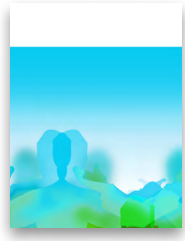
JOURNAL OF
PSYCHIATRIC NURSING

DOI: 10.14744/phd.2022.45712
J Psychiatric Nurs 2022;13(2):139-149



Original Article

Examination of the psychosocial effects of the coronavirus 2019 (COVID-19) pandemic

Nurhayat Kılıç Bayageldi

Department of Psychiatric Nursing, Artvin Çoruh University Faculty of Health Sciences, Artvin, Türkiye

Abstract

Objectives: A pandemic can have multiple psychosocial effects. This web-based, cross-sectional study analyzed psychosocial effects of the coronavirus disease 2019 (COVID-19) pandemic on Turkish society.

Methods: The research data were collected electronically via an online questionnaire platform using a personal information form, a form that requested information about experiences during the COVID-19 pandemic, and the Depression, Anxiety, Stress Scale-42 (DASS-42). A total of 1420 individuals participated in the study. Descriptive statistical methods (number, percentage, mean, SD) were used to assess the data. The Mann-Whitney U test was used to compare quantitative data between 2 groups and the Kruskal-Wallis test was used for comparisons of >2 groups. Multiple comparison tests were performed to examine differences.

Results: It was determined that 44.8% of the participants experienced mild depression, 36.1% had moderate anxiety, and 40.8% displayed moderate stress. Demographic characteristics of gender, age, marital status, educational and occupational status revealed differences in depression, anxiety, and stress values ($p<0.05$). Individual experiences during the COVID-19 pandemic were also associated with differences in terms of depression, stress and anxiety ($p<0.01$).

Conclusion: The COVID-19 pandemic had clear psychological, economic, social, and behavioral effects that may have a lasting impact on society.

Keywords: Anxiety; coronavirus; depression; pandemic; psychosocial effects; stress.

What is presently known on this subject?

- The outbreak of coronavirus disease 2019 (COVID-19) quickly became a global pandemic. Fear related to a previously unknown and potentially deadly virus as well as measures implemented to control the spread of infection had widespread effects, including multiple psychosocial consequences at the individual, family, and societal levels.

What does this article add to the existing knowledge?

- The extensive changes to daily life brought on by the COVID-19 pandemic had economic and psychosocial effects, including mild to moderate levels of depression, anxiety, and stress.

What are the implications for practice?

- Determining the psychosocial effects of the COVID-19 pandemic is very important in order to be prepared to provide necessary and appropriate intervention. The consequences may be long-lasting. Empowering individuals to manage symptoms and disorders is important to ensuring healthy individual and societal function.

Severe acute respiratory syndrome coronavirus 2 (SARS CoV 2) is a strain of coronavirus that causes coronavirus disease 2019 (COVID-19). The virus first emerged in China in late 2019 and spread rapidly, leading to a significant number of deaths and widespread disruption. The World Health Organization declared COVID-19 a pandemic just a few months after the outbreak.[1–3] In response, countries around the world implemented a variety of comprehensive measures intended to control the spread of infection, such as restrictions on group gatherings, curfews, travel restrictions, contact tracing, and emergency response programs.[4,5] Nonetheless, the virus spread and the number of those infected grew. As this was a new virus, there was particular uncertainty and anxiety, intense media coverage, and abrupt changes to ordinary activities. Worry about becoming infected with this novel and

Address for correspondence: Nurhayat Kılıç Bayageldi, Artvin Çoruh Üniv. Sağ. Bilim. Fakültesi, Psikiyatri Hemşireliği Anabilim Dalı, Türkiye
Phone: +90 000 000 00 00 **E-mail:** nurhayatkilic@yahoo.com **ORCID:** 0000-0002-2790-5227

Submitted Date: May 06, 2021 **Accepted Date:** January 05, 2022 **Available Online Date:** August 04, 2022

potentially deadly virus and a variety of sudden changes in lifestyle, including isolation measures and in some cases loss of income, had effects on psychological health.[6–12]

Studies of the COVID-19 pandemic have shown that many symptoms of mental disorders, such as depression, anxiety, post-traumatic stress disorder, sleep disorders, obsessive-compulsive disorder, avoidance behaviors, and social withdrawal, have been observed.[1,8,10,13–16] It has even been reported that the long-term mental health effects may be more dangerous than the virus itself.[17–19] Other studies have also noted significant and lasting effects on national economies. The sudden inability to work due to a pandemic can lead to significant individual economic losses and associated anxiety and other mental health concerns.[17,19] In the context of an unpredictable and rapidly spreading pandemic, some individuals may also experience behavioral disorders. Faced with uncertainty and restrictions, some individuals may be sufficiently worried to overstock items such as food, medicine, disinfectant, masks, toilet paper, and cleaning products.[17] In addition, anxiety about becoming infected can lead to stigmatization and discrimination.[17,20,21] Individuals who become sick during a pandemic may be exposed to significant stigma and rejection, even after recovery.[22] The effects of stigma due to disease have previously been reported to continue for many years.[23–25]

As a result, the uncertainty and difficulty related to the COVID-19 pandemic, including limitations to social interaction and the risk of economic loss created or contributed to a variety of potential sources of insecurity that are both economic and psychosocial.[26] Studies are needed to determine the psychosocial effects of the COVID-19 pandemic worldwide. This study is a contribution to the literature related to the investigation of the effects of the pandemic and was designed help with efforts to address the existing consequences as well as prepare for future events.

Materials and Method

Ethical Considerations

The ethics committee of Artvin Çoruh University granted approval for this study on May 8, 2020 (no: 2020/7) and online consent was obtained from the participants.

