

# Comparison of Coronavirus Fears of Nursing Students Receiving Online and Face-to-Face Training in Pandemic: Cross-Sectional Study

## Pandemide Çevrim İçi ve Yüz Yüze Eğitim Alan Hemşirelik Öğrencilerinin Koronavirüs Korkularının Karşılaştırılması: Kesitsel Bir Araştırma

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**ABSTRACT Objective:** The aim of this study is to compare the coronavirus fears of nursing students receiving online and face-to-face training in the pandemic. **Material and Methods:** This research was conducted in a cross-sectional way. The research was conducted with 900 nursing students who agreed to participate in the research between December 10, 2020, and January 15, 2021. The personal information form created by the researchers and the Coronavirus Fear Scale was used. The statistical analyses were conducted with the SPSS 21 package program. Approval was obtained from ethics committee and Ministry of Health. **Results:** When looking at the measures taken by the participants regarding coronavirus disease-2019 (COVID-19), it is seen that 85.6% of them stay at home unless they need, 64.7% maintain to social distance, and 63.6% pay attention to hygiene rules. When COVID-19 fear levels of nursing students who received distance and face-to-face practical education are compared, a statistically significant difference was found between the groups. This study revealed that statistically significant relationship between COVID-19 fear level and nursing students' gender, grade, place of residence, and having a family member/relative/friend with positive COVID-19 test result. **Conclusion:** This study show that the fear level of those who received face-to-face education was higher than those who received online education. It is suggested provide psychological support for students (especially female, those living at dormitories, and those who had a positive COVID-19 test result by themselves or by their relatives) that have higher fear of contracting coronavirus by universities.

**ÖZET Amaç:** Bu çalışmanın amacı, pandemi kapsamında çevrim içi ve yüz yüze eğitim alan hemşirelik öğrencilerinin koronavirüs korkularını karşılaştırmaktır. **Gereç ve Yöntemler:** Bu araştırma, kesitsel biçimde yapılmıştır. Araştırma, 10 Aralık 2020-15 Ocak 2021 tarihleri arasında, araştırmaya katılmayı kabul eden 900 hemşirelik öğrencisi ile yürütülmüştür. Verilerin toplanmasında araştırmacılar tarafından oluşturulan kişisel bilgi formu ve Koronavirüs Korku Ölçeği kullanılmıştır. İstatistiksel analizler SPSS 21 paket programı ile yapılmıştır. Etik kuruldan ve Sağlık Bakanlığından onay alınmıştır. **Bulgular:** Katılımcıların, koronavirüs hastalığı-2019'a [coronavirus disease-2019 (COVID-19)] ilişkin aldıkları tedbirlere bakıldığında %85,6'sının ihtiyacı duymadıkça evde kaldığı, %64,7'sinin sosyal mesafeye ve %63,6'sının hijyen kurallarına dikkat ettiği görülmektedir. Çevrim içi ve yüz yüze uygulamalı eğitim alan hemşirelik öğrencilerinin COVID-19 korku düzeyleri karşılaştırıldığında, 2 grup arasındaki farkın istatistiksel olarak anlamlı olduğu bulunmuştur. COVID-19 korku düzeyi ile hemşirelik öğrencilerinin cinsiyet, sınıf, yaşadıkları yer ve COVID-19 testi pozitif çıkan bir aile üyesi/akrabası/arkadaşının olması arasında istatistiksel olarak anlamlı bir ilişki olduğu ortaya çıkarılmıştır. **Sonuç:** Çalışmanın sonuçları, yüz yüze eğitim alanların korku düzeylerinin çevrim içi eğitim alanlara göre daha yüksek olduğunu göstermektedir. Üniversiteler tarafından koronavirüse yakalanma korkusu yüksek olan öğrencilere (özellikle kız öğrenciler, yurtlarda kalanlar, kendi veya yakınları tarafından COVID-19 testi pozitif çıkanlar) psikolojik destek verilmesi önerilmektedir.

