemic. They found a moderate and high level of positive correlational relationship. Kürtüncü and Kurt (2020), analyzed the problems experienced by students during the COVID-19 epidemic, and stated that most of the students' theoretical and practical courses would be insufficient with the distance education method, they did not think of freezing their school but they thought they would extend it. Accordingly, the general results found in this study support the literature results.

In the last general findings, it was concluded that there is a significant and positive relationship between state and trait anxiety and hopelessness level and the level of this relationship is almost equal. Accordingly, the level of hopelessness can be determined for the community in which the study is included, by using either state or trait anxiety scale.

In accordance with the findings obtained from this study, it has been observed that the anxiety and hopelessness levels of senior statistics department students are affected by the effects of COVID-19 on future plans, monthly income, weighted grade point average at the university, age, advantages outside the university, and work experience variables, and are not affected by the gender, marital status, number of siblings, graduated high school type, university studied, reason for choosing statistics department, pre-university settlement, parent education status, job priority, future job prospect, current job prospects, current working status, the idea of finding a suitable job time in accordance with the received education, the most appropriate strategy in case of the not employed within one year, self-development in the COVID-19 pandemic variables. As a result, it is considered that the senior students' anxiety and hopelessness should be reduced, in order to improve themselves better and more effectively providing psychological counseling and guidance services and by increasing training seminars in this direction in the education process, necessary to support them in order to cope with anxiety and hopelessness.

In accordance with the factors affecting the levels of anxiety and hopelessness, the necessity of supporting students throughout their education and improving job opportunities of graduate candidates has arisen. For this reason, it is thought that it is necessary to provide frequent support to university students under the name of career counseling by career centers, to provide career days at universities regularly, to offer free courses that will contribute to their education and personal development in order to keep the anxiety level at a normal level. Parallel to this, students can be made aware of or encouraged to participate for factors that increase students' own anxiety such as grade point average, foreign language, abroad, internship and work experience; raising the grade point average with regular study, developing themselves by participating in foreign language courses, contributing to them by turning to abroad programs, gain experience by searching for internship or job opportunities. In addition, students may be asked to do a detailed research on these factors. Simultaneously, it can be requested to develop thoughts about the pros and cons of the problem area that causes anxiety and the causes of anxiety.

In future studies; using different variables by developing questionnaires containing state anxiety, trait anxiety and hopelessness scales specific to the units on the basis of university or the whole region; It is recommended to compare anxiety levels before and after the pandemic.

Research and Publication Ethics Statement

Contribution Rates of Authors to the Article

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Statement of Interest

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