

## Sociodemographic and psychological characteristics of adults who have COVID-19 suspected and confirmed cases in themselves, their families or their immediate surroundings (10th-16th Weeks in COVID-19 Pandemia)

Kendisi, ailesi ya da yakın çevresinde COVID-19 şüpheli veya doğrulanmış vaka olan yetişkinlerin sosyodemografik ve psikolojik özellikleri (COVID-19 pandemisinde 10.-16. Haftalar)

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Received Date:17 January 2021

ABSTRACT

Accepted Date:20 February 2021

The purpose of the study was to examine the sociodemographic and psychological characteristics of adults who have COVID-19 suspected and COVID-19 confirmed cases in themselves, their families or their immediate surroundings in the COVID-19 pandemic. The present study was conducted in Kırklareli, Turkey with 2549 people who were aged 18 and over in May-June 2020 period, and had a descriptive design. The COVID-19 suspected frequency of adults themselves, their families and one of their immediate surroundings was 1.3%, 1.7%, 12.4%, respectively; and COVID-19 confirmed frequency was 0.5%, 0.5%, 11.7%, respectively. In COVID-19 pandemic, 17.1% of the adults had changes in smoking, 7.9% changes in alcohol use, 40.0% changes in domestic communication, and 6.9% were unemployed during this period. The probability of being COVID-19 suspected and COVID-19 confirmed in oneself, family or immediate surroundings was higher in those who were under 40 years of age, who were graduated from high school and above, those with income above the minimum wage, and those who used alcohol( $p<0.05$ ). The mild, moderate, and severe anxiety levels of the adults were 30.4%, 14.9%, 8.4%, respectively; and depression levels were 29.6%, 24.6%, 5.7%, respectively. The probability of having anxiety, and depression was higher in adults who had confirmed COVID-19 in themselves, families or immediate surroundings( $p<0.05$ ). Prioritizing the vulnerable groups in sociodemographic and psychological terms in the fight against COVID-19 is important in the measures to be taken.

**Keywords:** COVID-19 outbreak, suspected case, confirmed case, sociodemographic characteristics, psychological characteristics, anxiety, depression

Başvuru Tarihi:7 Ocak 2021

ÖZET

Kabul Tarihi:20 Şubat 2021

Araştırmada COVID-19 pandemi döneminde kendisinde, ailesinde veya sık görüştüğü yakın çevresinde COVID-19 şüpheli ve doğrulanmış vaka olan yetişkinlerin sosyodemografik ve psikolojik özelliklerinin incelenmesi amaçlandı. Tanımlayıcı tipteki bu araştırma Mayıs- Haziran 2020 tarihlerinde 18 yaş ve üzeri 2549 yetişkin ile Türkiye Kırklareli'nde yürütüldü. Yetişkinlerin kendisi, ailesi ve yakın çevresinden birinin COVID-19 şüpheli vaka olma sıklığı sırasıyla %1,3, %1,7, %12,4 iken; COVID-19 doğrulanmış vaka olma sıklığı aynı sırayla %0,5, %0,5, %11,7 idi. COVID-19 pandemisinde yetişkinlerin %17,1'inin sigara içme durumunda, %7,9'ünün alkol tüketiminde, %40,0'ünün aile içi iletişimde değişim vardı ve %6,9'u bu dönemde işsiz kaldı. Kendisi, ailesi veya yakın çevresinde COVID-19 şüpheli ve doğrulanmış vaka olma olasılığı 40 yaşın altında, lise ve üzerinde, asgari ücretin üzerinde geliri olanlarda ve alkol kullananlarda yüksekti ( $p<0.05$ ). Yetişkinlerin hafif, orta, şiddetli anksiyete sıklıkları sırasıyla %30,4, %14,9, %8,4; depresyon sıklıkları aynı sırayla %29,6, %24,6, %5,7 idi. Kendisi, ailesi veya yakın çevresinde COVID-19 doğrulanmış vaka olan yetişkinlerde anksiyete ve depresyon olasılığı yüksekti ( $p<0,05$ ). COVID-19 ile mücadelede sosyodemografik ve psikolojik açıdan kırılgan grupların önceliklendirilmesi alınacak tedbirlerde önemlidir.

**Anahtar kelimeler:** COVID-19 salgın, şüpheli vaka, doğrulanmış vaka, sosyodemografik özellikler, psikolojik özellikler, anksiyete, depresyon

Atıf  
Cite

Mercan, Y., Açar, V. ve Dikmen Yıldız, P. (2021). Sociodemographic and psychological characteristics of adults who have COVID-19 suspected and confirmed cases in themselves, their families or their immediate surroundings (10th-16th Weeks in COVID-19 Pandemia). *Humanistic Perspective*, 3 (1), 164-185. <https://doi.org/10.47793/hp.855622>

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## INTRODUCTION

The World Health Organization (WHO) reported on December 31, 2019 in Wuhan, China that cases of pneumonia, whose etiology was unknown, were detected as a new coronavirus that was not previously detected in humans, and the disease called Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV-2) was announced as a pandemic because it affected the entire world in a short period of time (WHO, 2020). Globally, WHO was notified about 69.808.588 confirmed CoronaVirus Disease 2019 (COVID-19) cases in the world as of December 12, 2020, with 1.588.854 deaths recorded (WHO, 2020a). As of the day the first case was reported in Turkey on March 11, 2020, 966.335 confirmed cases were reported, and 15.977 deaths were reported (RTMH, 2020; WHO, 2020a). Because of high infection rates, mortality and inability to understand the virus, studies that were aimed at preventing the spread of the virus came to the forefront for this purpose, restrictions, such as closing educational institutions, stopping flights, limiting inter-provincial travel, quarantine of the population over 65 and under 20 years old, weekend curfew in cities with high case density (HASUDER, 2020; RTMH, 2020). Also, the lack of effective treatment or vaccine against COVID-19 has necessitated important steps to implement other public healthcare measures, such as isolation, social distancing, mask, and hand hygiene in both business places and social areas (RTMH, 2020a).