Study Design

This study was conducted as a web-based cross-sectional study due to the isolation measures in place to prevent the spread of the virus. The data were collected electronically between May 9 and July 16, 2020 via an online survey platform (Google Forms; Google LLC, Mountain View, CA, USA). The link to the data collection form was widely distributed via e-mail, Facebook, and WhatsApp (Facebook Inc./Meta Platforms, Inc., Menlo Park, CA, USA). The researchers wrote and shared a description of the study with contacts, various associations, and social media page managers who also shared the link to the study, which provided a brief explanation as well as the assessment tools. A total of 1420 individuals participated. The respondents provided demographic data, information about their experiences during the COVID-19 pandemic, and completed the Depression, Anxiety, Stress Scale-42 (DASS-42).

Study Population and Sample

The aim was to reach as many individuals as possible; no sample was selected. Adults in Turkey aged ≥18 years who had Internet access and agreed to participate were included in the study. A total of 1420 responses were returned and analyzed.

Data Collection Tools

The research data were collected using a personal data form, a form requesting information about the individuals' experiences during the COVID-19 pandemic, and the DASS-42 scale.

Personal Information Form

The personal information form used was created by a researcher based on a review of the relevant literature to determine the demographic characteristics of age, gender, marital status, educational status, and occupation.

Information Form About COVID-19 Pandemic Experience

Participants were asked to respond to 10 questions related to their attitudes and experience during the COVID-19 pandemic: frequency of following developments on television or social media, sleep patterns, eating habits, inclination to stock up on basic supplies, hygiene habits, physical distancing and relationships, family relations, economic conditions, and attitudes about a diagnosis of COVID-19.

Depression, Anxiety, Stress Scale-42

The DASS-42 was developed by Lovibond and Lovibond and adapted for use with a Turkish study group by Akın and Çetin.[27] The instrument consists of 42 items, 14 of which are related to depression, 14 to stress, and 14 to anxiety experienced in the previous week. Items 3, 5, 10, 13, 16, 17, 21, 24, 26, 31, 34, 37, 38, and 42 measure the level of depression; items 1, 6, 8, 11, 12, 14, 18, 22, 27, 29, 32, 33, 35, and 39 measure the respondent's stress level; and items 2, 4, 7, 9, 15, 19, 20, 23, 25, 28, 30, 36, 40, and 41 measure the level of anxiety. The scale uses a 4-point Likert-type rating: 0=never/does not apply to me at all, 1=sometimes/applies to me to some degree, 2=quite often/applies to me to a considerable degree, and 3=most of the time/applies to me very much. No items are reverse-scored. A high score in any of the dimensions (depression, anxiety, and stress) suggests greater severity or frequency of these negative emotional symptoms. The maximum score for each subdimension is 42.

Data Analysis

The data were analyzed using IBM SPSS Statistics for Windows, Version 25.0 software (IBM Corp., Armonk, NY, USA). Descriptive statistics (number, percentage, mean, SD) were used to evaluate and present the data. Conformity to normality tests and platykurtic distribution-skew distribution was used to assess the data. The analysis indicated that the assumption of normal distribution was not present (p>0.05). The Mann-Whitney U test was used to compare quantitative data between 2 groups. The Kruskal-Wallis test was used to compare quantitative data between >2 groups. A multiple comparison test was conducted to further analyses of differences. The reliability coefficient of the DASS-42 scale in this study was determined to be α=0.940 for the depression subscale, α=0.926 for the anxietya subscale, and α=0.944 for stress subscale, and α=0.968 for the total scale score.

Results

Table 1 demonstrates the demographic characteristics of the study participants. In all, 59.7% were female, 53% were married, 26.0% were ≥41 years of age, 56.6% had a university undergraduate education, and 47.6% were public sector employees.

Table 1. Sociodemographic characteristics of the participants (n=1420)

	n	%
Age (years)		
≤24	349	24.6
25-32	354	24.9
33-40	348	24.5
≥41	369	26.0
(Mean±SD)	33.62±11.18 (min-max:15-70)	
Sex		
Female	848	59.7
Male	572	40.3
Marital status		
Married	753	53.0
Not married	667	47.0
Education level		
Primary school	118	8.3
High school	309	21.8
Undergraduate	804	56.6
Postgraduate	189	13.3
Occupation		
Not employed	94	6.6
Student	211	14.9
Public sector employee	676	47.6
Private sector employee	199	14.0
Self-employed	112	7.9
Retired	33	2.3
Housewife	95	6.7
Total	1420	100.0

The responses of participants regarding their experiences during the pandemic are provided in Table 2. Among the findings, it was determined that 38.6% frequently followed the developments related to COVID-19 on television or social media, 42.6% replied that they had difficulty sleeping/were sleeping less than prior to the pandemic, 51.0% did not see a change in their eating habits, 55.8% reported some stockpiling of basic necessities, 61.5% indicated that they had increased their cleaning efforts, 59.1% indicated that physical distancing and social isolation practices did not lead to a change in their relationships with their loved ones, 48.7% observed no change in their family relationships, 51.4% experienced no change in economic status, 44.8% said that they would hide a positive COVID-19 diagnosis from those close to them, and 40.1% responded that they would not want to meet with someone who had been diagnosed with the disease.

Table 3 shows the prevalence of depression, anxiety, and stress in the study participants. In all, 44.8% experienced mild depression, 36.1% demonstrated moderate anxiety, and 40.8% had moderate stress.

The DASS-42 subdimension scores for depression, anxiety, and stress are given in Table 4. The mean depression score was 11.42±6.80 (min-max: 0.00–-42.00), the mean anxiety score was 12.84± 7.42 (min-max: 0.00–-42.00), and the mean stress subscale score was 16.20±9.60 (min-max: 0.00–-42.00).

