Investigating the Psychological Impacts of the COVID-19 Pandemic on University Students of Health Sciences Courses and Associated Factors

COVID-19 Küresel Salgınının Sağlık Bilimleri Dersi Alan Üniversite Öğrencileri Üzerindeki Psikolojik Etkileri ve İlişkili Etmenler

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Abstract

Aim: The aim of this study was to determine the psychological impacts of the COVID-19 pandemic and associated factors on students of health sciences courses.

Method: The population of the study consisted of students from all universities providing associate and undergraduate education in the field of health in Turkey. The sample of the research consists of 520 students. The research data were collected online using a descriptive characteristics form, the Impact of Events Scale (IES), and the Depression Anxiety Stress Scale (DASS). Mann-Whitney U, Kruskal-Wallis tests, and Spearman Correlation analysis were used to evaluate the data.

Findings: According to the findings, the mean scores of women whose families had indifferent attitudes and those with psychiatric disorders were significantly higher (p<0.05). Emotionally stable students had significantly lower IES scores than other students. (p<0.01). It was determined that the total and sub-dimension scores of DASS were significantly lower in those whose families exhibited a tolerant and democratic attitude than those whose families had an authoritarian and indifferent attitude (p<0.05). Female participants had significantly higher mean scores in the DASS and Depression Anxiety sub-dimensions (p<0.05). Those with chronic diseases had significantly higher mean scores on the DASS. Those who defined their mood as stable during the pandemic process had significantly lower mean scores in the DASS and its sub-dimensions. A significant positive correlation was found between IES and DASS and its sub-dimensions (p<0.001).

Conclusion: When these results were evaluated, it was determined that female students were negatively affected by the pandemic and experienced depression and anxiety, while those with a stable mood were less affected by the events and experienced less depression, anxiety, and stress. It was also concluded that those whose families were tolerant and democratic were less affected by the pandemic and experienced lower levels of depression, anxiety, and stress. Psychological impacts are related to the level of being affected by events.

Keywords: Pandemic, psychological impact, COVID-19, university students.

Öz

Amaç: Bu araştırmada, sağlık bilimleri dersi alan üniversite öğrencilerine COVID-19 küresel salgınının psikolojik etkileri ve ilişkili etmenleri belirlemek amaçlanmaktadır.

Gereç ve Yöntem: Araştırmanın evrenini, Türkiye'de sağlık alanında ön lisans ve lisans eğitimi veren tüm üniversitelerdeki öğrenciler oluşturmaktadır. Araştırma örneklemi ise 520 öğrenciden oluşmuştur. Araştırma verileri çevrimiçi ortamda, "Tanıtıcı Özellikler Formu, Olayların Etkisi Ölçeği (OEÖ) ve Depresyon Anksiyete Stres Ölçeği (DASÖ)" ile toplanmıştır. Verilerin değerlendirilmesinde; Mann Whitney U, Kruskal Wallis testleri ve Spearman Korelasyon analizi kullanılmıştır.

Bulgular: Sonuçlara göre ilgisiz tavırlar sergileyen aileye sahip kadınların, psikiyatrik bozukluğu olanların, OEÖ puan ortalaması anlamlı derecede yüksek bulunmuştur (p<0,05). Duygusal olarak dengeli olan öğrencilerin IES puanları diğerlerine göre anlamlı derecede düşük saptanmıştır (p<0,01). Küresel salgın sürecinde ailesi hoşgörülü ve demokratik tutum sergileyenlerin otoriter ve ilgisiz tutum sergileyenlere göre hem DASÖ toplam puanı ve alt boyut puanları anlamlı derecede düşük bulunmuştur (p<0,05). Kadın

katılımcıların DASÖ ve Depresyon Anksiyete alt boyutları puan ortalamaları anlamlı derece yüksek (p<0,05) iken kronik hastalığı olanların DASÖ puan ortalaması anlamlı derecede yüksek belirlenmiştir. Küresel salgın sürecinde duygu durumlarını dengeli olarak tanımlayanların DASÖ ve alt boyut puan ortalamaları anlamlı derecede düşük olarak saptanmıştır. OEÖ ile DASÖ ve alt boyutları arasında olumlu yönde anlamlı ilişki bulunmuştur (p<0,001).