The psycho-social responses to pandemic and the restrictions and measures applied to prevent the spread of the disease are unique to the individual; and recent studies has shown that there are different levels of economic, social and psychological difficulties among people who are exposed to COVID-19 pandemic in different ways (Mukhtar, 2020; Wang et al., 2020; Zhang et al., 2020). Women, those with comorbidities, the unemployed, the homeless, and those with poor living conditions were reported among disadvantaged groups in COVID-19 pandemic (Corburn et al., 2020; Liang et al., 2020; Mukhtar, 2020; Xiong et al., 2020). The COVID-19 pandemic, which is observed as the most economic problem, caused economic uncertainties because of negative consequences, such as restrictions in financial mobility, wage cuts, and job losses all over the world (Bäuerle et al., 2020; Cerami et al., 2020). In social and psychological terms, it is also inevitable that problems, such as anxiety about infection and catching the disease, anxiety about death, and death of loved ones, restrictions in freedom, being away from family members and friends, serious changes in routines, difficulty in meeting basic needs will affect the psycho-social behaviors of people (Parlapani et al., 2020; Shevlin et al., 2020). It was shown that mental disorders or mental distress increased in general population in the form of depression, anxiety and stress in COVID-19 pandemic (Bäuerle et al., 2020; Wang et al., 2020; Xiong et al., 2020; Zhang et al., 2020).

A great number of studies have been conducted on the prevalence, course, treatment methods, and clinical and epidemiological features of COVID-19 disease. However, in this dynamic pandemic process, the features of COVID-19 suspected and confirmed cases show variations, and remain unclear and up-to-date. For

this reason, the study aimed to examine the sociodemographic and psychological features of adults with COVID-19 suspected and confirmed cases in themselves, their families, or close surroundings.

## METHOD

### Study Design

This study, which was planned as an e-survey with the descriptive design, was conducted in Kırklareli between 22 May and 30 June 2020 between the 10th and 16th weeks after the onset of the pandemic in Turkey. The population of Kırklareli was 361.836 in 2019 (TurkStat, 2020). In Epi Info 7.2.3.1 StatCalc Program, the minimum sampling size was calculated to be 1064 ( $P = 0.50$ ,  $\alpha = 0.05$ ,  $d = 0.03$ ). During the study, it was decided to increase the sampling at a rate of 100% considering the possibility of losses, and it was aimed to reach 2128 people. During the data collection stage, 2991 people were reached. Among these, people who were under the age of 18 ( $n=103$ ), who resided outside the Kırklareli ( $n=293$ ) or who did not specify where they lived ( $n=15$ ), and who did not answer most of the survey form ( $n=31$ ), were excluded from the study, and 2549 people were conducted.

### Data Collected

Introductory Information Form and Common Anxiety Disorder-7 (CAD-7) and Patient Health Survey (PHS-9), which were prepared by the researchers based on literature were used as the data collection tool. The data were collected with the Survey Form (e-survey) that was created with the help of Google Form. Information was first given about the purpose and scope of the study, and questions were answered if the participant approved the study in the form shared from social media accounts (WhatsApp, Facebook, Twitter, Instagram etc.).

### Introductory Information Form

The survey form that was developed by the researchers included questions on the sociodemographic characteristics of the participants, and some of the modifiable characteristics of the participants during the COVID-19 pandemic. In the present study, COVID-19 suspected status was asked to the participants as "Is there anybody around you who was monitored/quarantined for 14 days with suspected COVID-19 disease?", and the answers were in the form of "No, there is not; Yes, myself; Yes, one of my family members; Yes, one of my neighbors or my close circles, which I often see". Those who responded as "Yes" were considered to be "COVID-19 suspected in oneself, family or immediate surroundings." COVID-19 diagnosis was asked to the participants with the question "Is there anybody around you diagnosed with COVID-19?"; and the answers were "No, there is not; Yes, myself; Yes, one of my family members; Yes, one of my neighbors or my close circles, which I often see". Those who responded as "Yes" were considered to be "COVID-19 confirmed in oneself, family, or immediate surroundings." Monthly household income was classified as 2.370 Turkish lira (₺) (350 \$), which is the minimum wage limit for 2020, and its folds (ICCPA, 2020).

### **Common Anxiety Disorder**

Common Anxiety Disorder-7 (CAD-7) is a short and self-notification test evaluating generalized anxiety disorder, and was developed by Spitzer et al. according to DSM-IV-TR Criteria. Konkan et al. (2013) conducted its validity and reliability study for Turkish. The scores from the scale, which evaluates the condition in the last 15 days, vary between 0-21. According to the cut-off points, it is rated as none between 0-4, 5-9 mild, 10-14 moderate, and 15-21 severe anxiety. Cronbach Alpha Coefficient was 0.852, and 0.908 in this study.

### **Patient Health Survey**

The Patient Health Survey (PHS-9) questions the symptoms of depression and was developed by Kroenke et al. according to DSM-IV Criteria. Its reliability for Turkish was conducted by Sari et al. (2016). The scores from the scale, which assesses the situation in the past two weeks, vary between 0-27. High scores show increased depression severity. According to cut-off points, scores between 1-4 show minimal, 5-9 mild, 10-14 moderate, 15-19 moderate-severe, and 20-27 severe depression. There is one more question in the test in addition to 9 diagnostic questions; however, this question is not included in the scoring. The scale whose Cronbach Alpha Coefficient was found to be 0.842 had a value of 0.894 in this study.

### **Data Analysis**

Numbers (n), percentages (%), mean values, and standard deviations ( $\pm$ SD) were used from the descriptive statistics in the study. Reliability Analysis was done for the reliability of the scales, and the results were evaluated with Cronbach Alpha Coefficient. The suitability of the data to normal distribution was checked with the Kolmogorov-Smirnov Test. The Pearson Chi-Square Test and Fisher's Exact Test were used in the comparisons of categorical variables, and the Mann Whitney U-Test and Kruskal Wallis Tests were used in the comparison of the average values. Multivariate Logistics Regression Analysis was used for further analysis, and the explanatory status of the models was shown with Nagelkerke R Square (R<sup>2</sup>). The significance level was accepted as  $p < 0.05$ . The analysis was done with the IBM-SPSS 22.0 Package Program.