**Keywords:** Online education; nursing students; COVID-19; fear

**Anahtar Kelimeler:** Çevrim içi eğitim; hemşirelik öğrencileri; COVID-19; korku

In early December 2019, the coronavirus disease-2019 (COVID-19) noted to be caused by severe acute respiratory syndrome-coronavirus-2, emerged

in Wuhan city, Hubei Province, China. Since then, local and national governments have begun to take measures in social and economic areas in response to

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the outbreak of the disease.<sup>1,2</sup> According to the news dated August 31, 2021 of the “Worldometer” website which updated the situation with respect to the new type of coronavirus (COVID-19) across the world, around 217.9 million people were diagnosed with the disease, approximately 4.5 million people died and nearly 194.8 million patients recovered.<sup>3</sup>

The efforts on COVID-19 in Türkiye began on January 10 and the first COVID-19 case was detected on March 11, 2020. As part of the measures taken after the first case was seen, education at universities was suspended.<sup>4</sup> Following this decision, distance (online) education centres of universities started education by adapting quickly to the process.<sup>5</sup> Concerning the education process, some schools preferred transferring their education to the next term, while other schools switched to distance education systems.<sup>6,7</sup> Distance education, is an innovative education system, which uses completely virtual environments, independent of time and place, which is preferred at all levels of education, and in which teachers and students do not need to be brought together.<sup>8</sup>

Although distance education can be used in all areas of the education system, this system causes some problems in departments such as nursing departments that have practical education.<sup>9</sup> For this reason, some universities decided to conduct theoretical courses via distance education, and practical courses via face-to-face education. Epidemic diseases generally create feelings such as fear, anxiety and concern within the society, and particularly the epidemics such as COVID-19, the exact treatment of which is not yet known, further increases these feelings. Considering the literature, many studies have shown that epidemic diseases cause a great trauma within the society and increase the levels of anxiety and fear.<sup>10-12</sup> Anxiety and fear are functional emotions in terms of motivation in the face of difficulties experienced. The creation of these feelings directs the individual to be cautious and take measures to protect from the COVID-19. However, it is known that fear and anxiety about the epidemic may result in psychological problems if it reaches pathological levels.<sup>13</sup> The psychological effects of the COVID-19 pandemic are high and should be evaluated closely.<sup>14</sup> Although

there are studies on COVID-19 addressing the fear of contracting coronavirus by nursing students, no studies comparing the fears of contracting coronavirus by nursing students receiving face-to-face and distance practical education during the pandemic process have been conducted. It is thought that determining, the fears of contracting coronavirus by the individuals receiving online practical education at their homes, and those who come school to get face-to-face education, can guide on how to follow the subsequent education process and how to support students in line with the results of decisions taken.

This study aims to compare the coronavirus fears of nursing students receiving online and face-to-face training in the pandemic. For this purpose, answers to the following questions were sought:

1. What is the COVID-19 fear level of nursing students?
2. Do the fear levels of nursing students who receive face-to-face practical education differ significantly from those who receive distance practical education?
3. Do nursing students' COVID-19 fear levels differ significantly by their personal characteristics?

## MATERIAL AND METHODS

### RESEARCH DESIGN

This research had a comparative and cross-sectional study and was conducted between December 10, 2020, and January 15, 2021.

### Research Population/Sample

The population of the study consists of 1,120 students attending the nursing departments at a university. In the study, no sample selection was performed, and 900 (80%) students who met the criteria were included in the study. The inclusion criteria were accepting to participate in the study, being a nursing student and completely filling out the online survey. The surveys were created on Google Forms and sent online to students. The students who did not want to participate in the study, who filled the forms incompletely, and gave up participating in the study were excluded from the study. While the 2<sup>nd</sup> and 3<sup>rd</sup> grades

participating in the research in the 2020-2021 fall semester took the practice courses face-to-face, the 1<sup>st</sup> and 4<sup>th</sup> grades received their practice training online in the same period. In this study, those who received online and face-to-face application training were compared with each other.

