Impacts of Stress Coping Approaches on Covid-19 Anxiety:
A Sample of Turkish Medical School Students

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Abstract

We aimed to assess Covid-19 anxiety among Turkish medical school students. More specifically, we examined the association between the participants' age, gender, grades, stress coping approaches and Covid-19 anxiety using a quantitative design. The participants were 875 (493 female and 480 male students) medical school students between 19 and 26 years old. The participants completed Ways of Coping Inventory and Coronavirus Anxiety Scale. It was observed that university students in the schools of medicine used stress coping approaches such as searching for social support and self-confident. ANOVA analyses revealed that female medical school students had higher mean scores for the search for social support, optimistic, submissive, and helpless approaches, while male medical school students had higher scores for self-confident approach. Post hoc analysis indicated that the first-grade medical school students used self-confident stress coping approach more often than the higher-grade medical school students. We established that 21 years and older medical school students used submissive stress coping approach more often than younger students. Hierarchical regression revealed that gender female, submissive and helpless approaches explained 11% of the variance in Coronavirus anxiety.

Keywords: stress coping approaches, Corona-virus anxiety, medical students, gender, age

1. Introduction

The existing Covid-19 pandemic has led various psychological problems. Many university students have experienced vagueness, fear, distress, stress and anxiety (Akyildiz & Durna, 2021). They had difficulty in coping with the Covid-19 anxiety as well as other mental health problems (Peteet, 2020). Globally, several researchers have searched the impacts of Covid-19 on people. Some of the researchers have focused on Covid-19 anxiety in Turkish university context. They found that gender was a significant predictor of Covid-19 anxiety (Erkasap et al., 2020); Covid-19 anxiety negatively affected the perception about health profession (Özdede & Sahin, 2020); and Covid-19 anxiety and stress were positively correlated (Satici et al., 2020).

Findings indicated that Covid-19 anxiety was associated with general anxiety. McKay his colleagues (2020) suggested that Covid-19 anxiety was significantly related to increased sensitivity. The other studies showed that Covid-19 epidemic was linked with psychological problems such as depression, stress, and severe anxiety (Li et al., 2020). According to ADAA (2020, the Anxiety and Depression Association of America), the present epidemic of the coronavirus triggered level of anxiety among people.

Earlier studies indicated that the frequency of anxiety disorders among medical school students was quite high (Drbye et al., 2014). A new study performed in China among undergraduate students at medical schools revealed that medicine students experienced severe anxiety (Cao et al., 2020). In Europe, Machado et al. (2018) uncovered that about 30% of medicine students experienced anxiety and they had high level of stress during their medical education. We can conclude that the Covid-19 epidemic is expected to rise anxiety levels within the medical students who are regarded in psychologically susceptible groups. However, studies have not investigated the effect of the Covid-19 pandemic on the medical students' psychological health (Saddik et al., 2020). Accordingly, new studies regarding the association between the effects of Covid-19 and mental health problems among undergraduate medical students are required.

The studies established that age (Akyildiz & Durna, 2020; Lee et al., 2020; Nikčević et al., 2020; Shevlin et al., 2020; Šrol et al., 2020; Sun et al., 2020), gender (Akyildiz & Durna, 2020; Hyland et al., 2020; Nikčević et al., 2020; Saddik et al., 2020; Shevlin et al., 2020; Šrol et al., 2020; Sun et al., 2020) grades (Sun et al., 2020) and stress coping approaches (Akyildiz & Durna, 2020; Cui et al., 2021) were associated with Covid-19 Anxiety.

The scholars (Ge et al., 2020; Hyland et al., 2020; Lee at al., 2020; Shevlin et al., 2020; Šrol et al., 2020; Sun et al., 2020) revealed the gender was significantly associated with Covid-19 anxiety, and females had higher level of anxiety at the times of Covid-19 pandemic. However, Hu et al. (2020), Nikčevića and Spada (2020) and Sine (2020) discovered that gender was not a significant predictor of Covid-19 anxiety. Similarly, Akyildiz and Durna (2021) established a positive significant association between Covid-19 anxiety scores and female gender. Also, Günaydın (2021) discovered that females had higher Covid-19 fear scores compared to the male participants. Other studies (Hu et al., 2020; Lee at al., 2020; Nikčevića & Spada, 2020; Shevlin et al., 2020; Šrol et al., 2020) found that age was a significant predictor of the Covid-19 anxiety. Older age groups were associated with higher level of Covid-19 anxiety level. Hyland and his colleagues (2020) established older people experienced the higher level of Covid-19 anxiety compared to the younger age groups. However, studies in Turkish context (Akyildiz & Durna, 2021) unearthed that the younger age group had higher anxiety scores especially among people between 29 and 34 years old because they were more resilient, and risk-averse people. The recent research (Ge et al., 2020; Sun et al., 2020) established that university students' grades (freshmen, junior, sophomore, senior) significantly differed in terms of Covid-19 anxiety. Overall, the findings suggest that the associations between age, gender and grades and Covid-19 anxiety varies. Thus, further research is needed to clarify this relationship.