### **Ethics Approval**

The ethical approval was received from the Scientific Research and Publication Ethics Board of the Rectorate of Kırklareli University for the study. Permission was obtained from the Ministry of Health to conduct the study.

## RESULTS

**Table 1***Distribution of sociodemographic characteristics of the participants*

	n	%
<b>Age</b>		
<30	537	21.1
30-39	1098	43.1
40-49	649	25.5
≥ 50	265	10.4
<b>Sex</b>		
Male	704	27.6
Female	1845	72.4
<b>Education status</b>		
Primary school or lower	170	6.7
Secondary school	213	8.4
High school	624	24.5
Graduate or higher	1542	60.5
<b>Living place</b>		
City center	683	26.8
District center	1653	64.8
Town / village	213	8.4
<b>Marital status</b>		
Married	2025	79.4
Single	401	15.7
Divorced or widowed	123	4.8
<b>Employment status</b>		
No	960	37.7
Yes	1589	62.3
<b>Job</b>		
Public salaried or paid	1124	44.1
Paid in the private sector	486	19.1
Self-employed or retired	157	6.2
Housewife, student or unemployed	782	30.7
<b>Monthly household income (Turkish lira- ₺)</b>		
≤ 2370 ₺ (<350 \$)	559	22.3
2371-5000 ₺ (350-699 \$)	888	35.4
5001-8000 ₺ (700-1049 \$)	632	25.2
≥8000 ₺ (≥1050 \$)	428	17.1
<b>COVID-19 suspected</b>		
No	2158	84.7
Yes, oneself	32	1.3
Yes, one of family members	43	1.7
Yes, one of immediate surroundings	316	12.4
<b>COVID-19 confirmed</b>		
No	2223	87.2
Yes, oneself	14	0.5
Yes, one of family members	14	0.5

Yes, one of immediate surroundings	298	11.7
<b>Personal protective equipment</b>		
Mask	2470	96.9
Visor or glasses	14	0.5
Social distance	1433	56.2
Glove	1171	46.0
Hand disinfectant, cologne or soap	1751	68.7
<b>Going outside</b>		
Never	302	11.9
Basic needs and going to work	2184	86.1
Every day	52	2.0
<b>Anxiety</b>		
None	1074	46.3
Mild	705	30.4
Moderate	346	14.9
Severe	196	8.4
<b>Depression</b>		
None	913	40.1
Mild	674	29.6
Moderate	559	24.6
Severe	129	5.7

The distribution of the sociodemographic characteristics of the participants who had a mean age of  $36.94 \pm 9.34$  (min: 18, max: 75) is shown in Table 1. A total of 1.3% of the study group, one of family members of 1.7%, 12.4% of immediate surroundings were COVID-19 suspected; and 0.5% of the group, one of family members of 0.5%, 11.7% of immediate surroundings were COVID-19 confirmed. The most commonly used protective equipment during COVID-19 pandemic was mask (96.9%), hand disinfectant, cologne or soap (68.7%), social distancing (56.2%). A total of 30.4% adults had mild, 14.9% moderate, and 8.4% severe anxiety; and 29.6% had mild depression, 24.6% had moderate, and 5.7% had severe depression.

The distribution of the sociodemographic and other descriptive characteristics of the participants based on being COVID-19 suspected and confirmed status themselves, families, or immediate surroundings is presented in Tables 2 and 3.

**Table 2**

*The distribution of sociodemographic characteristics according to being COVID-19 suspected and confirmed in themselves, families or immediate surroundings*

<i>Variables</i>	<b>All groups</b> N (%)	<b>COVID-19 suspected</b>		<i>p-value</i>	<b>COVID-19 confirmed</b>		<i>p-value</i>
		<b>No (n=2158)</b> n (%)	<b>Yes (n=391)</b> n (%)		<b>No (n=2223)</b> n (%)	<b>Yes (n=326)</b> n (%)	
<b>Age</b>							
<40	1635 (64.1)	1354 (82.8)	281 (17.2)	0.001	1406 (86.0)	229 (14.0)	0.014
≥40	914 (35.9)	804 (88.0)	110 (12.0)		817 (89.4)	97 (10.6)	
<b>Sex</b>							
Female	1845 (72.4)	1576 (85.4)	269 (14.6)	0.085	1615 (87.5)	230 (12.5)	0.429
Male	704 (27.6)	582 (82.7)	122 (17.3)		608 (86.4)	96 (13.6)	
<b>Education status</b>							
Secondary school or below	383 (15.0)	351 (91.6)	32 (8.4)	<0.001	359 (93.7)	24 (6.3)	<0.001
High school and above	2166 (85.0)	1807 (83.4)	359 (16.6)		1864 (86.1)	302 (13.9)	
<b>Living place</b>							
District / town / village	1866 (73.2)	1591 (85.3)	275 (14.7)	0.163	1650 (88.4)	216 (11.6)	0.002
City center	683 (26.8)	567 (83.0)	116 (17.0)		573 (83.9)	110 (16.1)	
<b>Marital status</b>							
Married	2025 (79.4)	1729 (85.4)	296 (14.6)	0.047	1784 (88.1)	241 (11.9)	0.008
Single, divorced or widowed	524 (20.6)	429 (81.9)	95 (18.1)		439 (83.8)	85 (16.2)	
<b>Number of people living with</b>							
Alone	94 (3.7)	72 (76.6)	22 (23.4)	0.027	74 (78.7)	20 (21.3)	0.012
At least one person	2455 (96.3)	2086 (85.0)	369 (15.0)		2149 (87.5)	306 (12.5)	
<b>Employment status</b>							
Yes	960 (37.7)	828 (86.3)	132 (13.8)	0.083	856 (89.2)	104 (10.8)	0.022
No	1589 (62.3)	1330 (83.7)	259 (16.3)		1367 (86.0)	222 (14.0)	
<b>Job</b>							
Public salaried or paid	1124 (44.1)	956 (85.1)	168 (14.9)	0.048	973 (86.6)	151 (13.4)	0.004
Paid in the private sector, self-employed or retired	643 (25.2)	526 (81.8)	117 (18.2)		544 (84.6)	99 (15.4)	
Housewife, student or unemployed	782 (30.7)	676 (86.4)	106 (13.6)		706 (90.3)	76 (9.7)	
<b>Monthly household income</b>							
Minimum wage and below	559 (22.3)	496 (88.7)	63 (11.3)	0.002	511 (91.4)	48 (8.6)	<0.001
Minimum wage and above	1948 (77.7)	1623 (83.3)	325 (16.7)		1671 (85.8)	277 (14.2)	