#### Data Collection Tools

**Personal Information Form:** This form is a form created by scanning the literature and asking the demographic characteristics of the participants (age, gender, school, class, living place, practice lessons, measures taken regarding COVID-19, COVID-19 test positive in him/her self and COVID-19 test positive in family/relative/friend).<sup>15-18</sup>

**The Fear of COVID-19 Scale:** The scale was developed by Ahorsu et al., and its adaptation to the Turkish language and validity and reliability studies were performed by Ladikli et al. The scale has a single factor structure and consists of seven items of five-point Likert type (1=Strongly disagree; 5=Strongly agree). A score of 7-35 is obtained from the scale. As the score obtained from the scale increases, the fear level of COVID-19 pandemic increases. The Cronbach's alpha value of the scale is 0.82.<sup>19</sup> The Cronbach alpha value of this study is 0.93.

#### DATA ANALYSIS

Statistical analysis was performed using the SPSS 21 package program. Descriptive statistics were examined to analyse the data and, the normal distribution of data checked for deciding on the statistical analyses to be conducted. Since data did not have normal distribution, Kruskal-Wallis and Mann-Whitney U tests were applied for the differences of continuous variables between groups. The power of the study was taken as 95% and the Type I error was 0.05. The risk of a Type II error is inversely related to the statistical power of a study. In addition, Cronbach's alpha value was calculated for The Fear of COVID-19 Scale.

#### ETHICAL ASPECT OF RESEARCH

In order to carry out the study, the ethics committee permission from Burdur Mehmet Akif Ersoy University Non-interventional Clinical Research Ethics

Committee (date: 02.12.2020, no: GO 2020/326) and approval of the Ministry of Health were obtained before starting the research. Also, written and oral permissions were obtained from students who agreed to participate in the research. The research and publication ethics are observed in the article. The study was carried out in accordance with the principles of the Declaration of Helsinki.

## RESULTS

The mean age of the participants is  $20.36 \pm 1.88$  years 70.1% of them are female; 58.3% of them are at high school; 32.7% of them are second graders, and 51.9% of them are living with their family. The measures taken by the participants with respect to COVID-19, 85.6% of participant stayed at home unless it was necessary to go out; 64.7% of them maintained social distance; 6.1% had a history of having a positive COVID-19 test result, and 57.6% had a family member/relative/friend with positive COVID-19 test result (Table 1).

It is seen that the mean scores of the Fear of COVID-19 Scale are  $19.22 \pm 8.00$ , and the Cronbach alpha value is 0.93 (Table 2). When these results are evaluated, the students' levels of fear of contracting coronavirus are at a moderate level, and the measurement reliability of the scale in this study is high.

When COVID-19 fear levels of nursing students who received distance ( $17.48 \pm 6.72$ ) and face-to-face ( $20.42 \pm 8.61$ ) practical education are compared, a statistically significant difference was found between the groups ( $p < 0.05$ ) (Figure 1).

Comparing the mean scores of the nursing students based on descriptive characteristics, a significant relationship was detected between COVID-19 fear level and the participants' gender, grade, place of residence, and having a family member/relative/friend with positive COVID-19 test result ( $p < 0.05$ ) (Table 3).

When the significance values of the coefficients related to the variables are examined, it is seen that the living place does not have a statistically significant effect on the fear of coronavirus [(0.077)  $> 0.05$ ]. Gender, class, COVID-19 test positivity in

**TABLE 1: Descriptive characteristics of nursing students (n=900).**

Descriptive characteristics	n	%
Age (X±SD)	20.36±1.88	
17-19	307	34.1
20-21	235	26.1
>21	358	39.8
Gender		
Female	631	70.1
Male	269	29.9
School		
Higher school	525	58.3
Faculty	375	41.7
Class		
First	248	27.6
Second	294	32.7
Third	226	25.1
Fourth	132	14.7
Living place		
Living with the family	467	51.9
Staying in dormitory	234	26.0
Staying in students home	122	13.6
Staying in pension/apart	77	8.6
Practice lessons		
Face-to-face	632	70.2
Online	268	29.8
Measures taken regarding COVID-19*		
Stay home unless needed	770	85.6
Maintaining social distance	582	64.7
Paying attention to hygiene rules	572	63.6
Using personal protective equipment such as masks and gloves	468	52.0
COVID-19 test positivity in him/her self		
Yes	55	6.1
No	845	93.9
COVID-19 test positivity in family/relative/friend		
Yes	518	57.6
No	382	42.4