Studies in the current literature in Turkish context (Akyildiz & Durna, 2021; Biçer et al., 2020; Erkasap et al., 2020; Satici et al., 2020) demonstrated that stress coping approaches significantly estimated Covid-19 related anxiety. Therefore, Covid-19 anxiety may increase especially when people lack or do not utilize efficient stress coping strategies (Manning et al., 2020; Zvolensky et al., 2002). Increased level of anxiety may toughen stress managing which may lead to higher anxiety in return. The findings showed that positive coping styles were associated with lower levels of Covid-19 anxiety (Cui et al., 2021). Overall, stress coping strategies are substantial in fighting with Covid-19 anxiety and other related psychological problems.

The studies above considered the association between demographical variables and stress coping approaches. However, additional research may well support the present results about the associations between the demographical variables, the stress coping approaches, and anxiety. Subsequently, the current study has two main aims: first one is to explore the Covid-19 anxiety among Turkish medical school students concerning their age, gender, grades, and stress coping approaches, and the second aim is to examine whether these variables will significantly predict Covid-19 anxiety or not.

This study will present new and significant findings to enhance the understanding of how medical school students cope with anxiety during the times of Covid-19 pandemic. This study highlights the importance of healthy and positive coping approaches in dealing with anxiety regarding Covid-19. This study also provides important information about the effects of demographical variables such as age, gender and grade on stress coping and Covid-19 anxiety. Overall, this study is one of the first studies examining the Covid-19 anxiety in context of Turkish medicine schools.

2. Literature Review & Theoretical Framework

2.1 Coping

Stress has short-term and long-term effects. Short-term effects include physiological (increase in muscle tension, increase in blood pressure), emotional (anxiety, resentment) and mental (forgetfulness, inability to concentrate) disturbances. Long-term effects include chronic diseases (headache, hypertension), chronic anxiety and depression (phobias, mental illnesses), mental and memory defects (obsessive thoughts, sleep disorders) (Baltaş & Baltaş, 2008).

Stress can be experienced at almost any stage of life and at any age. Especially university students are exposed to stressful life because they come from very different socio-cultural environments and are at the end of adolescence, which is considered a turbulent developmental period. On the one hand, university students strive to find their own identity, reconcile their conflicting values, gain independence, and develop behaviours appropriate to their sexual identity. On the other hand, they try to adapt to the new educational environment and become competent in the chosen field (Doğan, 2008). Especially in our country, medical school students have a difficult education life.

Folkman and Lazarus (1980) defined coping with stress as concrete actions or emotional efforts to manage, control, tolerate, reduce or minimize external and internal expectations and conflicts that are challenging or beyond one's

strength. It is possible to manage stress healthily upon efficient usage of coping approaches (Kreitner & Kinicki, 1989). According to Watson and his colleagues (2008), coping approaches are the mental and physical efforts revealed by a person against a state that can give a way to manage stressful situation, accept the situation, and moderate or diminish the consequences of the state.

A person who faces to a stressful situation has tendency to utilize passive or active coping approaches interchangeably. The active stress coping approaches signify the practices such as reasoning, accepting, making plan, and reducing the stress causes, while the passive stress coping approaches mean evading from a stress situation by means of processes such as refutation, behavioral detachment, alcohol or drug abuse, or sarcasm (Carver, 1997).

Folkman (1984) explored the stress coping course depending on the problem and emotion focused five coping approaches including self-confident, optimistic, helpless, submissive, and seeking of social support approaches.

Sahin and Durak (1995) assessed these five coping approaches in Turkish context. The self-confident approach implies active and mindful attempt towards the coping of the stressful situation; the optimistic approach implies evaluation of the stressful situation with a positive perception, broad-mindedness, and rationality; the helpless approach indicates the lack of confidence and failure to cope with stressful situation; the submissive approach indicates pursuing the resolution from mystical powers and having pessimist approach due to feeling of weakness; and seeking of social support indicates looking for help from the people from the shared setting to cope with stressful situation.

2.2 Covid-19 Anxiety

Anxiety refers to the person's excessive arousal about not being able to cope with a problem (McKenna, 1993). COVID-19 has also triggered a wide variety of psychological problems such as anxiety and depression. McKay et al. (in press) revealed that Covid-19 was associated with anxiety sensitivity. Although there are many studies on the global epidemic, the number of studies on anxiety caused by COVID-19 is limited. There is cumulative distress about handling with the consequential anxiety, besides its longstanding collective and individual effects (Peteet, 2020).