**Table 3**

*The distribution of other descriptive characteristics according to being COVID-19 suspected and confirmed in themselves, families or immediate surroundings*

<i>Variables</i>	<i>All groups</i>	<i>COVID-19 suspected</i>		<i>p-value</i>	<i>COVID-19 confirmed</i>		<i>p-value</i>
		<i>No (n=2158)</i>	<i>Yes (n=391)</i>		<i>No (n=2223)</i>	<i>Yes (n=326)</i>	
		<i>N (%)</i>	<i>n (%)</i>		<i>n (%)</i>	<i>n (%)</i>	
<b>Anxiety about employment status</b>							
No worries about job	1341 (52.6)	1127 (84.0)	214 (16.0)	0.176	1152 (85.9)	189 (14.1)	0.056
Fear of losing your job	308 (12.1)	254 (82.5)	54 (17.5)		267 (86.7)	41 (13.3)	
Unemployed or previously unemployed during this period	900 (35.3)	777 (86.3)	123 (13.7)		804 (89.3)	96 (10.7)	
<b>Fear of not meeting basic needs</b>							
Yes	1969 (77.2)	1664 (84.5)	305 (15.5)	0.697	1713 (87.0)	256 (13.0)	0.554
No	580 (22.8)	494 (85.2)	86 (14.8)		510 (87.9)	70 (12.1)	
<b>Economic sufficiency</b>							
No cash savings	1007 (40.2)	863 (85.7)	144 (14.3)	0.386	889 (88.3)	118 (11.7)	0.203
Enough for 1-5 months	1023 (40.8)	855 (83.6)	168 (16.4)		876 (85.6)	147 (14.4)	
Enough for ≥ 6 months	478 (19.1)	401 (83.9)	77 (16.1)		417 (87.2)	61 (12.8)	
<b>Smoking</b>							
Yes	864 (33.9)	714 (82.6)	150 (17.4)	0.043	750 (86.8)	114 (13.2)	0.661
No	1685 (66.1)	1444 (85.7)	241 (14.3)		1473 (87.4)	212 (12.6)	
<b>Smoking status</b>							
Decreased	310 (12.2)	263 (84.8)	47 (15.2)	0.794	273 (88.1)	37 (11.9)	0.526
Same	2113 (82.9)	1791 (84.8)	322 (15.2)		1844 (87.3)	269 (12.7)	
Increased	126 (4.9)	104 (82.5)	22 (17.5)		106 (84.1)	20 (15.9)	
<b>Use of alcohol</b>							
Yes	388 (15.2)	291 (75.0)	97 (25.0)	<0.001	311 (80.2)	77 (19.8)	<0.001
No	2161 (84.8)	1867 (86.4)	294 (13.6)		1912 (88.5)	249 (11.5)	
<b>Alcohol consumption status</b>							
Decreased	160 (6.3)	124 (77.5)	36 (22.5)	0.003	133 (83.1)	27 (16.9)	0.001
Same	2348 (92.1)	2004 (85.3)	344 (14.7)		2061 (87.8)	287 (12.2)	
Increased	41 (1.6)	30 (73.2)	11 (26.8)		29 (70.7)	12 (29.3)	
<b>Communication within the family</b>							
Negative	308 (12.1)	254 (82.5)	54 (17.5)	0.245	257 (83.4)	51 (16.6)	0.086
Same	1531 (60.1)	1291 (84.3)	240 (15.7)		1348 (88.0)	183 (12.0)	
Positive	710 (27.9)	613 (86.3)	97 (13.7)		618 (87.0)	92 (13.0)	
<b>Post-pandemic lives</b>							
Negative	1385 (54.3)	1181 (85.3)	204 (14.7)	0.238	1211 (87.4)	174 (12.6)	0.453
Same	637 (25.0)	526 (82.6)	111 (17.4)		547 (85.9)	90 (14.1)	
Positive	527 (20.7)	451 (85.6)	76 (14.4)		465 (88.2)	62 (11.8)	



The Multivariate Logistical Regression Analysis results of COVID-19 suspected and confirmed status in the participants themselves, families or immediate surroundings are given in Table 4.

**Table 4**

*Multivariate Logistic Regression Analysis results according to being COVID-19 suspected and confirmed in themselves, families or immediate surroundings*

<i>Predictors</i>	COVID-19 suspected <sup>1</sup>			COVID-19 confirmed <sup>2</sup>		
	OR	(95% CI)	<i>p</i> -value	OR	(95% CI)	<i>p</i> -value
<b>Age</b>						
<40	1.570	(1.230; 2.004)	<0.001	1.439	(1.110; 1.866)	0.006
≥40 (ref.)	1	1		1	1	
<b>Education status</b>						
Secondary school or below (ref.)	1	1	0.005	1	1	0.005
High school and above	1.767	(1.183; 2.641)		1.914	(1.216; 3.013)	
<b>Living place</b>						
District / town / village (ref.)	1	1	0.076	1	1	0.001
City center	1.248	(0.977; 1.594)		1.519	(1.177; 1.962)	
<b>Number of people living with</b>						
Alone (ref.)	1	1	0.100	1	1	0.065
At least one person	0.656	(0.396; 1.084)		0.612	(0.364; 1.031)	
<b>Monthly household income</b>						
Minimum wage and below (ref.)	1	1	0.035	1	1	0.020
Minimum wage and above	1.390	(1.023; 1.889)		1.500	(1.066; 2.110)	
<b>Use of alcohol</b>						
No (ref.)	1	1	<0.001	1	1	<0.001
Yes	1.929	(1.475; 2.522)		1.755	(1.312; 2.347)	