Sonuç: Bu sonuçlar değerlendirildiğinde, kadın öğrencilerin küresel salgından olumsuz anlamda etkilediği ve depresyon, anksiyete yaşadıkları, duygu durumu dengeli olanların olaylardan daha az etkilediği ve daha az depresyon, anksiyete ve stres yaşadıkları bulunmuştur. Ayrıca ailesi hoşgörülü, demokratik olanların salgından daha az etkilendiği ve daha düşük derecede depresyon, anksiyete ve stres deneyimledikleri sonucuna ulaşılmıştır. Kişilerin olaylardan etkilenme düzeyleri ile psikolojik etkiler ilişkili bulunmuştur.

Anahtar Sözcükler: Küresel salgın, pandemi, psikolojik etki, COVID-19, üniversite öğrencileri.

Introduction

The World Health Organization (2020) declared COVID-19 a pandemic in March 2020. The disease emerged in Wuhan, China in 2019 and affected the world with an increasing number of cases and deaths. At the beginning of the pandemic, within the scope of the isolation measures taken to prevent the spread of the disease, universities in many countries suspended face-to-face education and switched to distance education (Cao et al., 2020; Kecojevic et al., 2020; Tisinli et al., 2021). The lack of equal opportunities for students, the uncertainty of the pandemic, the inability to adapt to distance education, and especially the impossibility of students studying health to go to clinical practices have caused them to feel unqualified for graduation and to have anxiety and fear for their future (Bat Tonkuş & Bakırhan, 2021; Karataş et al., 2020). Studies during the pandemic have reported that students studying nursing and other health sciences programs feel stressed, anxious, and depressed, and experience physical symptoms such as insomnia, weakness, irritability, and headaches (Sheroun et al., 2020; Bauchner & Sharfstein, 2020; Cao et al., 2020; Bat Tonkuş & Bakırhan, 2021; Cheung et al., 2020; Kecojevic et al., 2020; Tisinli et al., 2021). This study was conducted to determine the psychological impacts of the COVID-19 pandemic and associated factors on students of health sciences courses.

Method

Design and Sample: The research is descriptive. The universe of the research included students of health sciences courses during the COVID-19 pandemic in Türkiye. The sample of the research consists of 520 students. The data were collected between December 2020 and February 2021.

Data Collection: The data were collected online by the researchers using an information form, the Impact of Events Scale (IES), and the Depression Anxiety Stress Scale (DASS) via Google Forms software. Data collection took an average of 15 to 20 minutes per person. The snowball sampling method was used to collect the data.

Introductory Information Form: It is a 13-question form developed by the researchers by reviewing the literature to determine the socio-demographic characteristics of the participants (Kecojevic et. Al., 2020; Sheroun et. Al., 2020).

Impact of Events Scale (IES): It was developed by Weiss and Marmar (1996) and its Turkish validity and reliability study was conducted by Çorapçioğlu et al. (2006). The scale consists of 22 items and is scored on a 5-point Likert scale (0-4). In this scale, participants are asked to rate the symptoms experienced in the last 7 days. The scale consists of 3 sub-dimensions: re-experiencing (8 items), avoidance (8 items), and hyperarousal (6 items). The cut-off value of the scale was taken as 24, 24 or more Post Traumatic Stress Disorder (PTSD) is a clinical concern. Cronbach's alpha internal consistency coefficient is 0.93 (Çorapçioğlu et al., 2006) and it was calculated as 0.92 in this study.