Table 5 presents a comparison of the median depression, anxiety, and stress values according to demographic variables. The results were significantly different when examined by gender: all of the subscore values were higher among female participants (p<0.05). Marital status also revealed a significant difference: those who were not married had higher depression, anxiety, and stress scores (p<0.05). The median DASS-42 score of participants aged ≤24 years was also significantly higher than that of other age groups (p<0.05). The median values depression and stress scores of undergraduate graduates were significantly higher than those of postgraduate graduates (p<0.05). The median anxiety value was not significantly different according to education level (p>0.05). Employment status also revealed significant differences: the median depression, anxiety, and stress values of students and those who were unemployed were higher (p<0.05).

Table 6 provides a comparison of experiences during the COVID-19 pandemic and the DASS-42 scores. Participants who followed developments about COVID-19 on television or social media frequently had higher depression, anxiety, and stress values (p<0.01). Participants who followed the developments about COVID-19 on television or social media constantly had the stress values (p<0.01). Individuals who had decreased/disrupted sleep also demonstrated higher levels of depression, anxiety, and stress (p<0.01). Those who reported eating more since the pandemic also had higher depression,

Table 2. Participant experiences during the COVID-19 pandemic (n=1420)

		n	%
How often do you follow developments about COVID-19 on television or social media?	Never[1]	28	2.0
	Occasionally[2]	401	28.2
	Frequently[3]	548	38.6
	Constantly[4]	443	31.2
How would you evaluate your sleep pattern since the COVID-19 pandemic?	No change[1]	332	23.4
	I sleep more than before[2]	483	34.0
	I sleep less than before; I wake up frequently at night[3]	605	42.6
How would you evaluate your diet since the COVID-19 pandemic?	No change[1]	724	51.0
	I eat more than before[2]	527	37.1
	I eat less than before[3]	169	11.9
Have you stocked up on essential supplies since the COVID-19 pandemic?	No[1]	588	41.4
	Somewhat[2]	792	55.8
	A lot[3]	40	2.8
How would you evaluate your cleaning habits since the COVID-19 pandemic?	No change[1]	477	33.6
	Significant increase[2]	873	61.5
	Decreased[3]	14	1.0
	Partial increase[4]	56	3.9
How have physical distance and social isolation measures affected your relationships with loved ones?	No change[1]	839	59.1
	I miss them; I feel lonely[2]	327	23.0
	Improved[3]	254	17.9
How would you evaluate your family relationships since the COVID-19 pandemic?	No change[1]	692	48.7
	Stronger[2]	477	33.6
	Tense/conflicts[3]	251	17.7
How would you evaluate your economic situation since the COVID-19 pandemic?	No change[1]	730	51.4
	Economic status increased[2]	232	16.4
	Economic status decreased[3]	458	32.2
If I am diagnosed with COVID-19, I will hide it from those around me.	Yes[1]	636	44.8
	No[2]	359	25.3
	I don't know[3]	425	29.9
If I have a relative/acquaintance diagnosed with COVID-19, I will not meet with her/him again.	Yes[1]	570	40.1
	No[2]	474	33.4
	I don't know[3]	376	26.5
Total		1420	100.0

Table 3. Prevalence and severity levels of depression, anxiety, and stress (n=1420)

DASS-42 scale severity level	Depression n (%)	Anxiety n (%)	Stress n (%)
Normal	140 (9.9)	125 (8.8)	328 (23.1)
Mild	636 (44.8)	293 (20.6)	264 (18.6)
Moderate	281 (19.8)	513 (36.1)	579 (40.8)
Severe	238 (16.8)	308 (21.7)	180 (12.7)
Extremely severe	125 (8.8)	181 (12.7)	69 (4.9)

DASS-42: Depression, Anxiety, and Stress Scale.

Table 4. Depression, Anxiety, and Stress Scale Mean Scores (n=1420)

DASS-42 scale subdimensions	Min	Max	Mean	SD
Depression	0.00	42.00	11.42	6.80
Anxiety	0.00	42.00	12.84	7.42
Stress	0.00	42.00	16.20	9.60

DASS-42: Depression, Anxiety, and Stress Scale.

anxiety, and stress values (p<0.01). In addition, it was observed that participants who engaged in stockpiling of supplies and additional cleaning had higher depression, anxiety, and stress values (p<0.01).

The depression, anxiety, and stress level values of individuals who expressed a feeling of loneliness following the implemen-

Table 5. Depression, Anxiety, and Stress Median values according to demographic variables

Demographic variables	Depression	Anxiety	Stress
	Med (Min-Max)	Med (Min-Max)	Med (Min-Max)
Sex			
Female	22.00 (0.00-41.0)	18.00 (0.00-38.00)	20.00 (0.00-42.00)
Male	13.00 (0.00-42.0)	14.00 (0.00- 42.00)	12.00 (0.00-42.00)
U	-5.523	-5.749	-7.301
p	**0.000**	**0.000**	**0.000**
Marital status			
Married	17.00 (0.00-42.00)	14.00 (0.00-42.00)	16.00 (0.00-40.00)
Not married	18.00 (0.00-41.00)	20.00 (0.00-39.00)	19.00 (0.00-42.00)
U	-5.792	-4.654	-5.645
p	**0.000**	**0.000**	**0.000**
Age (years)			
≤24[1]	12.00 (0.00-41.00)	7.00 (0.00-39.00)	14.00 (0.00-42.00)
25-32[2]	7.00 (0.00-42.00)	5.00 (0.00-42.00)	9.00 (0.00-42.00)
33-40[3]	6.50 (0.00- 42.00)	4.00 (0.0- 42.00)	9.00 (0.00-38.00)
≥41[4]	7.00 (0.00-42.00)	4.00 (0.00-42.00)	9.00 (0.00-41.00)
KW	47.966	28.611	52.185
p	**0.000**	**0.008**	**0.000**
Post hoc	**1>2,3,4**	**1>2,3,4**	**1>2,3,4**
Education level			
Primary school[1]	9.00 (0.00-42.00)	7.00 (0.00-42.00)	10.00 (0.00-42.00)
High school[2]	11.00 (0.00-41.00)	8.00 (0.00-35.00)	11.00 (0.00-40.00)
Undergraduate[3]	12.00 (0.00-41.00)	9.00 (0.00-42.00)	11.00 (0.00-42.00)
Postgraduate[4]	6.00 (0.00-38.00)	4.00 (0.00-35.00)	9.00 (0.00-40.00)
KW	10.184	5.510	9.777
p	**0.017**	0.138	**0.021**
Post hoc	**3>4**	----	**3>4**
Occupation			
Unemployed[1]	17.00 (0.00-42.00)	13.00 (0.00-42.00)	15.00 (0.00-40.00)
Student[2]	16.00 (0.00-42.00)	14.00 (0.00-41.00)	12.00 (0.00-42.00)
Public sector employee[3]	10.00 (0.00-42.00)	8.00 (0.00-42.00)	10.00 (0.00-42.00)
Private sector employee[4]	11.00 (0.00-38.00)	7.00 (0.00-42.00)	9.00 (0.00-42.00)
Self-employed[5]	12.00 (0.00-42.00)	8.00 (0.00-40.00)	8.00 (0.00-42.00)
Retired[6]	10.00 (0.00-41.00)	9.00 (0.00-42.00)	7.00 (0.00-36.00)
Housewife[7]	10.00 (0.00-42.00)	7.00 (0.00-39.00)	8.00 (0.00-42.00)
KW	34.922	18.219	20.020
p	**0.012**	**0.004**	**0.027**
Post hoc	**1,2>3,4,5,6,7**	**1,2>3,4,5,6,7**	**1,2>3,4,5,6,7**