The probability of being a suspected COVID-19 case oneself, families or immediate surroundings was 1.570 times higher under the age of 40 (OR, 95% CI: 1.230; 2.004), 1.767 times higher for those with high school and above education level (OR 95% CI: 1.183; 2.641), 1.390 times higher (OR, 95% CI: 1.023; 1.889) in those with income levels above the minimum wage, and 1.929 times higher in alcohol users (OR, 95% CI: 1.475; 2.522) at statistically significant levels than other categories of variables.

The probability of being diagnosed with COVID-19 in oneself, family or immediate surroundings was 1.439 times under the age of 40 (OR, 95% CI: 1.110; 1.866), 1.914 times higher in high school and above education level (OR 95% CI: 1.216; 3.013), 1.519 times higher in those living in the city center (OR, 95% CI: 1.177; 1.962), 1.500 times higher (OR, 95% CI: 1.066; 2.110) in those with income level above the minimum wage, and 1.755 times higher in alcohol users (OR, 95% CI: 1.312; 2.347) at statistically significant levels than other categories of variables (Table 4).

The Multivariate Logistical Regression Analysis results on the psychological characteristics of participants based on COVID-19 suspected and confirmed status in oneself, family or immediate surroundings are presented in Table 5.

**Table 5**

*Multivariate Logistic Regression Analysis results of the psychological characteristics of the participants based on being COVID-19 suspected and confirmed in themselves or one's family or immediate surroundings*

<b>Predictors</b>	<b>Anxiety<sup>1</sup></b>				<b>Depression<sup>2</sup></b>			
	<b>Yes n (%)</b>	<b>AOR<sup>†</sup></b>	<b>(95% CI)</b>	<b>p-value</b>	<b>Yes n (%)</b>	<b>AOR<sup>†</sup></b>	<b>(95% CI)</b>	<b>p-value</b>
<b>COVID-19 suspected</b>								
No	1026 (52.4)	1	1	0.219	1124 (58.5)	1	1	0.853
Yes	221 (60.9)	1.210	(0.893;1.638)		238 (67.2)	1.030	(0.750; 1.416)	
<b>COVID-19 confirmed</b>								
No	1059 (52.4)	1	1	0.049	1151 (58.1)	1	1	0.001
Yes	188 (62.7)	1.390	(1.001;1.931)		211 (71.8)	1.811	(1.274; 2.574)	

<sup>1,2</sup>Omnibus Tests of Model Coefficients: p<0.001 <sup>1</sup>Hosmer and Lemeshow Test: 0.637, Nagelkerke R Square: 0.067. <sup>2</sup>Hosmer and Lemeshow Test: 0.093, Nagelkerke R Square: 0.080.

<sup>†</sup>Adjusted for age, sex, education and monthly household income level.

The Enter Strategy was used in the model that was adjusted according to age, sex, education, and monthly household income levels. The risk of anxiety in COVID-19 participants themselves, family or immediate surroundings was 1.390 times found to be higher (OR, 95% CI: 1.001; 1.931), and 1.811 times higher (OR, 95% CI: 1.274; 2.574) risk of depression. No significant relations were detected between being suspected COVID-19 case and the frequency of anxiety and depression in themselves, family, or immediate surroundings ( $p>0.05$ ).

## DISCUSSION

This study was conducted as an e-survey in adults aged 18 and over in Kırklareli between the 10th and 16th weeks after the beginning of the COVID-19 pandemic in Turkey (March 11, 2020). Also, this study expands previous studies by emphasizing various factors and mental health conditions related with diagnosing COVID-19 or being a COVID-19 contact in general population and demographic and social factors.

In the present study, 0.5% of the participants themselves, 0.5% of family members, and 11.7% of the close individuals they met frequently, such as neighbors and friends, were infected with COVID-19 virus. Between June 1-28, 2020, which included the study dates, the laboratory-approved number of COVID-19 cases was 41.4 in one hundred thousand population, and in the Western Marmara Region, which included the city where the study was conducted, this incidence was reported to be 11.3 in the population of hundred thousand (RTMH, 2020b). This finding was observed to be in line with the report when considering the laboratory approved results, except for possible cases. However, because of the inadequate diagnosis opportunities and the number of tests done in Turkey, as it is the case all over the world, it was necessary to follow-up possible cases. There were difficulties in detecting the number of cases, which were estimated to be above the observations, the cases were monitored as suspected case for 14 days in line with WHO recommendations (RTMH, 2020). In our results, 1.3% of the adults themselves, 1.7% of their family members, and 12.4% of the close individuals they met frequently, such as neighbors and friends, were found to be COVID-19 suspected case. Since no source was found to monitor the numbers of the suspected people in the database of the Ministry of Health, this situation could not be discussed here.

In our study, it was found that being COVID-19 suspected case or having the diagnosis does not differentiate according to gender, but the probability of being COVID-19 suspected case or diagnosed with it, in family or immediate surroundings is high in participants under the age of 40. Similarly, a study conducted in Brazil also reported that the risk of COVID-19 infection does not differentiate according to gender (Rezende et al., 2020). The sensitivity to COVID-19 between men and women, and the relation between biological mechanisms have not yet been elucidated fully, and this situation, which is observed more in men, is considered to be related with economic, social, security, gender role and participation in the workforce (Gebhard et al., 2020; Kopel et al., 2020). A study conducted in Australia reported that people who were older and who had one or more comorbidities were more likely to suffer serious illness, with the highest rate of

COVID-19 reported between the ages of 65-79 (COVID-19 National Incident Room Surveillance Team, 2020). On March 21, 2020, those who were at and above the age of 65 and those with chronic conditions were given curfews at national level, including between the dates of conducting this study and the following dates, and these people were allowed within limited hours in coming periods (HASUDER, 2020a). In the present study, it was associated with this condition if participants under the age of 40 were more likely to be COVID-19 suspected case or receive the diagnosis in themselves, their families or their immediate surroundings.