The recent research shows that coronavirus associated anxiety look like situational anxiety, as it can be connected to more austere health consequences (Lee, 2020). It is suggested that the level of anxiety would increase because of the psychological incumbrance due to Covid-19 linked fear (Ahorsu et al., 2020), which might go well after the pandemic. Some people can have difficulty in returning to complete social engagement owing to negative methods of stress coping that will intensify Covid-19 anxiety (Lee, 2020). Considering this view, a recent study indicated that anxiety levels following the pandemic process could endure noticeably higher (Allington et al., 2020). The Covid-19 anxiety can accordingly be defined as avoidance, ensuring, distressing and risk checking. The Covid-19 anxiety should consequently be theoretically and psychometrically different from Covid-19 risk, fear, and overall anxiety (Limcaoco et al., 2020; Taylor et al., 2020).

Because of Covid-19, psychological health problems involving anxiety, stress, and depression have been prevailing across the globe (Sun et al., 2020). Various studies have explored the pervasiveness of psychological matter in various populations throughout the Covid-19 pandemic. For instance, in Italy, it was discovered that the pandemic led to the post-traumatic disorders and stress among health care staffs (Rossi et al., 2020). Also, in China, the pandemic was found to cause anxiety, stress and depressive symptoms (Wang et al., 2020). High frequencies of anxiety, stress and depression as well as other adverse feelings were revealed in England (The Academy of Medical Sciences, 2020). Also, Covid-19 studies that were carried in Turkey stated great level of anxiety, stress and burnout (Yildirim et al., 2020; Tanhan et al., 2020).

2.3 Problem Definition

Considering the information presented above, we can conclude that the Covid-19 pandemic unquestionably builds a universal atmosphere of uncertainty, fear, and anxiety (Ahorsu et al., 2020). The notion Covid-19 should be further psychologically examined through well-designed investigation in order to better understand its negative influences on people' mental health. People employ various individual approaches to manage these challenging conditions to safeguard their mental health. Especially, medical workers have been facing various risks considering pandemic because they usually work in potentially deadly environments. However, no researchers have examined the effect of Covid-19 among medicine school students. Per se, this study inspected the impacts of copping approaches on Covid-19 anxiety in medicine school contexts.

2.4 Hypotheses

Considering the literature presented above, following hypotheses are provided. The hypotheses evaluate the associations between age, gender, students' grade levels and stress coping approaches, and the impact of gender, grade, age, and stress coping approaches on Coronavirus anxiety. The hypotheses considering the associations between variables are given below in detail:

H^1 There is a significant association between gender and stress coping approaches.

H^2 There is a significant association between grades and stress coping approaches.

H^3 There is a significant association between age and stress coping approaches.

H^4 Gender, grades and age have significant impacts on Coronavirus anxiety.

H^5 Gender, grades, age, and stress coping approaches together have significant impacts on Coronavirus anxiety.

3. Methodology

3.1 Participants and Procedure

We utilized a convenience sampling technique to collect the research data, which facilitate gathering data from participants sooner with a lower cost (Creswell, 2012). Particularly, we collected data by means of convenience sampling method regarding the pandemic circumstances between June and July in 2021. The participants were indiscriminately chosen to complete online study forms, because of COVID-19 restrictions. The research participants were medicine school students from various universities in Turkey. 1044 medical school students completed survey form; however, 171 outliers were excluded from the study. Finally, we conducted the analyses on 873 university students (493 female and 380 male). The participants' ages ranged from 19 to 26 (Table 1). The volunteer students completed the demographic survey form and research instruments anonymously online. However, the respondents weren't offered with any incentives. The participants and school administrations were informed about the purposes of the current study before they filled out the forms.

Table 1. Demographic variables

Variables	Groups	N	Frequency	%
Gender	Female	873	493	56.5
	Male		380	43.5
Grade	1st Grade	872	373	42.7
	2nd Grade		334	38.3
	3rd Grade		165	18.9
Age	19 years old	873	223	25.5
	20 years old		190	21.8
	21 years old		170	19.5
	22 and older		290	33.2

3.2 Ethics Statement

The overall research and instruments were assessed by the board of ethics at the Konya Food and Agriculture University and indicated that they were in line with commonly accepted ethical standards in line with the provisions of the Declaration of Helsinki. The consent was taken from participants and school administrations. Accordingly, we notified participants about the study purpose. They were ensured that the data would be kept anonymous and be used only for study purposes.

3.3 Variables and Research Instruments

In the current study, we used age, gender, and grades as independent variables, while we used stress coping approaches as the dependent variable of the study to achieve the first aim of the research. Then, we employed gender, grades, age and stress coping approaches as predictor variables of Coronavirus anxiety to achieve the second research aim.