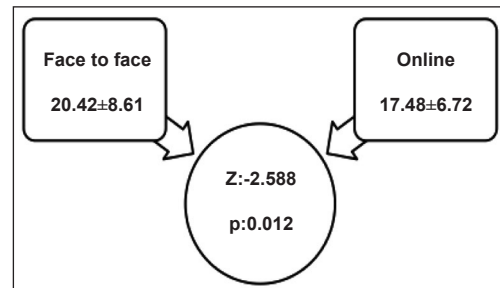
\*Since they could choose more than one option, their number was evaluated over the total number for each item; SD: Standard deviation.

him/her self and COVID-19 test positivity in family/relative/friend are important variables that have a

**TABLE 2: Mean scores, SD and Cronbach alpha value of the COVID-19 Fear Scale.**

Scale	Total items	Score ranges	Mean	SD	Cronbach alpha
Total	7	7-35	19.22	8.00	0.93

SD: Standard deviation.



**FIGURE 1:** Comparison of the average scores of the COVID-19 Fear Scale of nursing students receiving online and face-to-face training (n=900).

statistically significant effect on fear of coronavirus [(0.00; 0.043;0.004 and 0.00) <0.05] (Table 4).

### DISCUSSION

It is seen that the ambiguity of the pandemic process, the self-protection concerns of the people, and the fear of contracting coronavirus make it difficult for students to focus on lessons and affect them psychologically in a negative way.<sup>20-23</sup> A study investigating the psychological distress and anxiety levels of COVID-19 on students showed that 24.9% of university students experienced anxiety due to the COVID-19 pandemic. Almost 1% of these students had severe anxiety and 21.3% of those had mild anxiety.<sup>21</sup> Another study found that nearly 24.9% of the students experienced anxiety due to the COVID-19 pandemic.<sup>11</sup> According to the current study findings, the average scores of the participants obtained from the Fear of COVID-19 Scale is 18.22±8.00. This finding shows that the students experience moderate level of fear. A study carried out with Turkish professional footballers noted that they experienced moderate level of fear due to COVID-19 and did not have many mental problems.<sup>24</sup> It is considered that the overall lack of high levels of fear among participants may have been caused by the fact that COVID-19 cases began to decline and the access to the vaccine accelerated during the data collection period.

**TABLE 3:** Comparison of the average scores of the COVID-19 Fear Scale according to the descriptive characteristics of nursing students (n=900).

Descriptive characteristics	COVID-19 Fear Scale	
Age		
18-19	18.47±7.71	KW: 5.830
20-21	20.16±8.34	p=0.054
>22	19.25±7.97	
Gender		
Female	20.17±7.51	Z: -6.281
Male	17.01±8.67	p<0.001
School		
Higher school	19.15±8.12	Z: -0.429
Faculty	19.33±7.84	p=0.668
Class		
First	17.16±6.74	KW: 24.242
Second	20.38±8.71	p=0.000
Third	20.46±8.51	
Fourth	18.40±6.71	
Living place		
Living with the family	18.49±7.30	KW: 9.465
Staying in dormitory	20.43±8.93	p=0.024
Staying in students home	20.72±8.01	
Staying in pension/apart	18.75±8.36	
COVID-19 test positive in him/her self		
Yes	23.07±8.61	Z: -3.369
No	18.97±7.90	p=0.001
COVID-19 test positive in family/relative/friend		
Yes	20.44±8.14	Z: -5.240
No	17.57±7.51	p<0.000

In the pandemic process, anxiety and fear are experienced in general, especially when the outbreak first occurs and when the number of cases increases significantly, the emotions felt are greater.<sup>25</sup> This

study shows that students who receive face-to-face practical education have significantly more fear of contracting coronavirus than those who receive online education. The fact that the second and third graders receive face-to-face education and the first and fourth graders get online practical education also explains the significant difference between the level of fear by the variable of grade. The fact that some students go out to attend the compulsory face-to-face practical education, while social isolation is shown as the main measure against the epidemic, explains the students' high fear of contracting the coronavirus.<sup>26</sup> No matter how many security measures are taken on the basis of the institution, knowing that there is a high risk of rapid transmission through breathing and that it will cause serious diseases after transmission can be listed among the reasons that explain the high level of fear among students who receive face-to-face education.