It was reported in the literature that adults with low educational levels had higher risk factors related with COVID-19 when compared to university graduates, and were more likely to be hospitalized (Batty et al., 2020; Rezende et al., 2020). This can be explained by the ability of people with higher education to have better knowledge on COVID-19 and its measures, and to take protective measures against it. Contrary to this finding, the probability of being COVID-19 suspected case or diagnosed in oneself, family or immediate surroundings was found to be high in high school and higher educated participants when compared to secondary school and lower education levels in our study. The role of education level in participation in the workforce is already known. Nearly all of the employees consisted of high school and above education in our study. It was considered that, although preventive measures were taken, those with high school and higher education, who joined the workforce more, increased the likelihood of being COVID-19 suspected case or having COVID-19 diagnosis because of the high infection of COVID-19 virus.

In addition, it was found in our study that 77.2% of the respondents had a fear of not being able to meet their basic needs, and 86.1% left the house because of meeting basic needs and to go to work. A study conducted in the UK reported a higher risk of hospitalization for those with incomes of less than 31.000 pounds than those with incomes of 52.000 pounds or more (Batty et al., 2020); and a positive relation was reported in Brazil between higher per capita income and COVID-19 diagnosis, which was explained by access to more healthcare services and more tests for COVID-19 diagnosis of those with high per capita income (de Souza et al., 2020). In our findings, the fact that high rates were detected may be due to this reason and because of those with incomes above the minimum wage being likely to be diagnosed with COVID-19 in themselves, their families or their immediate surroundings. The fact that being COVID-19 suspected case in oneself, family or immediate surroundings was associated with the fact that 40.2% of the participants had no financial savings, 12.1% feared losing their jobs, and even 6.9% were unemployed during the pandemia period, highly educated people are considered to be highly suspected, and to be at the risk of infection because of these reasons. A study reported that urban poor people living in unsafe settlements such as slum areas were more vulnerable to COVID-19 because of insufficient access to basic needs, such as water, toilet, sewerage, drainage, waste collection, and safe and adequate housing (Corburn et al., 2020). In the USA, it was found that racial, ethnic and homeless minority populations were hospitalized due to the health inequalities they experienced after being affected by COVID-19 (Liang et al., 2020). In this study, which was conducted in a semi-urban city with a

population living in all cities, districts and villages, the high probability of being diagnosed with COVID-19 in oneself, family or immediate surroundings might be related with the uncovered basic needs.

In the present study, changes were observed in smoking and alcohol consumption of adults during the pandemic process, and it was found that those who used alcohol were more likely to be COVID-19 contact or diagnosed with it in themselves, their families or immediate surroundings. Previous studies showed that exposure to extreme and prolonged stress increases alcohol use; and it was reported that people might develop predisposition to alcohol and substance use disorders after traumatic events, such as Hurricane Katrina and the September 11, 2001 terrorist attacks (Flory et al., 2009; Stein et al., 2004). On the other hand, it is known that smoking and alcohol consumption affect the immune system negatively and weaken the defense system (Finlay & Gilmore, 2020; Vardavas & Nikitara, 2020). It was reported that the corona virus affects the course of the disease because of existing comorbidities, such as cardiovascular diseases, diabetes, and respiratory diseases in most individuals who smoke and drink alcohol (COVID-19 National Incident Room Surveillance Team, 2020; Da et al., 2020). In addition, similar to our study, a study also found that alcohol was the most commonly used psychoactive substance during the COVID-19 pandemic, with nearly one third of the participants changing their drinking habits because of the outbreak (Chodkiewicz et al., 2020). Also, due to its nature, COVID-19 pandemic has necessitated quarantine measures and social isolation, which can be difficult and quite stressful for individuals, and which can cause or trigger problems, such as alcohol and substance use disorder (Usher et al., 2020). Considering the negative situations caused by alcohol use, it is understandable that people who use alcohol are more likely to have COVID-19 contact or be diagnosed with it.

Another important target of our study was to determine the effects of COVID-19 pandemic on mental health in general population and in those who are diagnosed with COVID-19 in themselves, their families or immediate surroundings. It was found in our study that there was moderate-severe anxiety in approximately one in four adults in general population, and moderate-severe depression in one in three. Anxiety and depression levels were found to be higher than in the general community in those with COVID-19 suspected people or those diagnosed with COVID-19 in their own, families or immediate surroundings. In a systematic review in which the effect of COVID-19 pandemic on mental health in general population in China, Spain, Italy, Iran, the USA, Turkey, Nepal and Denmark reported that the anxiety frequency was between 6.33%-50.9%, and the frequency of depression was reported between 14.6% and 48.3%, and the frequency of stress was reported between 8.1% and 81.9% (Xiong et al., 2020). In a study that was conducted in Turkey, the frequency of anxiety was found to be 45.1%; and depression frequency was 23.6% (Ozdin & Bayrak Ozdin, 2020). It was shown that female gender, younger age group ( $\leq 40$  years), unemployment, confirmed or suspected COVID-19, and family members or friends were at high risk for symptoms of depression, anxiety and acute stress (Ozdin and Bayrak Ozdin, 2020; Shi et al., 2020; Xiong et al., 2020). In addition to the symptoms of the disease, the side effects of the drugs used in the treatment of COVID-19, difficulty being admitted to hospital wards, uncertainty of the course of the disease, feeling of loss of control, physical and social isolation, loneliness and anxiety about having

infected family members or other individuals, the stigma and discrimination against people diagnosed with COVID-19 and who have suffered the disease were shown to be associated with mental problems (Liu et al., 2020; Saltzman et al., 2020; Usher et al., 2020). It was found that these findings, which were observed in different times in the literature, were generally related with the unprepared status of countries in the face of COVID-19 pandemia, differences in the capacity and infrastructure of healthcare systems, taking quarantine measures of different sizes in countries, conducting studies at different times, and different measurement tools used to determine anxiety depression levels. These findings obtained in our study explain the positive relation between the possibility of being diagnosed with COVID-19 and depression in oneself, family or immediate surroundings.