Demographics questionnaire. The authors developed the demographic questionnaire, regarding variables such as gender (female and male), grades (1st grade, 2nd grade, 3rd grade, 4th grade, 5th grade and 6th grade), and age.

Ways of Coping Inventory (WCI). Folkman and Lazarus (1980) built WCI and Sahin and Durak (1995) adapted it to Turkish (Appendices A and B). The WCI contains 30 four-point Likert items, ranging from 0 (not suitable at all) to 3 (completely suitable). The WCI has five sub-scales named "self-confident approach", "optimistic approach", "helpless approach", "submissive approach" and "search for social support approach". Scores are computed individually for every sub-category. Basically, WCI differentiates between efficient approaches (self-confident, optimistic and search for social support) and inefficient approaches (submissive and helpless). Higher scores on each sub-scale show a higher tendency to use the relevant coping approach. The reliability of the Turkish WCI revealed the subsequent Cronbach's alpha values: 0.80 for self-confident; 0.68 for optimistic; 0.73 for helpless; 0.70 for submissive and 0.47 for search for social support (Sahin & Durak, 1995). In the present study, Cronbach's alpha coefficient values for each subscale were 0.85 for self-confident; 0.73 for optimistic; 0.72 for helpless; 0.55 for submissive and 0.72 for search for social support.

Coronavirus Anxiety Scale (CAS): Lee (2020) developed CAS to determine the participants' Covid-19 anxiety levels and Bicer et al. (2020) adapted it to Turkish (Appendices C and D). CAS is a Likert-type scale with 5 items, which are scored between 0 (never) and 4 (almost every day in the last two weeks). Bicer and his colleagues (2020) discovered the Cronbach Alpha reliability coefficient of the scale as 0.83. We established that Cronbach Alpha value was 0.90 in the present study.

3.4 Data Analysis

Before we conducted the data analysis with SPSS 22.0 (IBM-SPSS Inc., Chicago, IL, USA) software, the assumptions of normality were tested. To examine the normality assumption, we computed the values of skewness and kurtosis, and found that they were in an adequate range of normal distribution. The numeric variables were changed to the average z-scores to identify univariate outliers, and those more than +3 and less than −3 were omitted. Additionally, we computed Mahalanobis D2 values to uncover multivariate outliers. Consequently, we omitted 171 outliers from the study data. Furthermore, we examined Pearson correlation coefficients, the variance inflation factor (VIF) and tolerance values to check the multicollinearity assumption. The VIF values should be less than 4, and tolerance should be higher than 0.20 (Tabachnick & Fidell, 2007). The outcomes of the study indicated that values of VIF were distributed between 1.044 and 1.366 and that values of tolerance were between 0.738 to 0.957. Thus, it was seen that the multicollinearity assumptions were not violated. Moreover, we analysed the homoscedasticity and linearity assumptions by means of a standardized residual scatterplot and found that it was rectangular, and nearly all the scores were in the centre. We can, accordingly, claim that the homoscedasticity and linearity assumptions were met in the current study.

We utilized descriptive statistics of means, frequencies, and SD and ANOVA (one way analysis of variance) to explore the data and detect whether the stress coping approaches were different in terms of gender, grades, and age, and applied Scheffe post hoc tests for further comparisons. Before we conducted the regression analysis, gender and grades were dummy coded. We coded the females as "1" and males as "0". In terms of grades, we coded the first grade as 1 and the second and third grades as 0, and the second grade as 1 and the first and third grades as 0. Finally, we coded the third grade as 1 while the first and second grades as 0. Then, we performed hierarchical multiple regression analyses to determine the effects of the variables on the Coronavirus anxiety. Accordingly, in the first step, we added the gender, grades, and age to the model, and in the second step we added stress coping approaches into the model.

4. Results

Descriptive statistics for stress coping approaches and Coronavirus anxiety are presented in Table 2. It was observed that university students in the schools of medicine used stress coping approaches such as searching for social support and self-confident. Medical school students' mean Coronavirus score was 2.49. We performed one-way ANOVA to assess Coronavirus anxiety mean scores from the points of students' gender, grades, and ages. The results of the analysis are displayed in Table 3.

Table 2. Descriptive Statistics (N=873)

Variables	Range	Mean	SD	Skewness	Kurtosis
Optimistic Approach	1-2.4	1.42	.009	.585	.156
Submissive Approach	0.5-2.5	1.29	.012	.070	-.228
Search for Social Support	0.75-3	2.09	.020	-.462	-.849
Helpless Approach	0.5-2.88	1.49	.016	.255	-.135
Self-confident Approach	1.14-3	2.04	.016	.207	-.301
Coronavirus Anxiety	0-11	2.49	.099	1.840	1.965

ANOVA analyses revealed that female medical school students had higher mean scores for coping approaches including the search for social support, optimistic, submissive, and helpless approaches, while male medical school students had higher scores for self-confident approach. Furthermore, post hoc analysis indicated that the first-grade medical school students used self-confident stress coping approach more often than the higher-grade medical school students. In terms of students' ages, we established that 21 years and older medical school students used submissive stress coping approach more often than younger students. Besides, we discovered that students who were 20 years or older used helpless stress coping approach compared to younger ones.