Depression Anxiety Stress Scale (DASS): It is a 42-item scale developed by Lovibond and Lovibond (1995) and adapted into Turkish by Akın and Çetin (2007). In the scale, the first 14 questions are about depression, the following 14 are about anxiety, and the last 14 are about stress. The scale has a 4-point Likert-type scale with 0 being not at all suitable for me, 1 being somewhat suitable for me, 2 being generally suitable for me, and 3 being completely suitable for me. High scores in each of the dimensions of depression, anxiety, and stress indicate that the individual has a relevant problem. There are no reverse items in the scale with total scores ranging between 0 and 42. Akin and Çetin, who adapted the scale, scored the levels of depression, anxiety, and stress. The score of depression subscale indicates that 0-9 is normal, 10-13 is mild, 14-20 is moderate, 21-27 is advanced and 28+ is very advanced depression level. The score of the anxiety subscale indicates that 0-7 is normal, 8-9 is mild, 10-14 is moderate, 15-19 is advanced and 20+ is very advanced anxiety level. Finally, the score of the stress subscale indicates that 0-14 is normal, 15-18 is mild, 19-25 is moderate, 26-33 is advanced and 34+ is very advanced stress level (Akin & Çetin, 2007). The Cronbach's alpha reliability coefficient of the DASS is 0.89 for the whole scale (Akin & Çetin, 2007) and was found to be 0.976 in this study.

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Data Analysis: The data were analyzed using IBM SPSS 25.0 statistical program (IBM Statistical Package for Social Sciences- SPSS; Armonk, NY, USA). Frequency, percentage, mean, and standard deviation were used as descriptive statistics; Mann-Whitney U and Kruskal-Wallis tests were used for variables that did not show normal distribution in the comparison of measurable data; Spearman Correlation Analysis was used to determine the relationship between the scales. The results were considered statistically significant at $p < 0.05$ significance level.

Ethical Principles of the Study: Ethics Committee Approval for the study (2020/12-547) was obtained from the non-interventional ethics committee of Istanbul Yeni Yüzyil University. Participants filled in an Informed Consent Form.

Results

Table 1. Range of students' defining characteristics (N:520)

Descriptive characteristics	n	%
Gender		
Man	99	19.0
Woman	421	81.0
Age		
18-25	503	96.7
26+	17	3.3
University type		
Foundation	353	67.9
State	167	32.1
Department		
Undergraduate	484	93.1
Associate degree	36	6.9
Grade		
1st Grade	184	35.4
2nd Grade	82	15.8
3rd Grade	135	26.0
4th Grade	108	20.8
5th Grade	11	2.1
Family structure		
Elementary family	431	82.9
Single parent family	23	4.4
Extended family	66	12.7
Family's attitude in the pandemic		
Tolerant	332	63.8
Authoritarian	91	17.5
Democratic	60	11.5
Indifferent	37	7.1
Having a chronic illness		
Yes	48	9.2
No	472	90.8
Diagnosis of the illness		
Cardiac diseases	9	18.4
Psychiatric disorders	9	18.4
Respiratory diseases	15	30.6
Other chronic diseases	16	32.7

Table 1. Continued

Descriptive characteristics	n	%
The longest lockdown period in the pandemic		
5-10 days	64	12.3
15 days and more	344	66.2
10-15 days	72	13.8
Less than 5 days	40	7.7
Mood during the pandemic		
Anxious	170	32.7
Stabile	153	29.4
Sad	117	22.5
Angry	43	8.3
Depressive	37	7.1
Emotions felt while following the news on COVID-19		
Suprise	38	7.3
Anxiety	139	26.7
Fear	40	7.7
Stress	142	27.3
Desperation	114	21.9
Unfollow	47	9.0
Emotions felt against people who do not follow the isolation rules		
Nothing	37	7.1
Anger	410	78.8
Anxiety	36	6.9
Fear	13	2.5
Stress	24	4.6

It was found that 81% of the students participating in the study were female, 96.7% were between the ages of 18-25, 67.9% were studying at a foundation university, and 35.4% were freshmen. The present study found that 82.9% of the students had a nuclear family structure, and 17.5% of the families had authoritarian and 7.1% had indifferent attitudes during the pandemic period. It was found that 9.2% of the participants had chronic diseases, 30.6% of which were respiratory diseases. During the pandemic process, 66.2% of the students stated that they stayed at home for more than 15 days without interruption. While the rate of those who felt anxious during the pandemic was 32.7%, the rate of those who reported their emotional state as stable was 29.4%. When the emotions felt in response to the news about Covid-19 were analyzed, 27.3% of the students felt stressed and 26.7% felt anxious. It was found that anger (78.8%) was the most common feeling against those who did not follow the isolation rules (Table 1).