### **Study Strength**

The large sampling of the study increased the generalization of the study results. Also, this study, which was conducted with a community-based form on a date during the active period of the pandemic, remains important in terms of its contribution to the literature.

### **Limitations**

The collection of the data with computer or smartphone was an important limitation in the study. Because there were no data on those who did not use computers or smartphones and did not have internet access. Another limitation of the study was that it was based on the statements of the participants. This came up before us in two forms. Firstly, the contact status could not be checked from the filiation records, and their diagnosis status was not confirmed clinically. Secondly, historical data, such as having COVID-19 -suspected people around or having the diagnosis in the immediate surroundings may have been affected by the memory factor. The treatment of some individuals who were diagnosed with COVID-19 in hospitals might have affected the number of participants. Whether the participant knew s/he was had a contact with a person with COVID-19, or whether s/he knew of the presence of COVID-19 disease might have affected the responses of the participants when the survey was filled.

## **CONCLUSIONS**

This study showed that having COVID-19 suspected individuals in the family or in immediate surroundings or being diagnosed with COVID-19 personally is influenced by demographic characteristics, such as age, education, monthly household income, and caused changes in some lifestyle behaviors, such as smoking and alcohol use, and domestic communication. It also showed that anxiety and depression are common in COVID-19 suspected individuals, in the family, in immediate surroundings, or in people diagnosed with COVID-19. Sociodemographically vulnerable populations can be identified, and more careful monitoring of these people can help with the measures that will be taken in the fight against COVID-19. Considering current study results, which show that individuals diagnosed with COVID-19 carry higher risks for mental health problems, providing early and evidence-based psychological support for these individuals is important for protection and

prevention practices. However, the long-term effects of COVID-19 pandemia on general population, infected and contact people are unclear, and need to be examined. Similarly, further studies should be conducted to determine demographic, social and psychological characteristics of individuals who have higher risks for COVID-19.

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## GENİŞLETİLMİŞ ÖZET

### Giriş.

Dünya Sağlık Örgütü (DSÖ) tarafından Çin'in Wuhan kentinde 31 Aralık 2019'da etiyolojisi bilinmeyen pnömoni vakalarının, daha önce insanlarda tespit edilmemiş yeni bir koronavirüs olduğu bildirilmiştir. Şiddetli Akut Solunum Sendromu Koronavirüs (SARS-CoV-2) olarak adlandırılan hastalık (COVID-19) pandemi olarak duyurulmuştur. Uluslararası ve ulusal düzeyde halk sağlığı çalışmaları kapsamında eğitim kurumları kapatılmış, uçuşlar durdurulmuş, iller arası seyahatler sınırlandırılmış, 65 yaş üstü ve 20 yaş altı popülasyona sokağa çıkma kısıtlamaları ve vaka yoğunluğunun fazla olduğu illerde hafta sonu sokağa çıkma yasağı gibi kısıtlamalar getirilmiştir. Aynı zamanda, hem iş hem de sosyal alanlarda izolasyon, sosyal mesafe, maske ve el hijyeni gibi diğer halk sağlığı önlemlerinin hayata geçirilmesi için önemli adımlar atılmıştır. Bu durum, COVID-19 salgınına farklı şekillerde maruz kalan insanlar arasında farklı seviyelerde ekonomik, sosyal ve psikolojik sıkıntıların yaşanmasına neden olmuştur. En fazla ekonomik sorunlar olarak gözlenen COVID-19 pandemisinde tüm dünyada finansal hareketliliğin kısıtlanması, maaş kesintisi, iş kayıpları gibi olumsuz sonuçlar ekonomik belirsizliğe yol açmıştır. Sosyal ve psikolojik açıdan, bulaş ve hastalık kapma ile ilgili endişe, ölüm ve sevdiklerinin ölümü ile ilgili kaygı, özgürlüğün kısıtlanması, aile üyelerinden ve arkadaşlardan uzak/ayrı kalma, rutinlerdeki ciddi değişiklikler, temel ihtiyaçların karşılanmasında yaşanan zorluk gibi sıkıntıların kişilerin psiko-sosyal davranışlarını etkilemiştir. Çeşitli ülkelerde COVID-19 pandemisinde genel popülasyonda ruhsal bozuklukların veya mental stresin depresyon, anksiyete ve stres şeklinde arttığı da gösterilmiştir. Bu araştırmada COVID-19 pandemi döneminde kendisinde, ailesinde veya sık görüştüğü yakın çevresinde COVID-19 şüpheli vaka veya COVID-19 doğrulanmış vaka olan yetişkinlerin sosyodemografik ve psikolojik özelliklerinin incelenmesi amaçlanmıştır.

### Yöntem.

Tanımlayıcı tipteki e-anket olarak planlanmış bu araştırma Mayıs- Haziran 2020 (Türkiye'de pandeminin 10-16. haftaları) tarihleri arasında Kırklareli'nde 2549 kişi ile yürütüldü. Veri toplama aracı olarak araştırmacılar tarafından literatüre dayalı olarak hazırlanan Tanıtıcı Bilgi Formu, Yaygın Anksiyete Bozukluğu-7 ve Hasta Sağlık Anketi kullanılmıştır. Veriler, oluşturulan google form yardımıyla sosyal medya hesaplarından paylaşarak toplanmıştır. Araştırmada COVID-19 şüpheli veya doğrulanmış vaka olma durumu katılımcılara yöneltilen "COVID-19 (Koronavirüs) hastalığı şüphesi ile çevrenizde 14 gün izlem yapılan / izolasyona alınan biri var mı?" ve "COVID-19 (Koronavirüs) hastalığı tanısı alan çevrenizde biri var mı?" şeklinde sorulmuş, yanıtlar "Hayır, yok; Evet, kendim; Evet, ailemden biri; Evet, komşu, arkadaş gibi sık görüştüğüm yakın çevremden biri" şeklinde düzenlenmiştir. Evet, yanıtını verenler COVID-19 şüpheli vaka ve COVID-19 doğrulanmış vaka olarak değerlendirilmiştir. Araştırmada tanımlayıcı istatistikler, Güvenirlik analizi, Kolmogorov-Smirnov Testi, Pearson Ki-Kare Testi, Fisher'ın Kesin Testi, Mann Whitney-U Testi ve Kruskal Wallis Varyans analizi ve Çok değişkenli Lojistik Regresyon Analizinden yararlanılmıştır. Anlamlılık düzeyi