Table 3. ANOVA test of stress coping approaches in demographic factors

Stress Coping Approaches		Search for Social Support		Optimistic		Submissive		Helpless		Self-confident		
Variables	Groups	M - SD		M - SD	F	M - SD	F	M - SD	F	M - SD	F	Post Hoc Results
Gender	Female	2.13 -.58	52.83***	1.44-.57	7.25*	1.32-.36	7.82**	1.58-.47	37.3***	2.01-.38	8.31	SSS= F>M; O F>M
	Male	2.03 -.59		1.39-.58		1.25-.38		1.38-.45		2.08-.37		S= F>M; H=F>M
												SC=M>F
Grades	ᵃ1ˢᵗ Grade	2.12 -.57	1.45	1.41-.26	.15	1.26 - .37	2.07	1.45-.47	1.91	2.10-.37	7.78***	SC= a>b; a>c
	ᵇ2ⁿᵈ Grade	2.05 -.59		1.41-.26		1.30 - .37		1.52-.48		2.00-.38		
	ᶜ3ʳᵈ Grade	2.07 -.58		1.43-.27		1.33 - .35		1.51-.46		1.99-.36		
Age	ᵃ19 younger	2.14-2.68	2.29	1.42-.26	.29	1.24-.36	2.48****	1.41-.47	3.28**	2.12-.38	4.47**	S =d>a; d>b; c>a; c>b
	ᵇ20 yrs old	2.13-3.09		1.43-.26		1.29-.39		1.52-.44		2.04-.37		H= d>a; c>a; b>a
	ᶜ21 yrs old	2.09-2.92		1.41-.27		1.32-.35		1.54-.50		2.00-.37		SC=a>b; a>c; a>d;
	ᵈ22 older	2.02-2.94		1.41.26		1.32-.36		1.50-.47		2.01-37.		b>c; b>d

***P<0.001, **P<0.01, *P<0.05, ****P<0.06; SSS= Search for Social Support; O=Optimistic; S=Submissive; H=Helpless; SC=Self-Confident

Bivariate correlation analysis (Table 4) showed that there were positive significant associations between students' grades, ages, and helpless stress coping approach and Coronavirus anxiety while there were significant negative associations between optimistic and self-confident stress coping approaches, and Coronavirus anxiety. However, there were no significant associations between submissive stress coping approach and Coronavirus anxiety.

Table 4. Correlations among demographic variables, stress coping approached and Coronavirus anxiety

	1	2	3	4	5	6	7	8
1. Grade	-							
2. Age	.722***	-						
3. Search for Social Support Approach	-.043	-.083*	-					
4. Optimistic Approach	.015	-.011	-.058	-				
5. Submissive Approach	.069*	.087**	.038	.050	-			
6. Helpless Approach	.053	.072**	.070*	-.183***	.158***	-		
7. Self-confident Approach	-.120***	-.108***	.143***	-.163***	.051	-.452***	-	
8. Coronavirus Anxiety	.058*	.060*	.056*	-.063****	-.028	.252***	-.154***	-

***P<0.001, **P<0.01, *P<0.05, ****P<0.06

We performed two different hierarchical multiple regression analyses (Table 5). In the first step, the analyses showed that gender, grades and age predicted 6% of the variance in Coronavirus anxiety. The beta values revealed that only female gender was a significant predictor of Coronavirus anxiety. In the second step, stress coping approaches were added as the predictors of Coronavirus anxiety. And submissive and helpless stress coping approaches explained 5% of the variance in Coronavirus anxiety and that the variables altogether (gender female, submissive and helpless approaches) except for grades, age, search for social support, optimistic and self-confident approaches, explained 11% of the variance in Coronavirus anxiety.

Table 5. Hierarchical regression for demographic variables, stress coping approaches, Coronavirus anxiety