tation of physical distancing and social isolation were significantly higher (p<0.01). Participants who reported a decrease in their economic status since the pandemic also had higher depression, anxiety, and stress values (p<0.01). The depression, anxiety, and stress values of those who said they would conceal a positive COVID-19 diagnosis were higher than those of the respondents who said they would not hide it (p<0.01) and those who said that they would not meet with a relative/acquaintance diagnosed with COVID-19 or did not know if they would high depression, anxiety, and stress values (p<0.01).

Discussion

The Prevalence of Depression, Anxiety, and Stress

The results revealed a mildly high rate of depression. Wang et al.[16] found that the participants in their study reported moderate to severe symptoms of depression, and Cellini et al.[29] observed moderate to extremely severe symptoms of depression. Other research has yielded normal levels of depression symptoms during the COVID-19 pandemic.[10,28] In the study was determined a moderate level of anxiety. In the literature,

Table 6. Comparison of experiences during the COVID-19 pandemic and DASS-42 scale results

Participant experiences during the COVID-19 pandemic	Response	Depression			Anxiety			Stress		
		KW	p	Post hoc	KW	p	Post hoc	KW	p	Post hoc
How often do you follow developments about COVID-19 on television or social media?	Never[1] Occasionally[2] Frequently[3] Constantly[4]	16.939	0.001	3>2,1	13.599	0.004	3>2,1	26.577	0.001	3,4>1, 2
How would you evaluate your sleep pattern since the COVID-19 pandemic?	No change[1] I sleep more than before[2] I sleep less than before; I wake up frequently at night[3]	110.201	0.000	3>1,2	105.894	0.000	3>1,2	122.243	0.000	3>1,2
How would you evaluate your diet since the COVID-19 pandemic?	No change[1] I eat more than before[2] I eat less than before[3]	106.871	0.000	2>1	128.374	0.000	2>1	119.686	0.000	2>1
Have you stocked up on essential supplies since the COVID-19 pandemic?	No[1] Somewhat[2] A lot[3]	29.912	0.000	2,3>1	44.938	0.000	2,3>1	39.414	0.000	2,3>1
How would you evaluate your cleaning habits since the COVID-19 pandemic?	No change[1] Significant increase[2] Decreased[3] Partial increase[4]	54.338	0.000	2>1,3,4	59.577	0.000	2>1,3,4	68.156	0.000	2>1,3,4
How have physical distancing and social isolation measures affected your relationships with loved ones?	No change[1] I miss them; I'm getting lonely[2] Improved[3]	89.635	0.000	3>2,1	80.298	0.000	3>2,1	118.873	0.000	3>2,1
How would you evaluate your family relationships since the COVID-19 pandemic?	No change[1] Stronger[2] Tense/conflicts[3]	91.154	0.100	.....	80.305	0.640	.....	120.094	0.212	.....
How would you evaluate your economic status since the COVID-19 pandemic?	No change[1] Increase[2] Decrease[3]	41.348	0.000	3>1,2	41.539	0.000	3>1,2	45.464	0.000	3>1,2
If I am diagnosed with COVID-19, I will hide it from those around me.	Yes[1] No[2] Don't know[3]	21.126	0.000	1>2	22.653	0.000	1>2	19.419	0.000	1>2
If I have a relative/acquaintance diagnosed with COVID-19, I will not meet with them anymore.	Yes[1] No[2] Don't know[3]	10.321	0.006	1,3>2	8.104	0.006	1,3>2	12.426	0.006	1,3>2

authors have noted anxiety due to the pandemic that was normal,[10,28] moderate to severe,[16,30] and moderate to extremely severe.[29] In this study, the findings indicated a moderate level of stress symptoms. Other reports from around the world have recorded levels that were normal,[10,28] moderate to severe,[16,30] and moderate to extremely severe.[29]

Symptoms of unease can be expected during a pandemic. Wang et al.[16] noted that a lower level of psychological symptoms was related to accurate and timely information about drugs, vaccines, transmission routes of the virus, and the number of patients who became infected and how many recovered. Furthermore, individual protective measures, such as hygiene practices and the use of masks to prevent the spread of the virus, may be associated with lower levels of depression, anxiety, and stress. Ozamiz-Etxebarria et al.[31] noted that lower symptoms of depression, anxiety, and stress in their study compared with those seen in a Chinese study may have been related to the emergence of the outbreak in China, seen as far away by Spanish respondents, or that the benefit of time to learn about the virus may have contributed to the results. Tee et al.[30] reported that adequate health information, individual perception of well-being, and trust in doctors were associated with fewer psychological effects. It has been observed previously in the literature that it is important for the government and health authorities to provide accurate and up-to-date information.[16]

Various restrictions were imposed on social life and activity in Türkiye to reduce the spread of the virus. In addition, a scientific committee was established in this country that provided regular information to the public about the virus.[32] Health authorities also provided regular updates on details such as the reported number of cases, the number of patients who had died, the number of those infected, and the latest developments regarding the virus. These measures may have contributed to reducing the psychological effects of the COVID-19 pandemic in this country.