Table 2. Students' averages from the Impact of Events Scale and Depression-Anxiety-Stress Scale (N:520)

	Mean	SD	Min.	Max.
The Impact of Events Scale	35.51	16.35	0.00	88.00
Re-experiencing	13.53	7.16	0.00	32.00
Avoidance	11.88	5.66	0.00	32.00
Hyperarousal	10.10	5.80	0.00	24.00
Depression-Anxiety-Stress Scale	50.53	31.43	0.00	126.00
Depression	17.58	10.32	0.00	42.00
Anxiety	15.84	10.96	0.00	42.00
Stress	17.12	11.39	0.00	42.00

The mean scores of the students who participated in the study were 35.51 (SD=16.35), 13.53 (SD=7.16), 11.88 (SD=5.66), and 10.10 (SD=5.80) on the IES, Re-experiencing sub-dimension, Avoidance sub-dimension, and Arousal sub-dimension, respectively. The DASS score of the students was 50.53 (SD=31.43), the mean Depression sub-dimension score was 17.58 (SD=10.32), the mean Anxiety sub-dimension score was 15.84 (SD=10.96), and the mean Stress sub-dimension score was 17.12 (SD=11.39) (Table 2).

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Table 3. The comparison of students' defining characteristics according to the scale of impact of events (N:520)

		Mean (SD)	Z/χ2	p
Gender	Woman	36.75 (16.25)	Z=-3.563	**<0.001**
	Man	30.21 (15.8)		
Family's attitude during the pandemic	Tolerant a	34.14 (16.03)	χ2=11.317	**0.010***
	Authoritarian b	38.02 (17.55)		a<d
	Democratic c	34.88 (15.56)		
	Indifferent d	42.57 (15.49)		
Having a chronic disease	Yes	39.44 (19.25)	Z=--1.620	0.105
	No	35.11 (16.00)		
Diagnosis of the disease	Cardiac diseases a	47.33 (24.94)	χ2=7.954	**0.047***
	Psychiatric disorders b	51.67 (12.21)		d.c<b
	Respiratory diseases c	32.8 (17.42)		
	Other chronic diseases d	35.06 (16.85)		
Mood during the pandemic	Anxious a	37.53 (16.15)	χ2=31.812	**<0.001**
	Stabile b	29.22 (14.83)		b<a.c.d.e
	Sad c	39.79 (15.74)		
	Angry d	37.05 (17.01)		
	Depressive e	36.84 (17.76)		

χ2: Kruskal Wallis. Z: Mann Whitney U
*p<0.05

The mean score of the IES was significantly higher in female students (p<0.01). When the Impact of Events Scale was analyzed based on the attitudes of families in the pandemic, the mean score of those whose families exhibited an indifferent attitude was significantly higher than those who exhibited a tolerant attitude (p<0.05). When the IES scores of the students were compared according to the disease diagnosis, the mean score of those with psychiatric disorders was significantly higher than those with respiratory and other chronic diseases (p<0.05). It was found that the mean score of the IES of those with a stable mood during the pandemic process was significantly lower than the students with other moods (p<0.01), (Table 3).

The mean scores of the DASS and Depression and Anxiety sub-dimension scores of female students were significantly higher (p<0.05). When the mean scores of the DASS were analyzed according to the attitudes of families in the pandemic, the mean scores of those who exhibited a tolerant and democratic attitude were significantly lower than those who exhibited an authoritarian and indifferent attitude in both total score and sub-dimensions (p<0.05). The mean score of the DASS was significantly higher in those with chronic diseases. Those who were in a stable emotional state during the pandemic process had significantly lower mean scores on the DASS and its sub-dimensions. When the emotions felt in response to the news related to COVID-19 were examined, the mean scores of the DASS and sub-dimension scores of those who felt fear and helplessness were significantly higher (p<0.05) (Table 4).