Variable	Step 1					Step 2				
	B	SE	β	t	p	B	SE	β	t	p
Gender										
Female vs Male	1.4	0.19	0.24	7.29	0.001	1.19	0.20	0.20	6.09	0.001
Grades										
1st vs 2nd and 3rd	2.87	2.83	0.49	1.01	0.312	1.77	2.78	0.30	0.64	0.525
2nd vs 1st and 3rd	3.03	2.84	0.51	1.07	0.287	1.87	2.80	0.31	0.67	0.504
3rd vs 1st and 2nd	3.04	2.86	0.41	1.07	0.287	1.93	2.81	0.26	0.69	0.493
Age	0.09	0.12	0.04	0.72	0.470	0.08	0.12	0.03	0.65	0.514
Search for Social Support						0.01	0.16	0.01	0.04	0.966
Optimistic Approach						0.07	0.37	0.02	0.20	0.842
Submissive Approach						-0.65	0.26	-0.08	-2.49	0.013
Helpless Approach						1.28	0.23	0.21	5.51	0.000
Self-confident Approach						-0.22	0.29	-0.03	-0.75	0.456
R^2	0.062					0.111				
Adj. R^2	0.057					0.101				
ΔR^2	0.062					0.049				
SE	2.827					2.760				
F (df_1-df_2)	11.473 (5-867)[*]					10.772 (5-862)[*]				

*P<0.001, SE: Standard Error

5. Discussion

In the current study, we assessed the medical school students' Covid-19 anxiety levels according to their age, gender, grades, and stress coping approaches, and further examined whether these variables significantly explained Covid-19 anxiety. Before the analysis was conducted, the values of skewness and kurtosis were computed, and established that they were in an acceptable range of normal distribution. However, skewness values for the Coronavirus anxiety were a bit higher comparatively, which could be due to inter individual differences in the sample. It is noted that medicine school students utilized search for social support and self-confident approaches more often. Ozsaker (2013) also found that university students used self-confident approach to cope with stress. Data analyses showed that female medical school students used the search for social support, optimistic, submissive, and helpless approaches, while male students tended to use self-confident approach more frequently. Yılmaz et al. (2015) also found that females had higher helpless coping approach scores than males comparatively. Also, Yamaç (2009) suggested that females used more helpless and male students more optimistic coping approach. In addition, it was revealed that females used social support-seeking and help-seeking coping approaches more often than males, and the reason for this was considered that they had higher cognitive distortions than boys. These can be because males are usually freer compared to females, that is, they have more cultural and social autonomy than females. While males are encouraged more, females are criticized more often. In addition, because of customary gender roles, women experience helplessness more than men in Turkish culture (Ozdemir et al., 2008).

The data analyses further revealed that fresh younger medical school students utilized self-confident stress coping approach in the times of Covid-19 pandemic more frequently than the higher-grade medical school students. On the other hand, we established that older medical school students employed helpless and submissive stress coping approaches more than younger medical school students. As opposed to the present findings, Pagan et al. (2013) found that younger university students used search for social support coping approach more than older medicine students. Besides, Ozsaker (2013) discovered that older university students used self-confident approach to cope with stress. This can be because the medical training is quite compelling and stressful for higher grade students in medical schools in Turkey. Further, the data analyses showed that higher grade medicine students experienced higher Covid-19 anxiety and stress level in line with Moutinho et al. (2017), due to hospital visits and clinical rotations where they faced Covid-19 pandemic related deaths (Saddik et al., 2020). This could make higher grade

students to be more helpless and submissive. Other studies (Halperin et al., 2021) also indicated that medical students exhibited higher frequency of mental health problems than the overall population, involving generalized anxiety. Further, they acknowledged sources of stressors and anxiety for medical students as academic load, struggle with peers, conflicts between academic and work balance, demands, and economic problems. In addition, higher grade university students deal with the Covid-19 pandemic treatment, and thus they experience higher level of anxiety and stress.

The hierarchical regression analyses demonstrated that gender was a significant predictor of Coronavirus anxiety. The conclusions in this study were sustained by the recent literature. Lee et al. (2020) determined that female gender was significant in explaining coronavirus anxiety. In addition, other studies (Ge et al., 2020; Hyland et al., 2020; Shevlin et al., 2020; Sine, 2020; Šrol et al., 2020; Sun et al., 2020) revealed that females were somewhat more anxious about the Covid-19 pandemic than males. In the current literature, women's anxiety levels were informed to be higher in another study (Al-Rabiaah et al., 2020) in which anxiety levels of the participants were assessed through the Covid-19 epidemic. However, other studies (Hu et al., 2020; Nikčević & Spada, 2020) found no significant association between gender and Covid-19 anxiety. The association between gender and anxiety is inconsistent in the current literature, but rendering to the present research data we achieved, it was established that women had higher level of anxiety. Thus, women can be influenced by more Covid-19 epidemic than men can. The differences can be owing to cultural differences and demographical characteristics. In individualistic cultures, females are encouraged compared to collectivist cultures. Since Turkey is mostly a collectivist culture, it is possible to assume that women are not much encouraged to behave as freely as men. Consequently, women in Turkish context may tend to choose negative and helpless coping approaches.

