






## Investigation results of the anxiety impact of COVID-19 pandemic on individuals: A case from Turkey

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### ABSTRACT

*In this study, 403 participants were asked questions to determine the preventive measures being taken and anxiety levels during COVID-19 Pandemic. Participants were almost equally divided between women (55%) and men (45%). The rate of most worried persons about the pandemic was 62%. The risk of anxiety of women compared to men has been calculated as 2.1 times higher (95% CI 1.20–3.84). The Cramer's V value of the change in hand-washing habit before and after COVID-19 outbreak is 0.706, indicates the existence of a strong relationship. The data is analyzed by using SPSS 24.0. ODDS Ratio values are calculated to determine the impact levels, and Cramer's V value is calculated to determine the relationship in behavior change in hand-washings habits.*

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## Introduction

The COVID-19 outbreak emerged from a sole source in the Wuhan region (China) in December 2019 and spread to all continents except Antarctica in less than three months. At this point, it influenced 193 countries. Hitherto, there have been more than 1,650,000 coronavirus cases worldwide (more than 500,000 in the US only) and more than 100,000 deaths (WHO, 2020). Depending on the age and immune system of each individual, clinical symptoms vary under three headings: mild, severe and life threatening (Xie & Chen, 2020). The most critical complications have been reported to be severe pneumonia, acute heart failure, septic shock, and the highest prevalence for people over 60 years of age (Lai, et al, 2020).

Coronavirus infection (COVID-19) is an internationally spread and ongoing public health emergency. Despite the fact that the outbreak is an unprecedented global threat (or possibly), there are significant gaps in our knowledge of COVID-19 epidemiology, transmission dynamics, research tools and management.

In this study, we ask questions to 403 participants. We determined the preventive measures being taken and anxiety levels during COVID-19 Pandemic. We analyzed the data by using SPSS 24.0. ODDS Ratio values are calculated to determine the impact levels, and Cramer's V value is calculated to determine the relationship in behavior change in hand-washings habits.

The reminder of this study is organized as follows. The next section provides a review of extant literature. The third section introduces methodology and data. Finally, conclusions and implications of the study are presented in the final section.

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## Literature review

### COVID-19

In the initial stages of the outbreak, public concern was alleviated by comparing the mortality rate of COVID-19 (3.3%), Ebola (50%) or SARS (10%) rather less threatening viral rates of outbreaks with a relatively low overall mortality rate such as seasonal flu. However, the situation that started to reveal a strong reason to worry is the rapid spread rate that occurred with mild symptomatic cases ( $R_0 \sim 2.2$ ) (Radulescu & Cavanagh, 2020).

Based on the latest findings, it was found that the current outbreak has a specific pattern. Firstly, it has a relatively long incubation period and then a long symptomatic infectious period (The average is about 5 days, and the estimated variations are between 2 and 27 days) (Lupia, et al., 2020). This situation, when combined with very limited test resources, prevents the detection of infectious individuals and contributes to pandemic spread by allowing them to travel.

Secondly, it shows significant age differences in symptom development and prediction. Children and young adults exposed to the virus are at risk of transmission as much as older age groups. However, mild symptoms can go undetected and their mild symptoms could make them contagious carriers move the virus more easily and could effectively spread it to others unlimitedly. On the other hand, the elderly population is more likely to develop severe symptoms and have higher risk of severe illness. Mortality rates vary considerably with age (Lupia, et al., 2020).

Thirdly, it has been stated that COVID-19 is able to reappear even in those who have had the disease (Shi, et al. 2020). This situation is clinically important because the chance of survival in reinfected patients has not yet been revealed. On a larger scale, the potential for re-transmission will not only increase the rate of spread, but also question the applicability of social measures such as herd immunity.

### Anxiety

While results are emerging at the social level, anxiety level is tried to be measured at the individual level. Individuals' health anxiety arises when perceived physical sensations or changes are interpreted as signs of being ill (Asmundson, et al., 2010; Taylor, 2004). Nearly everyone has some degree of health anxiety and has a preventative approach such as being careful about potential health threats. This preventative approach helps to understand the early symptoms of health problems leading to health promoting behavior. However, a high level of health anxiety is increasingly widespread as Kosic et al. (2020) puts it. It is known that high level of health anxiety occur following exposure to disease-related popular media (Asmundson et al., 2010). It would not be wrong to say that this situation will increase with COVID-19.