Table 4. Comparison of defining characteristics of students using the Depression-Anxiety-Stress Scale (N:520)

		Depression Anxiety Stress Scale	Depression	Anxiety	Stress
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Gender	Woman	51.91 (30.88)	18.07 (10.16)	16.26 (10.72)	17.59 (11.3)
	Man	44.68 (33.17)	15.49 (10.81)	14.06 (11.82)	15.12 (11.62)
	Z	-2.209	-2.369	-2.199	-1.946
	p	**0.027***	**0.018***	**0.028***	0.052
Family's attitude in the pandemic	Tolerant [a]	47.05 (30.31)	16.61 (10.04)	14.55 (10.54)	15.9 (10.81)
	Authoritarian [b]	60.73 (33.1)	20.38 (11.42)	19.88 (11.52)	20.46 (11.65)
	Democratic [c]	45.63 (28.01)	16.48 (8.83)	14.05 (9.93)	15.1 (10.68)
	Indifferent [d]	64.68 (33.82)	21.16 (10.57)	20.41 (11.56)	23.11 (13.55)
	χ2	22.012	13.927	23.504	20.214
	p	**<0.001**	**0.003****	**<0.001**	**<0.001**
		a.c<b.d	a.c<b.d	a.c<b.d	a.c<b.d
Having chronic disease	Yes	61.63 (35.91)	20.96 (11.82)	19.92 (12.2)	20.75 (12.85)
	No	49.4 (30.75)	17.23 (10.11)	15.42 (10.76)	16.75 (11.18)
	Z	-2.231	-1.931	-2.450	-2.163
	p	**0.026***	0.053	**0.014***	**0.031***
Mood during the pandemic	Anxious [a]	52.2 (31.27)	17.48 (10.03)	16.64 (11.02)	18.09 (11.48)
	Stabile [b]	37.14 (27.73)	13.43 (9.49)	11.24 (9.42)	12.46 (9.99)
	Sad [c]	58.5 (31.32)	20.7 (9.86)	18.54 (10.98)	19.26 (11.73)
	Angry [d]	61.12 (29.42)	21.09 (10.42)	19.07 (10.73)	20.95 (9.99)
	Depressive [e]	60.76 (31.75)	21.22 (10.46)	18.89 (11.25)	20.65 (11.33)
	χ2	47.028	45.811	44.091	41.182
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**
		b<a.c.d.e	b<a.c.d.e	b<a.c.d.e	b<a.c.d.e
Emotions felt while following the news on COVID-19	Surprise [a]	53.03 (29.45)	18.55 (10.11)	15.42 (9.73)	19.05 (10.93)
	Worry [b]	45.50 (28.98)	15.72 (9.77)	14.42 (10.23)	15.36 (10.30)
	Fear [c]	59.63 (35.88)	21.23 (10.96)	19.00 (12.27)	19.40 (13.66)
	Stress [d]	46.94 (29.34)	16.73 (9.84)	14.71 (10.32)	15.49 (10.42)
	Desperation [e]	58.09 (33.14)	19.71 (10.77)	18.55 (11.50)	19.82 (12.12)
	Unfollow [f]	48.19 (34.00)	16.55 (10.62)	14.49 (12.14)	17.15 (12.43)
	χ2	13.286	14.580	13.645	11.960
	p	**0.021***	**0.012***	**0.018***	**0.035***
		b<d.f.a.e.c	b<f.d.a.e.c	b<f.d.a.e.c	b<d.f.a.c.e

χ2: Kruskal Wallis. Z: Mann Whitney U

*p<0.05, **p<0.01

Table 5. The findings for the relationship between the Impact of Events Scale and the Depression-Anxiety-Stress Scale (N:520)

		Depression-Anxiety-Stress Scale	Depression	Anxiety	Stress
The Impact of Events Scale	r	0.620	0.589	0.607	0.590
	p	**<0.001**	**<0.001**	**<0.001**	**<0.001**

r: The analysis of Spearman correlation

A positive and meaningful mid-level relationship was found between the DASS and the sub-dimensions (Table 5).