Additionally, analyses noted that submissive and helpless stress coping approaches were significant predictors of Coronavirus anxiety. Likewise, Cui et al. (2021) discovered that negative coping approaches were significantly associated with Covid-19 anxiety. Hamarta (2015) and Acaroğlu et al. (2008) also suggested that there was positive association between submissive and helpless approaches and anxiety. Another study (Yıldırım et al., 2021) indicated that positive coping had improving effect on the Covid-19 anxiety. These outcomes also revealed that medicine schools' students had difficulty in coping with coronavirus related anxiety. Additionally, these findings help clarifying the mechanism under COVID-19 anxiety.

6. Limitations, Suggestions and Implications

We examined the association between age, gender, grades, stress coping approaches and Coronavirus anxiety by means of using a cross-sectional research design, which presented data regarding the existing situation of the research population. Nevertheless, cross-sectional survey does not let researchers find out a cause–effect relations. Consequently, future researchers can use a longitudinal research design to assess cause–effect relationships between demographics, coping approaches and Coronavirus anxiety.

Also, the current study includes other limitations. First, the sample of the study was limited to medical school students in Turkey. Therefore, the sample may limit the generalizability of the results. Forthcoming studies may utilize a sampling from a broader population, gathering data from various schools and age groups. Second, this research focused on the associations between demographic variables such age, grades and gender, stress coping approaches and coronavirus anxiety. Nevertheless, future studies can focus on the association between coronavirus anxiety and other variables such as academic motivation, life satisfaction or psychological well-being, self-efficacy, social support including other types of anxiety. Thirdly, we used self-reported measures to collect the research data. Collecting information through a self-report has limitations. The participants may have been biased when they reported on their own perspectives and experiences. They may have been either consciously or unconsciously affected by social acceptance. In other words, they may have likely reported perspective and experiences that were thought to be acceptable in public. Fourthly, the Cronbach Alpha value for submissive coping was .55, which may have negative impact on the reliability of the relevant measure. Lastly, this survey had a quantitative design, and new studies could utilize a qualitative design together with quantitative design. Using mixed method approach, future researchers can probably evade the limitations of using only one approach. Additionally, there will be chance of method triangulation to test alternative explanations of the research data when a mixed is used.

The findings suggest that medical school students experience Covid-19 anxiety during the pandemic compared other school students. This study is important to understand the Covid-19 anxiety medical school students' experiences and these students' coping approaches to cope with the pandemic related anxiety. Thus, particular suggestions can be made accordingly. For example, these outcomes can help in developing preventative approaches and early determination of medical students with psychological problems thorough their medical

training. More specifically, psychological interventions such as cognitive behavior therapy, systemic therapy or mindfulness-based therapy can be used to support medical students to help them combat with their Covid-19 anxiety. Finally, medical school managements can provide opportunities for these students to get help and contact the mentors, counsellors or psychologists allocated by the University to satisfy their mental requirements.

7. Conclusion

Despite its limitations, the current study makes contribution to the present literature both by assessing the association between medical school students' age, gender, grades, and stress coping approaches, and by investigating the association between demographic variables, stress coping approaches, and coronavirus anxiety. Also, the study is crucial as it utilizes the recent studies from various communities and cultures to discuss its outcomes. It is noted that medicine school students utilized search for social support and self-confident approaches more often. The data analyses further revealed that fresh younger medical school students utilized self-confident stress coping approach in the times of Covid-19 pandemic more frequently than the higher-grade medical school students. On the other hand, we established that older medical school students employed helpless and submissive stress coping approaches more than younger medical school students. In addition, higher grade university students deal with the Covid-19 pandemic treatment, and thus they experience higher level of anxiety and stress. The hierarchical regression analyses demonstrated that gender was a significant predictor of Coronavirus anxiety. The association between gender and anxiety is inconsistent in the current literature, but rendering to the present research data we achieved, it was established that women had higher level of anxiety. Additionally, analyses noted that submissive and helpless stress coping approaches were significant predictors of Coronavirus anxiety. These outcomes also reveal that medicine schools' students have difficulty in coping with coronavirus related anxiety. Additionally, these findings help clarifying the mechanism under COVID-19 anxiety.

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Appendix A

Ways of Coping Inventory (WCI) (Turkish: Stresle Başa Çıkma Yolları Envanteri)