Our study shows that female student' fear of contracting coronavirus is significantly higher than that of males. Similar to our study, Bakioglu et al. revealed in their study that women had higher levels of fear of COVID-19 than men.<sup>15</sup> The results of a great number of studies in the literature report that women are more afraid of contracting coronavirus than men, which supports our study.<sup>15,17,22,27</sup> While men are seen as strong, courageous and fearless in social perception, women are seen as fragile, sensitive and vulnerable. Therefore, it is readily accepted that it is easier for women to express their fears more easily. Since men do not want to show themselves weak socially, they prefer to hide their emotions. This result is considered to arise from the roles assigned to genders.

**TABLE 4:** Regression analysis results.

Model	Unstandardized coefficients		Standardized coefficients		t value	Sig.
	B	Standard. error	Beta			
1 (Constant)	31.665	2.344	13.509		0.000	
Gender	-3.447	0.562	-0.197		-6.132	0.000
Class	0.517	0.255	0.066		2.027	0.043
Living place	0.437	0.246	0.058		1.773	0.077
COVID-19 test positive in him/her self	-3.161	1.091	-0.095		-2.896	0.004
COVID-19 test positive in family/relative/friend	-2.673	0.531	-0.165		-5.034	0.000

Our study revealed that those living at a student house and a dormitory had more fear of contracting coronavirus than those who stayed with their families had. However, when the results of the regression analysis were evaluated, it was found that the effect of significance was not high. The study by Cao et al. highlights that living with family is important for individuals to protect themselves from disease during the COVID-19 process.<sup>21</sup> The basic needs of students living with their family are generally met by their families. Therefore, they are not involved in the situations such as going out, shopping, or being in a crowded environment. In this way, they feel more protected against coronavirus. On the other hand, those who stay at dormitories have to go out for their basic needs, and their food is prepared in environments they do not know. Moreover, there are common areas, for students where they are staying at student houses and dormitories, such as the same eating place, bathroom and toilets and the same room shared by a few students. It is considered that these conditions also cause, those who stay at student house and dormitories, to experience a greater fear of contracting coronavirus than those who stay with their family.

It is seen that the individuals having positive COVID-19 test result by themselves, and their family members/friends/relatives experience higher fear of contracting coronavirus than others. While coronavirus disease does not create the same impact on everyone and it results in mild and moderate symptoms without requiring special treatment for a significant majority of infected individuals, it leads to more serious consequences for older people having chronic diseases. Therefore, individuals diagnosed with COVID-19 themselves or by their relatives are expected to have higher levels of fear of contracting coronavirus than those without a history of diagnosis. One of the studies revealed that students had fears of transmitting coronavirus to their families, which had an adverse impact of students' psychology.<sup>28</sup> Another study noted that the reason for students' stress during this process was the possibility of being infected and the risk of transmitting viruses to their relatives.<sup>21</sup> In another study, the fear levels of the students who lost their relatives due to coronavirus

were significantly higher than those who did not experience such a loss.<sup>18</sup>

The limitation of this research is that the perception and psycho-social status of students change over time due to the measures taken throughout the country and the new developments to protect from the pandemic.

## CONCLUSION

The results of our study show that students' fears of contracting coronavirus are generally at a moderate level. The fear level of those who received face-to-face practical education was higher than those who received online practical education. It was also discovered that females, those living at dormitories, and those who had a positive COVID-19 test result by themselves or by their relatives had higher fear of contracting coronavirus. In line with our results, it is recommended that:

- Universities provide students with psychological support to cope with emotional reactions such as anxiety and fear,
- Other occupational groups take the necessary measures considering that they may experience fear when the compulsory face-to-face education is started,
- New research is conducted to develop evidence-based strategies to reduce fear before fully transiting to face-to-face education.