It is important to plan initiatives to address the psychological effects due to the pandemic and reduce the incidence of symptoms and disorders as an element of primary prevention. Efforts to increase the capacity of the individual, the family, and society to cope with stressful circumstances will benefit all and encourage growth and success. Psychiatric nurses, as always, played a key role during the pandemic as part of mental health screening teams, and will continue to do so moving forward; it should not be forgotten that psychosocial effects of the pandemic may be long-lasting.[33,34]

The results of this study indicated that the median depression, anxiety, and stress values of females were higher than those of males (Table 5). This is not uncommon.[10,16,28,30,35] Rehman et al.[36] found that while female participants' depression, stress, and anxiety scores were higher, it was not statistically significant. Other studies have found that the anxiety levels of men were higher than those of women, or that there was no significant difference in the depression and stress levels based on gender.[14,37] In general, women have often been reported to be more vulnerable to stress and anxiety. This may be the result of numerous factors. However, during the pandemic, these may have included additional circumstances such as increased social isolation due to restrictions, an increased workload at home, and other pressures of stay-at-home orders that may have led to tension and conflicts.

The depression, anxiety, and stress values of single individuals in this study were higher than those of married participants (Table 5). Tee et al.[30] determined in their study that single respondents demonstrated significantly higher depression, anxiety, and stress scores. Other research in the literature has suggested that marital status was related to depression, anxiety, and stress levels,[28] and studies have also indicated that there was no significant difference based on marital status in terms of depression, anxiety, and stress scores.[10,14] While in some cases, the pandemic restrictions and effects may have added to difficulties in relationships, it may be that in some instances, the pandemic reinforced togetherness and those who were not alone had access to emotional support and a greater sense of economic security, whereas isolation contributed to difficulty for those who were living alone.

The depression and stress score values of undergraduates were higher than those of respondents with a higher degree (Table 5). In the literature, individuals with high education levels have been found to have higher levels of depression, anxiety, and stress related to the COVID-19 pandemic,[10,38] while in another study, there was a relationship between a low education level and high levels of depression, anxiety, and stress.[16] Goularte et al.[39] also observed that there is a strong relationship between a low education level and susceptibility to depression, anxiety, and stress. Those with a higher level of education may experience more symptoms of mental health distress as a result of greater access to information and a higher awareness of their own health and the difficulties caused by the pandemic.[10]

In this study, individuals aged <24 years had higher depression, anxiety, and stress scores (Table 5). Although some studies in the literature have indicated that there was no relationship between age and depression, anxiety, and stress values,[10,14] other authors have similarly found that younger respondents had higher levels of depression, anxiety, and stress.[31,35] Tee et al.[30] stated in their study that individuals in the 12-21.4 age group had significantly higher depression, anxiety, and stress scores. Al Banna et al.[28] stated in their study that those aged ≥ 40 had a high level of anxiety symptoms, while individuals aged ≤23 demonstrated a high level of depressive symptoms. High depression, anxiety, and stress score in young individuals may be related to the fact that they access information more frequently and were more affected by some of the restrictions implemented (e.g., curfews, face-to-face education ban). Older individuals' concerns awareness and concern about their own health and the health of their loved ones may have contributed to the intensity of the symptoms reported in this group.

The findings in this study indicated that those who were unemployed and students had high depression, anxiety, and stress scores (Table 5). Kamal and Othman[10] noted in their research that the prevalence of depression was high among unemployed individuals and students, and Al Banna et al.[28] also found that the unemployed experienced greater stress. Verma and Mishra[14] observed that employment status was significantly associated with depression and anxiety. Concern about meeting their daily needs and uncertainty and insecurity about the future could contribute to depression, anxiety, and stress among the unemployed. In contrast, another study found no relationship between employment status and stress rate.[35] Various factors may have contributed to greater depression, anxiety, and stress in students, including younger age, weak psychological resilience, quarantine measures and restrictions on social life, the termination of face-to-face education and difficulties associated with the transition to online education, and disruption to or concerns about plans for the future.

The DASS-42 Scale Results and Individual Experiences

Individuals who followed the pandemic developments frequently on television or social media demonstrated high depression, anxiety, and stress scores (Table 6). Gao et al.[8] reported a positive relationship between the frequency of exposure to social media and mental health symptoms during the COVID-19 pandemic process, noting that individuals who accessed social media excessively demonstrated greater anxiety and depression. Bendau et al.[40] also determined a positive relationship between the frequency of media exposure and depression symptoms, specific anxiety, and COVID-19-related anxiety symptoms. The findings of our study were consistent. Social media can be helpful, but excessive or undiscriminating use can lead to information overload, including consumption of false content, and may engender the growth and spread of negative emotions such as anxiety, panic, and fear

Individuals who reported sleeping less than before since the COVID-19 pandemic had higher depression, stress, and anxiety scores than other study participants (Table 6). Cellini et al.[29] observed that their sleep patterns changed significantly during the COVID-19 pandemic, resulting in in poorer sleep quality. The authors also found that sleep problems were more intense in those with high levels of depression, anxiety, and stress symptoms. Others have also remarked on a relationship between sleep and depression, anxiety, and stress during the pandemic.[15,41] Li et al.[42] indicated that insomnia was common and that there was a relationship between insomnia and psychological symptoms. Priego-Parra et al.[43] also observed an association between depression and anxiety. It is not surprising that the myriad difficulties and uncertainty caused by the COVID-19 pandemic affected sleep quality. Excessive use of electronic devices may also have added to sleep disruptions.