Sizi Ne Kadar Tanımlıyor / Size Ne Kadar Uygun.				
BİR SIKINTIM OLDUĞUNDA	Hiç Uygun Değil	Uygun Değil	Uygun	Tamamen Uygun
1 Kimsenin bilmesini istemem				
2 İyimser olmaya çalışırım				
3 Bir mucize olmasını beklerim				
4 Olayı/olayları büyütmeyip üzerinde durmamaya çalışırım				
5 Başa gelen çekilir diye düşünürüm				
6 Sakin kafayla düşünmeye ve öfkelenmemeye çalışırım				
7 Kendimi kapana sıkışmış gibi hissederim				
8 Olayın değerlendirmesini yaparak en iyi kararı vermeye çalışırım.				
9 İçinde bulunduğum kötü durumu kimsenin bilmesini istemem				
10 Ne olursa olsun direnme ve mücadele etme gücünü kendimde hissederim.				
11 Olanları kafama takıp sürekli düşünmekten kendimi alamam				
12 Kendime karşı hoşgörülü olmaya çalışırım				
13 İş olacağına varır diye düşünürüm				
14 Mutlaka bir yol bulabileceğine inanır, bu yolda uğraşırım				
15 Problemin çözümü için adak adarım				
16 Her şeye yeniden başlayacak gücü bulurum				
17 Elimden hiçbir şeyin gelmeyeceğine inanırım				
18 Olaylardan olumlu bir şey çıkarmaya çalışırım				
19 Her şeyin istediğim gibi olmayacağına inanırım				
20 Problemi adım adım çözmeye çalışırım				
21 Mücadeleden vazgeçerim				
22 Sorunun benden kaynaklandığını düşünürüm				
23 Hakkımı savunabileceğine inanırım				
24 Olanlar karşısından kaderim buymuş derim				
25 Keşke daha güçlü bir insan olsaydım diye düşünürdüm				
26 Bir kişi olarak iyi yönde değiştiğimi ve olgunlaştığımı düşünürün				
27 Benim suçum ne diye düşünürüm				
28 Hep benim yüzümden oldu diye düşünürüm				
29 Sorunun gerçek nedenini anlayabilmek için başkalarına danışırım				
30 Bana destek olabilecek kişilerin varlığını bilmek beni rahatlatır				

Appendix B

Ways of Coping Inventory (WCI)

	How Much Does It Describe You / How Suitable for You				
	When I have a stress,	Not suitable at all	Not Suitable	Suitable	Completely suitable
1	I don't want anyone to know.				
2	I try to be optimistic.				
3	I'm waiting for a miracle to happen.				
4	I try not to magnify the event/events and not to dwell on it.				
5	What can't be cured must be endured.				
6	I try to think calmly and not get angry.				
7	I feel like I'm trapped.				
8	I try to make the best decision by evaluating the situation.				
9	I don't want anyone to know about my plight.				
10	I feel the strength to resist and fight no matter what happens.				
11	I can't help thinking about what happened.				
12	I try to be tolerant of myself.				
13	Things will happen while they can.				
14	I believe there's a way, I'll deal with it.				
15	I make a vow to solve the problem.				
16	I find the strength to start all over again.				
17	I believe that nothing will come my way.				
18	I try to make something positive out of events.				
19	I believe that everything will not be the way I want.				
20	I try to solve the problem step by step.				
21	I give up the struggle.				
22	I think the problem is with me.				
23	I believe I can defend my right.				
24	I say this is my destiny in the face of what happened.				
25	I wish I was a stronger person.				
26	I think that I have changed and matured for the better as a person.				
27	I think what my fault is.				
28	I always think it's because of me.				
29	I consult others to understand the real cause of the problem.				
30	Knowing that there are people who can support me makes me feel comfortable.				

Appendix C

Coronavirus Anxiety Scale (Turkish-Koronavirüs Anksiyete Ölçeği)

	Maddeler	Hiçbir Zaman	Nadir, Bir veya iki Günden Az	Birkaç Gün	7 Günden Fazla	Son iki Haftada Neredeyse Her Gün
1	Koronavirüs ile ilgili haberleri okuduğum veya dinlediğim zaman başımın döndüğünü ve sersemleştiğimi hissettim veya bayılacakmış gibi oldum.					
2	Koronavirüsü düşündüğüm için uykuya dalmada ya da uyumada sorun yaşadım.					
3	Koronavirüs ile ilgili konuları düşündüğümde ya da bu konulara maruz kaldığımda inme inmiş gibi hissettim veya donup kaldım.					
4	Koronavirüs ile ilgili konuları düşündüğümde ya da bu konulara maruz kaldığımda iştahım kaçtı.					
5	Koronavirüs ile ilgili konuları düşündüğümde ya da bu konulara maruz kaldığımda mide bulantısı ya da mide problemleri yaşadım.					

Appendix D

Coronavirus Anxiety Scale

	Maddeler	Never	Rare, less than 1 or 2 days	A few days	More than seven days	Almost every day in the last two weeks
1	I felt dizzy and lightheaded or fainted when I read or listened to news about the coronavirus.					
2	I had trouble falling asleep or staying asleep because I was thinking about the coronavirus.					
3	When I thought about or was exposed to coronavirus-related topics, I felt like I had a stroke or froze.					
4	When I thought about or be exposed to coronavirus-related topics, I lost my appetite.					
5	I experienced nausea or stomach problems when thinking about or being exposed to coronavirus-related topics.					

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