It is known that psychological factors play a vital role in the success of public health strategies that are used to manage epidemics and pandemics such as risk communication, vaccination and antiviral therapy, hygiene practices and social withdrawal. Health anxiety is important in influencing the success or failure of each of these strategies (Taylor, 2019).

People with high level of health anxiety tend to misinterpret benign bodily sensations and changes as dangerous. In the case of viral outbreaks, depending on previous experience and information about the current outbreak, a person with high health anxiety may misinterpret benign muscle pain or cough as a symptom that they are ill (Taylor, 2004; Wheaton et al., 2012). This situation will increase their anxiety level and affect their ability as well as their behavior to make rational decisions.

## Research and Methodology

The research was conducted with 403 participants by using the questionnaire technique, which is the quantitative research method in the period of 20 March - 27 March 2020. Questions were asked to determine the measures and anxiety levels of the participants during COVID-19 outbreak.

### Data Analysis

SPSS 24.0 program was used for statistical analysis. While analyzing the research data, beside descriptive statistical methods such as Frequency, Rate, Minimum, Maximum, the Pearson Chi-Square test was used to analyze the qualitative data. ODDS Ratio values were calculated to determine the impact levels. Cramer's V value is calculated to determine the relationship in behavior change in hand-washings habits. Cramer's V values range from 0-1, values between 0-30 indicate weak, values between 31-60 indicate medium, values between 61-100 indicate a strong relationship. Significance was evaluated at  $p < 0.01$  and  $p < 0.05$  levels.

## Results

**Table 1:** Demographic information

		<b>n</b>	<b>%</b>
<b>Age</b>	18-24	188	47,0
	25-34	141	35,0
	35-44	44	10,0
	>45	30	8,0
<b>Gender</b>	Male	182	45,0
	Female	221	55,0

55.0% of our participants are women and 45.0% are men. Among them, 47.0% is aged 12-24 years old, 35.0% is 25-34 years old, 10.0% is 35-44 years old and the rest is above 45 years old.

**Table 2:** Research questions

		<b>n</b>	<b>%</b>
Did COVID-19 (Coronavirus) affect your normal life?	<b>Yes</b>	273	68,0
	<b>No</b>	16	4,0
	<b>Moderate</b>	114	28,0
How many times a day did you wash your hands before COVID-19 (Coronavirus) outbreak?	1-3	62	15,0
	3-5	89	22,0
	5-7	96	24,0
	7-9	66	16,0
	9+	90	22,0
How many times a day do you wash your hands after COVID-19 (Coronavirus) has spread?	3-5	24	6,0
	5-7	63	16,0
	7-9	69	17,0
	9+	247	61,0
How concerned are you about COVID-19 (Coronavirus)?	Mild & Moderate	155	38,0
	Severe	248	62,0
When do you think that COVID-19 (Coronavirus) will lose its effect?	Within 1 month	26	6,0
	1-3 months later	150	37,0
	3-5 months later	120	30,0
	5-7 months later	41	10,0
	Over 7 months	66	16,0

While 68.0% of the participants think that the COVID-19 pandemic affects their life, 4.0% of them think that it does not affect, and 28.0% of them think that it affects partially. Before COVID-19 outbreak, participants have said that 15.0% of them would wash their hands 1-3 times, 22.0% of them 3-5 times, 24% of them 5-7 times, 16.0% of them 7-9 times and 22% of them 9 times or more. After COVID-19 outbreak, participants have mentioned that 6.0% of them wash their hands 3-5 times, 16.0% of them 5-7 times, 17.0% of them 7-9 times and 61.0% of them 9 or more times. While COVID-19 makes 62.0% of the participants worry, 38.0% of them are not worried. 6.0% of the participants think that the COVID-19 virus will lose its effect within 1 month, 37.0% think after 1-3 months, 30.0% think after 3-5 months, 10.0% think after 5-7 months, 16.0% think that it will lose its impact more than 7 months later.