Respondents who reported changes in their diet due to the COVID-19 pandemic had significantly higher depression, anxiety, and stress scores (Table 6). Other researchers have observed changes in eating behavior during the COVID-19 pandemic and a relationship to anxiety symptoms.[44–48] Di Renzo et al.[48] described participants recounting that participants ate more to relieve feelings of depression and anxiety. Şimşek and Şen[49] also reported findings of changes in eating behavior, including increased emotional eating and uncontrolled eating. The depression, anxiety, and stress experienced during the COVID-19 pandemic appear to have had an effect on eating behaviors.

Individuals who reported storing extra supplies of basic necessities had higher depression, anxiety, and stress scores compared with those who did not elect to stock up (Table 6). Reports in the literature have remarked that a tendency to stockpile increased during the COVID-19 pandemic as a result of intense anxiety.[50,51] Some people experienced fear of uncontrolled spread of the virus and subsequent effects on society and the ability to meet basic needs, which prompted a desire to be prepared.[17] Keane and Neal[52] noted that it is not uncommon to stock more consumer goods in times of natural disaster or crisis. The new and particular uncertainties during the COVID-19 pandemic likely added to this tendency.

Excessive cleaning habits during the COVID-19 pandemic were also associated with higher levels of depression, anxiety, and stress in this study (Table 6). Literature findings reveal other examples of increased hygiene practices during the pandemic and a relationship between a high anxiety level and intense efforts to ensure hygiene.[53,54] Bults et al.[55] stated that high anxiety was significantly associated with adopting preventive measures and hygiene practices such as washing hands more frequently, using handkerchiefs when coughing or sneezing, and wearing a face mask during the influenza A (H1N1) outbreak.

In this study, the depression scores of individuals who expressed a sentiment of feeling lonely due to isolation and separation from loved ones were significantly higher (Table 6). Killgore et al.[56] observed greater loneliness during COVID-19 restrictions and a relationship between loneliness and depression. It was also stated in the same study that social isolation can increase loneliness. Other research has similarly found increased loneliness during the pandemic and that loneliness was a risk factor for depression and anxiety.[57,58] The inability to be with friends and loved ones due to pandemic restrictions could be expected to add to depression, anxiety, and stress.

Reduced economic status was also found to be related to higher depression, anxiety, and stress scores (Table 6). Lei et al.[19] found that those who did not experience economic loss during the COVID-19 pandemic had lower levels of anxiety and depression than other groups. A poor or tenuous economic situation and unemployment has been reported to be an important risk factor for symptoms of mental health disorders, and particularly depression.[8,19,59] However, Al Banna et al.[28] observed that individuals with a higher income experienced more stress symptoms. In this study, economic security may have been a protective factor for some of the participants.

The findings in this study revealed significantly higher depression, anxiety, and stress values among individuals who said that if I had a relative/acquaintance diagnosed with COVID-19 they would never see them again (Table 6). Psychological problems related to stigma are not unexpected.[18] The easy transmission of the disease, fear of infection, and intense public anxiety are potential contributing factors.[20] Stigmatization has been observed in studies of previous outbreaks of infectious disease and has been associated with psychological difficulties.[60] The easy transmission of the virus that causes COVID-19 and the associated mortality rate likely contributed to anxiety levels.

The depression, anxiety, and stress scores of individuals who said that they would not disclose a positive COVID-19 diagnosis to those around them, as well as those respondents who were unsure of their reaction, were higher than those who replied that they would not hide the diagnosis (Table 6). Fear of stigmatization and rejection may have been a factor in the responses.[18] Stigmatizing behaviors can have a significant influence on mental health. Bai et al.[61] reported that healthcare workers said that people in their neighborhood stigmatized and avoided them because they worked in a hospital during a SARS outbreak.

Conclusion

The COVID-19 pandemic has had and will continue to have multiple economic and psychosocial effects. Psychiatric nurses are important members of the team that can help individuals resolve psychosocial problems. They can identify risk factors, determine the physical and psychological effects, and help provide for a successful recovery from traumatic events. It is important to provide psychiatric nurses and others with adequate awareness of the potential psychosocial outcomes of the COVID-19 pandemic and other disasters in order to be prepared and ensure individual and social resilience.

The results of this study and others worldwide indicate that the COVID-19 pandemic has led to symptoms of depression, anxiety, and stress in society. Programs to screen groups at high risk, such as women and vulnerable groups in the population, could be very useful to resolve effects of the extraordinary conditions and prevent lingering unresolved symptoms and perhaps more severe outcomes. Enhanced resiliency, coping skills, and other tools could provide broad benefit to individuals in their daily lives and to the general public. Additional studies are also recommended to further explore and determine precise needs, lasting effects, and effective intervention strategies.

Conflict of interest: There are no relevant conflicts of interest to disclose.

Peer-review: Externally peer-reviewed.