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Discussion

The COVID-19 pandemic has caused various health issues, such as physical health problems caused by the virus, psychosocial effects along with stress, loneliness, and anxiety, etc. The pandemic not only affects individuals physically but can also cause widespread psychological problems. Students studying in health programs have also been experiencing this process in many aspects and must cope with several problems, such as distance education, inability to go to clinical practice, etc.

According to the results of this study, it was determined that female students were the most affected group by the pandemic process, and the mean depression score was high among participants. In a study conducted with health students at a university in Jordan during the COVID-19 pandemic, it was reported that the majority of female students had high levels of anxiety and depression (Basheti et al., 2021). Yorguner et al. (2021) reported that university students experienced intense anxiety and worry during the pandemic process. It is stated that especially women were more affected by this process and experienced more stress and anxiety (Hamaideh, 2012; Rudolph, 2002). In a similar study conducted with Swiss university students, having a female gender was determined as a risk factor for anxiety during the COVID-19 pandemic (Dratva et al., 2020).

When the literature is reviewed, it was found that individuals exposed to COVID-19 infection or suspected of having the disease experienced intense emotional and behavioral reactions such as fear, sadness, loneliness, anxiety, insomnia, and anger (Brooks et al., 2020; Ornell et al., 2020). It is stated that even individuals with the flu or flu experienced intense fear and stress (Wang et al., 2020). Even in non-symptomatic, non-fatal, suspected cases, the psychological effects of the pandemic are experienced intensely (Yang et al., 2020). According to a study conducted in the United States, university students were affected emotionally and behaviorally, felt more melancholic and depressed than before, and experienced anxiety, worry, and stress (Browning et al., 2021). In a large-scale study conducted in Türkiye, it was found that participants had high levels of somatization, anxiety, phobic anxiety, obsessive-compulsive disorder, depression, hostility, and anger, and it was emphasized that these symptoms were higher in females(Bilge & Bilge, 2020). In the present study, individuals with a stable mood due to the pandemic were found to have lower mean scores ($p<0.01$) on the IES and DASS.

Ho et al. (2020) stated that the pandemic triggered depression in individuals who could not realize their traveling plans, had to comply with social distancing, and received constant information about the pandemic in the media. In the present study, it was found that the feelings of fear and helplessness increased in those who followed the media intensely and their mean score of the DASS was high ($p<0.05$).

It was found that students reported having an indifferent family had a higher mean score on the IES compared to those reported having a family with a tolerant attitude ($p<0.05$), and those who had a family with a tolerant and democratic attitude had a lower mean score on the DASS compared to those who had a family with an authoritarian attitude ($p<0.05$). In a similar study conducted with medical students during the pandemic, it was determined that 66% of the students were concerned about the indifference of family members (Seetan et al., 2021). Consistent maternal and paternal attitudes towards their children contribute to their psychological adaptation and development. On the other hand, negative maternal and paternal attitudes trigger the emergence of some mental problems (Aydoğdu, 2016). In this regard, the reinforcement of existing maternal and paternal attitudes in times of crisis, such as an increase in authoritarian attitudes or a more problem-solving tolerant attitude, significantly affects individuals.

Conclusions and Recommendations

In conclusion, students of health sciences courses got affected by the COVID-19 pandemic. In terms of mood, the fact that individuals a with stable mood survived the pandemic process easily shows us that support should be provided to strengthen coping skills. The uncertainty of the pandemic process may have long-term effects on students' mental health. Therefore, it will be important to identify subgroups according to the psychological problems that individuals are experiencing or may experience and to apply the most effective intervention methods in relevant situations in order to make acute and long-term planning to control and reduce the psychological impacts of the pandemic. In addition, since family life is also affected, it is an important step to create awareness and support for mothers and fathers and to increase their psychological resilience. It is a situation that may recur as a pandemic. However, the necessary precautions are taken only for physical purposes and mental health is kept in the background. Measures should be taken to protect mental health and prevent psychosocial problems that may arise during a pandemic. Studies with a larger sample are recommended to examine their mental status in the post-pandemic period.

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