$p < 0,05$  kabul edilmiş, analizlerde IBM-SPSS 22.0 paket programı kullanılmıştır. Araştırma için etik kurul onayı ve resmi izinler alınmıştır.

### **Bulgular.**

Katılımcıların yaş ortalaması  $36,94 \pm 9,34$  (Min: 18, Max: 75)'dir. Yetişkinlerin kendisi, ailesi ve yakın çevresinden birinin COVID-19 şüpheli vaka olma sıklığı sırasıyla %1,3, %1,7, %12,4 iken; COVID-19 doğrulanmış vaka olma sıklığı aynı sırayla %0,5, %0,5, %11,7'dir. COVID-19 pandemi döneminde en sık kullanılan koruyucu donanım maske (%96,9), el dezenfektanı, kolonya veya sabun (%68,7), sosyal mesafe (%56,2)'dir. Yetişkinlerin %30,4'ünde hafif, %14,9'ünde orta, %8,4'ünde şiddetli düzeyde anksiyete; %29,6'sında hafif, %24,6'sında orta, %5,7'sinde şiddetli düzeyde depresyon belirlendi. Çok değişkenli lojistik regresyon analizine göre: kendisi, ailesi veya yakın çevresinde COVID-19 şüpheli vaka olma olasılığı 40 yaşın altında (OR:1,570, %95 GA: 1,230; 2,004), lise ve üzeri eğitimlilerde (OR: 1,767, %95 GA: 1,183; 2,641), asgari ücretin üzerinde geliri olanlarda (OR: 1,390, %95 GA: 1,023; 1,889) ve alkol kullananlarda (OR: 1,929, %95 GA: 1,475; 2,522) anlamlı düzeyde yüksek bulundu. Kendisi, ailesi veya yakın çevresinde COVID-19 doğrulanmış vaka olma olasılığı 40 yaşın altında (OR: 1,439, %95 GA: 1,110; 1,866), lise ve üzeri eğitimlilerde (OR: 1,914, %95 GA: 1,216; 3,013), il merkezinde yaşayanlarda (OR: 1,519, %95 GA: 1,177; 1,962), asgari ücretin üzerinde geliri olanlarda (OR: 1,500, %95 GA: 1,066; 2,110) ve alkol kullananlarda (OR: 1,755, %95 GA: 1,312; 2,347) anlamlı düzeyde yüksek bulundu. Yaş, cinsiyet, eğitim durumu, aylık hane gelirin göre düzeltilmiş çok değişkenli lojistik regresyon analizinde katılımcıların kendisi, ailesi veya yakın çevresinde COVID-19 doğrulanmış vaka olanlarda anksiyete (OR:1,390, %95 GA: 1,001; 1,931) ve depresyon görülme riski (OR: 1,811, %95 GA: 1,274; 2,574) yüksek belirlendi. Kendisi, ailesi veya yakın çevresinde COVID-19 şüpheli vaka olma durumu ile anksiyete ve depresyon sıklığı arasında bir farklılık saptanamadı ( $p > 0,05$ ).

### **Tartışma ve Sonuç.**

Bu çalışmada Türkiye'de COVID-19 salgınının başlangıcından itibaren (11 Mart 2020) 10.-16. haftalar arasında Kırklareli genelinde 18 yaş ve üzeri yetişkinlerde gerçekleştirilmiştir. Aynı zamanda, bu araştırma genel popülasyondaki COVID-19 şüpheli veya doğrulanmış vaka olma durumunu etkileyen demografik ve sosyal etmenler ilgili çeşitli faktörleri ve ruh sağlığı durumlarını vurgulayarak önceki çalışmaları genişletmektedir. Bu çalışma, kendisi, ailesi veya yakın çevresinde COVID-19 şüpheli vaka veya COVID-19 doğrulanmış vaka olma durumunun yaş, eğitim, aylık hane geliri gibi demografik özelliklerden etkilendiğini ve sigara ve alkol kullanımı, aile içi iletişim gibi bazı yaşam biçimi davranışlarında değişime neden olduğunu göstermiştir. Ayrıca kendisi, ailesi veya yakın çevresinde COVID-19 şüpheli veya COVID-19 doğrulanmış vaka olan kişilerde anksiyete ve depresyonun yaygın olduğunu göstermektedir. COVID-19 ile mücadelede sosyodemografik açıdan kırılgan olan popülasyonlar tanımlanarak bu kişilerin daha dikkatli izlenmesi alınacak tedbirlere yardımcı olabilir. Mevcut araştırma sonuçları COVID-19 tanısı alan bireylerin ruh sağlığı problemleri için daha fazla riski taşıdıkları göz önünde bulundurulduğunda, bu kişilere erken ve kanıta dayalı psikolojik desteğin sağlanması, koruma ve önleme uygulamaları açısından önem taşımaktadır. Bununla birlikte, COVID-19

pandemisinin genel popölasyon, enfekte ve temashöların üzerindeki uzun vadeli etkisi belirsizdir ve incelenmesi gerekmektedir. Benzer şekilde, hangi bireylerin COVID-19 pozitifliđi aısından daha yüksek risk taşıdıđına yönelik demografik, sosyal ve psikolojik nitelikleri belirlemek için daha ileri alıřmalar yapılması faydalı olacaktır.