References

1. Li W, Yang Y, Liu ZH, Zhao YJ, Zhang Q, Zhang L, et al. Progression of mental health services during the COVID-19 outbreak in China. Int J Biol Sci 2020;16:1732–8.
2. Williamson EJ, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE, et al. Factors associated with COVID-19-related death using OpenSAFELY. Nature 2020;584:430–6.
3. World Health Organization. WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March. Available at: https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020. Accessed May 27, 2022.
4. Al-Awadhi AM, Alsaifi K, Al-Awadhi A, Alhammadi S. Death and contagious infectious diseases: Impact of the COVID-19 virus on stock market returns. J Behav Exp Finance 2020;27:100326.
5. Laing T. The economic impact of the Coronavirus 2019 (Covid-2019): Implications for the mining industry. Extr Ind Soc 2020;7:580–2.
6. Bao Y, Sun Y, Meng S, Shi J, Lu L. 2019-nCoV epidemic: Address mental health care to empower society. Lancet 2020;395:e37–8.
7. 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.
8. Gao J, Zheng P, Jia Y, Chen H, Mao Y, Chen S, et al. Mental health problems and social media exposure during COVID-19 outbreak. PLoS One 2020;15:e0231924.
9. González-Sanguino C, Ausín B, Castellanos MÁ, Saiz J, López-Gómez A, Ugidos C, et al. Mental health consequences during the initial stage of the 2020 Coronavirus pandemic (COVID-19) in Spain. Brain Behav Immun 2020;87:172–6.
10. Kamal NM, Othman N. Depression, anxiety, and stress in the time of COVID-19 pandemic in Kurdistan region, Iraq. Kurd J App Res 2020;37–44. Available at: https://kjar.spu.edu.iq/index.php/kjar/article/view/492/256. Accessed May 27, 2022.
11. Wang C, Horby PW, Hayden FG, Gao GF. A novel coronavirus outbreak of global health concern. Lancet 2020;395:470–3.
12. Xiao C. A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: Structured letter therapy. Psychiatry Investig 2020;17:175–6.
13. Mucci F, Mucci N, Diolaiuti F. Lockdown and isolation: Psychological aspects of Covid-19 pandemic in the general population. Clin Neuropsychiatry 2020;17:63–4.
14. Verma S, Mishra A. Depression, anxiety, and stress and socio-demographic correlates among general Indian public during COVID-19. Int J Soc Psychiatry 2020;66:756–62.
15. Voitsidis P, Gliatas I, Bairachtari V, Papadopoulou K, Papageorgiou G, Parlapani E, et al. Insomnia during the COVID-19 pandemic in a Greek population. Psychiatry Res 2020;289:113076.
16. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the ınitial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. Int J Environ Res Public Health 2020;17:1729.
17. Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey MJ, Chatterjee S, et al. Psychosocial impact of COVID-19. Diabetes Metab Syndr 2020;14:779–88.
18. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S,

Greenberg N, et al. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. Lancet 2020;395:912–20.
19. Lei L, Huang X, Zhang S, Yang J, Yang L, Xu M. Comparison of prevalence and associated factors of anxiety and depression among people affected by versus people unaffected by quarantine during the COVID-19 epidemic in Southwestern China. Med Sci Monit 2020;26:e924609.
20. Duan W, Bu H, Chen Z. COVID-19-related stigma profiles and risk factors among people who are at high risk of contagion. Soc Sci Med 2020;266:113425.
21. Villa S, Jaramillo E, Mangioni D, Bandera A, Gori A, Raviglione MC. Stigma at the time of the COVID-19 pandemic. Clin Microbiol Infect 2020;26:1450–2.
22. Cava MA, Fay KE, Beanlands HJ, McCay EA, Wignall R. The experience of quarantine for individuals affected by SARS in Toronto. Public Health Nurs 2005;22:398–406.
23. Lee S, Chan LY, Chau AM, Kwok KP, Kleinman A. The experience of SARS-related stigma at Amoy Gardens. Soc Sci Med 2005;61:2038–46.
24. Person B, Sy F, Holton K, Govert B, Liang A; National Center for Inectious Diseases/SARS Community Outreach Team. Fear and stigma: The epidemic within the SARS outbreak. Emerg Infect Dis 2004;10:358–63.
25. Siu JY. The SARS-associated stigma of SARS victims in the post-SARS era of Hong Kong. Qual Health Res 2008;18:729–38.
26. Alyami M, Henning M, Krägeloh CU, Alyami H. Psychometric evaluation of the Arabic version of the fear of COVID-19 scale. Int J Ment Health Addict 2021;19:2219–32.
27. Akın A, Çetin B. Depression, anxiety and stress scale (DASS): The study of validity and reliability. Educ Sci Theory Prac 2007;7:241–68.
28. Banna MHA, Sayeed A, Kundu S, Christopher E, Hasan MT, Begum MR, et al. The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: A nationwide cross-sectional study. Int J Environ Health Res 2022;32:850–61.
29. Cellini N, Canale N, Mioni G, Costa S. Changes in sleep pattern, sense of time and digital media use during COVID-19 lockdown in Italy. J Sleep Res 2020;29:e13074.
30. Tee ML, Tee CA, Anlacan JP, Aligam KJG, Reyes PWC, Kuruchittham V, et al. Psychological impact of COVID-19 pandemic in the Philippines. J Affect Disord 2020;277:379–91.
31. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. Cad Saude Publica [Article in Spanish] 2020;36:e00054020.
32. Varol G, Tokuç B. The evaluation of COVID-19 pandemic course in Turkey in public health aspects. Namık Kemal Med J 2020;8:579–94.
33. Uzun S. Pandemilerde toplum rehabilitasyonunda psikiyatri hemşiresinin yeri. In: Gürhan N, editör. Pandemide Psikiyatri Hemşireliği. 1. Baskı. Ankara: Türkiye Klinikleri; 2020. p.8–11.
34. Pektekin Ç. Covid 19 pandemi döneminde psikiyatri hemşireliğinin önemi. J Psychiatric Nurs 2020;11:163–4.
35. Kazmi SSH, Hasan K, Talib S, Saxena S. COVID-19 and lockdwon: A study on the impact on mental health. SSRN Electron 2020;3577515.
36. Rehman U, Shahnawaz MG, Khan NH, Kharshiing KD, Khursheed M, Gupta K, et al. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. Community Ment Health J 2021;57:42–8.
37. Vahedian-Azimi A, Moayed MS, Rahimibashar F, Shojaei S, Ashtari S, Pourhoseingholi MA. Comparison of the severity of psychological distress among four groups of an Iranian population regarding COVID-19 pandemic. BMC Psychiatry 2020;20:402.
38. Salari N, Mohammadi M, Vaisi-Raygani A, Abdi A, Shohaimi S, Khaledipaveh B, et al. The prevalence of severe depression in Iranian older adult: A meta-analysis and meta-regression. BMC Geriatr 2020;20:39.
39. Goularte JF, Serafim SD, Colombo R, Hogg B, Caldieraro MA, Rosa AR. COVID-19 and mental health in Brazil: Psychiatric symptoms in the general population. J Psychiatr Res 2021;132:32–7.
40. Bendau A, Petzold MB, Pyrkosch L, Mascarell Maricic L, Betzler F, Rogoll J, et al. Associations between COVID-19 related media consumption and symptoms of anxiety, depression and COVID-19 related fear in the general population in Germany. Eur Arch Psychiatry Clin Neurosci 2021;271:283–91.
41. Marelli S, Castelnuovo A, Somma A, Castronovo V, Mombelli S, Bottoni D, et al. Impact of COVID-19 lockdown on sleep quality in university students and administration staff. J Neurol 2021;268:8–15.
42. Li DJ, Ko NY, Chen YL, Wang PW, Chang YP, Yen CF, et al. COVID-19-related factors associated with sleep disturbance and suicidal thoughts among the Taiwanese Public: A Facebook survey. Int J Environ Res Public Health 2020;17:4479.
43. Priego-Parra BA, Triana-Romero A, Pinto-Galvez SM, Ramos CD, Salas-Nolasco O, Reyes MM, et al. Anxiety, depression, attitudes, and internet addiction during the initial phase of the 2019 coronavirus disease (COVID-19) epidemic: A cross-sectional study in Mexico. MedRxiv 2020;202:1–24.
44. Ammar A, Brach M, Trabelsi K, Chtourou H, Boukhris O, Masmoudi L, et al. Effects of COVID-19 home confinement on eating behaviour and physical activity: Results of the ECLB-COVID19 international online survey. Nutrients 2020;12:1583.
45. Sidor A, Rzymski P. Dietary choices and habits during COVID-19 lockdown: Experience from Poland. Nutrients 2020;12:1657.
46. Scarmozzino F, Visioli F. Covid-19 and the subsequent lockdown modified dietary habits of almost half the population in an Italian sample. Foods 2020;9:675.
47. Papandreou C, Arija V, Aretouli E, Tsilidis KK, Bulló M. Comparing eating behaviours, and symptoms of depression and anxiety between Spain and Greece during the COVID-19 outbreak: Cross-sectional analysis of two different confinement strategies. Eur Eat Disord Rev 2020;28:836–46.
48. Di Renzo L, Gualtieri P, Cinelli G, Bigioni G, Soldati L, Attinà A, Bianco FF, et al. Psychological aspects and eating habits dur-