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## Conflict of Interest

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or mem-*

bers of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

### Authorship Contributions

**Idea/Concept:** Nurten Terkeş; **Design:** Nurten Terkeş, Mahmut

**Ateş;** **Control/Supervision:** Nurten Terkeş; **Data Collection and/or Processing:** Nurten Terkeş, Mahmut Ateş; **Analysis and/or Interpretation:** Nurten Terkeş; **Literature Review:** Nurten Terkeş, Mahmut Ateş; **Writing the Article:** Nurten Terkeş; **Critical Review:** Nurten Terkeş, Mahmut Ateş; **References and Fundings:** Nurten Terkeş, Mahmut Ateş.

## REFERENCES

- Chen S, Yang J, Yang W, Wang C, Bärnighausen T. COVID-19 control in China during mass population movements at New Year. *Lancet*. 2020;395(10226):764-6. [Crossref] [PubMed] [PMC]
- Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al; China Novel Coronavirus Investigating and Research Team. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020;382(8):727-33. [Crossref] [PubMed] [PMC]
- Worldometer [Internet]. Covid-19 coronavirus pandemic. Accessed date: 02 September 2021. Available from: [Link]
- Budak F, Korkmaz S. COVID-19 pandemi sürecine yönelik genel bir değerlendirme: Türkiye örneği [An overall evaluation for the COVID-19 pandemic process: the case of Turkey]. *Sosyal Araştırmalar ve Yönetim Dergisi*. 2020;(1):62-79. [Crossref]
- Serçemeli M, Kurnaz E. COVID-19 pandemi döneminde akademisyenlerin uzaktan eğitim ve uzaktan muhasebe eğitimine yönelik bakış açıları üzerine bir araştırma [A research on students' perspectives to distance education and distance accounting education in the COVID-19 pandemia period]. *Uluslararası Sosyal Bilimler Akademi Dergisi*. 2020;(3):262-88. [Link]
- Di Domenico L, Pullano G, Sabbatini CE, Boëlle PY, Colizza V. Impact of lockdown on COVID-19 epidemic in Île-de-France and possible exit strategies. *BMC Med*. 2020;18(1): 240. [Crossref] [PubMed] [PMC]
- Viner RM, Russell SJ, Croker H, Packer J, Ward J, Stansfield C, et al. School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *Lancet Child Adolesc Health*. 2020;4(5):397-404. [Crossref] [PubMed] [PMC]
- Enfiyeci T, Filiz SB. Uzaktan eğitim yüksek lisans öğrencilerinin topluluk hissini çeşitli değişkenler açısından incelenmesi [An investigation of the variance of community students in distance education]. *TUBAV Bilim Dergisi*. 2019;12(1):20-32. [Link]
- Çevirme A, Kurt A. COVID-19 pandemisi ve hemşirelik mesleğine yansımaları [COVID-19 pandemia and its reflections to nursing profession]. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*. 2020;7(5):46-52. [Link]
- Newby JM, O'Moore K, Tang S, Christensen H, Faasse K. Acute mental health responses during the COVID-19 pandemic in Australia. *PLoS One*. 2020;15(7):e0236562. [Crossref] [PubMed] [PMC]
- Huang L, Lei W, Xu F, Liu H, Yu L. Emotional responses and coping strategies in nurses and nursing students during COVID-19 outbreak: A comparative study. *PLoS One*. 2020; 15(8): e0237303. [Crossref] [PubMed] [PMC]
- Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, et al. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychother Psychosom*. 2020;89(4):242-50. [Crossref] [PubMed] [PMC]