ing COVID-19 home confinement: Results of EHLC-COVID-19 Italian online survey. Nutrients 2020;12:2152.
49. Şimşek M, Şen MA. Change in people's eating behaviour during Covid-19. Gaziantep Univ J Soc Sci 2020;(Special Issue):179–90.
50. Ahmed NJ, Alrawili AS, Alkhawaja FZ. The anxiety and stress of the public during the spread of Novel Coronavirus (COVID-19). J Pharma Res Int 2020;32:54–9.
51. Sim K, Chua HC, Vieta E, Fernandez G. The anatomy of panic buying related to the current COVID-19 pandemic. Psychiatry Res 2020;288:113015.
52. Keane M, Neal T. Consumer panic in the COVID-19 pandemic. J Econom 2021;220:86–105.
53. Głąbska D, Skolmowska D, Guzek D. Population-based study of the influence of the COVID-19 pandemic on hand hygiene behaviors—polish adolescents' COVID-19 experience (PLACE-19) Study. Sustainability 2020;12:4930.
54. Rubin GJ, Amlôt R, Page L, Wessely S. Public perceptions, anxiety, and behaviour change in relation to the swine flu outbreak: Cross sectional telephone survey. BMJ 2009;339:b2651.
55. Bults M, Beaujean DJ, de Zwart O, Kok G, van Empelen P, van Steenbergen JE, et al. Perceived risk, anxiety, and behavioural responses of the general public during the early phase of the Influenza A (H1N1) pandemic in the Netherlands: Results of three consecutive online surveys. BMC Public Health 2011;11:2.
56. Killgore WDS, Cloonan SA, Taylor EC, Miller MA, Dailey NS. Three months of loneliness during the COVID-19 lockdown. Psychiatry Res 2020;293:113392.
57. Benke C, Autenrieth LK, Asselmann E, Pané-Farré CA. Lockdown, quarantine measures, and social distancing: Associations with depression, anxiety and distress at the beginning of the COVID-19 pandemic among adults from Germany. Psychiatry Res 2020;293:113462.
58. Palgi Y, Shrira A, Ring L, Bodner E, Avidor S, Bergman Y, et al. The loneliness pandemic: Loneliness and other concomitants of depression, anxiety and their comorbidity during the COVID-19 outbreak. J Affect Disord 2020;275:109–11.
59. Mazza C, Ricci E, Biondi S, Colasanti M, Ferracuti S, Napoli C, et al. A nationwide survey of psychological distress among Italian people during the COVID-19 Pandemic: Immediate psychological responses and associated factors. Int J Environ Res Public Health 2020;17:3165.
60. Verma S, Mythily S, Chan YH, Deslypere JP, Teo EK, Chong SA. Post-SARS psychological morbidity and stigma among general practitioners and traditional Chinese medicine practitioners in Singapore. Ann Acad Med Singapore 2004b;33:743e8.
61. Bai Y, Lin CC, Lin CY, Chen JY, Chue CM, Chou P. Survey of stress reactions among health care workers involved with the SARS outbreak. Psychiatr Serv 2004;55:1055–7.