- Satici B, Saricali M, Satici SA, Griffiths MD. Intolerance of uncertainty and mental wellbeing: serial mediation by rumination and fear of covid-19. *Int J Ment Health Addict*. 2020;1-12. [Crossref] [PubMed] [PMC]
- Pakpour AH, Griffiths MD. The fear of COVID-19 and its role in preventive behaviors. *Journal of Concurrent Disorders*. 2020;2(1):58-63. [Crossref]
- Bakioglu F, Korkmaz O, Ercan H. Fear of COVID-19 and positivity: mediating role of intolerance of uncertainty, depression, anxiety, and stress. *Int J Ment Health Addict*. 2020:1-14. [Crossref] [PubMed] [PMC]
- Bostan S, Erdem R, Öztürk YE, Kılıç T, Yılmaz A. The effect of COVID-19 pandemic on the Turkish society. *Electronic Journal of General Medicine*. 2020;17(6):em237. [Crossref]
- Tekin Atay T, Dincer NN, Uçan Yarkaç F, Öncü E. COVID-19 pandemi sürecinde diş hekimliği uzmanlık öğrencilerinin korku ve anksiyete düzeylerinin değerlendirilmesi [Evaluation of fear and anxiety levels of postgraduate students in dentistry during COVID-19 pandemic]. *Necmettin Erbakan Üniversitesi Diş Hekimliği Dergisi*. 2020;2(3):86-93. [Crossref]
- Duman N. Üniversite öğrencilerinde COVID-19 korkusu ve belirsizliğe tahammülsüzlük [COVID-19 fear and intolerance to uncertainty in university students]. *The Journal of Social Science*. 2020;4(8):426-37. [Crossref]
- Ladikli N, Bahadır E, Yumuşak FN, Akkuzu H, Karaman G, Türkkan Z. Covid-19 Korkusu Ölçeği'nin Türkçe güvenilirlik ve geçerlik çalışması [The reliability and validity of Turkish version of Coronavirus Anxiety Scale]. *International Journal of Social Science*. 2020; 3(2):71-80. [Link]
- Kwok KO, Li KK, Chan HHH, Yi YY, Tang A, Wei WI, et al. Community responses during early phase of COVID-19 epidemic, Hong Kong. *Emerg Infect Dis*. 2020;26(7):1575-9. [Crossref] [PubMed] [PMC]
- Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res*. 2020;287:112934. [Crossref] [PubMed] [PMC]
- Wang C, Cheng Z, Yue XG, McAleer M. Risk management of COVID-19 by universities in China. *Journal of Risk and Financial Management*. 2020;13(2):36. [Crossref]
- Lee J. Mental health effects of school closures during COVID-19. *Lancet Child Adolesc Health*. 2020;4(6):421. Erratum in: *Lancet Child Adolesc Health*. 2020. [Crossref] [PubMed] [PMC]
- Cıfci F, Demir A. COVID-19 pandemisinde Türk profesyonel futbolcuların COVID-19 korkusu ve kaygı düzeylerinin incelenmesi [Examination of COVID-19 fear and anxiety levels of Turkish football players in the COVID-19 pandemic]. *Spor ve Rekreasyon Araştırmaları Dergisi*. 2020;2(1):26-38. [Link]
- Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr*. 2020;52:102066. [Crossref] [PubMed] [PMC]
- Askin R, Bozkurt Y, Zeybek Z. COVID-19 pandemisi: Psikolojik etkileri ve terapötik müdahaleler [COVID-19 pandemic: psychological effects and therapeutic interventions]. *İstanbul Ticaret Üniversitesi Sosyal Bilimler Dergisi*. 2020;19(37): 304-18. [Link]
- Dogan MM, Duzel B. COVID-19 özelinde korku-kaygı düzeyleri [Fear-anxiety levels in COVID-19]. *Electronic Turkish Studies*. 2020;15(4): 739-52. [Crossref]
- Kurtuncu M, Kurt A. COVID-19 pandemisi döneminde hemşirelik öğrencilerinin uzaktan eğitim konusunda yaşadıkları sorunlar [Problems of nursing students in distance education in the COVID-19 pandemia period]. *Avrasya Sosyal ve Ekonomi Araştırmaları Dergisi*. 2020;7(5):66-77. [Link]