**Table 3:** Evaluation of anxiety level according to gender

		<i>Anxiety Level</i>				<i>aP</i>
		<i>Severe</i>		<i>Mild &amp; Moderate</i>		
		<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
<b>Gender</b>	<b>Female</b>	154	70,0	67	30,0	<b>0,001**</b>
	<b>Male</b>	94	52,0	88	48,0	

*a*Pearson Chi-Square                      \*\**p*<0,01

The level of anxiety in women was higher than in men ( $p = 0.001$ ;  $p < 0.01$ ). The risk of anxiety of women compared to men has been calculated as 2.1 times higher (95% CI 1.20–3.84).

**Table 4:** Comparison of hand-washing frequency before and after Covid-19 outbreak

			<i>Hand-Washing Frequency After COVID-19</i>					<i>aP</i>
			<i>1-3</i>	<i>3-5</i>	<i>5-7</i>	<i>7-9</i>	<i>&gt;9</i>	
<i>Hand-Washing Before COVID-19</i>	<i>1-3</i>	<i>n</i>	1	15	21	8	17	<b>0,001**</b>
		<i>%</i>	1,6	24,2	33,9	12,9	27,4	
	<i>3-5</i>	<i>n</i>	0	8	27	30	24	
		<i>%</i>	0,0	9,0	30,3	33,7	27,0	
	<i>5-7</i>	<i>n</i>	0	0	15	23	58	
		<i>%</i>	0,0	0,0	15,6	24,0	60,4	
	<i>7-9</i>	<i>n</i>	0	0	0	8	58	
		<i>%</i>	0,0	0,0	0,0	12,1	87,9	
	<i>&gt;9</i>	<i>n</i>	0	0	0	0	90	
		<i>%</i>	0,0	0,0	0,0	0,0	100,0	
<i>aPearson Chi-Square</i>			<b>**p&lt;0,01</b>					

The change in the frequency of hand-washing habit after COVID-19 is statistically significant compared to before COVID-19 hand-washing habit frequency ( $p = 0.001$ ;  $p < 0.01$ ). Cramer’s V coefficient was calculated to examine the relationship between before and after COVID-19 imposed. Cramer’s V: 0.706, indicating the existence of a strong relationship.

**Table 5:** Time assessment of Covid-19 losing its effect according to concern

			<i>Duration of COVID-19 Losing its Effect</i>					<i>aP</i>
			<i>Within 1 month</i>	<i>1-3 months later</i>	<i>3-5 months later</i>	<i>5-7 months later</i>	<i>Longer than 7 months</i>	
<i>Anxiety Level</i>	<i>Mild &amp; Moderate</i>	<i>n</i>	11	68	45	9	22	<b>0,070</b>
		<i>%</i>	7,1	43,9	29,0	5,8	14,2	
	<i>Severe</i>	<i>n</i>	15	82	75	32	44	
		<i>%</i>	6,0	33,1	30,2	12,9	17,7	
<i>aPearson Chi-Square</i>								

Depending on the level of anxiety, the duration that COVID-19 loses its effect and its expectations do not differ statistically ( $p > 0.05$ ). Regardless of anxiety situation, the majority thinks that within 3-5 months the COVID-19 virus will lose its effect.

**Table 6:** Assessment of covid-19 losing its effect according to gender

			<i>Duration of COVID-19 Losing its Effect</i>					<i>aP</i>
			<i>Within 1 month</i>	<i>1-3 months later</i>	<i>3-5 months later</i>	<i>5-7 months later</i>	<i>Longer than 7 months</i>	
<i>Gender</i>	<i>Female</i>	<i>n</i>	14	83	56	32	36	<b>0,016*</b>
		<i>%</i>	53,8	55,3	46,7	78,0	54,5	
	<i>Male</i>	<i>n</i>	12	67	64	9	30	
		<i>%</i>	46,2	44,7	53,3	22,0	45,5	
<i>aPearson Chi-Square</i>			<b>*p&lt;0,05</b>					

According to gender classification, the duration that COVID-19 loses its effect and their expectations differ statistically ( $p = 0.016$ ;  $p < 0.05$ ). The proportion of women who think that COVID-19 virus will lose its effect after 5-7 months is higher than men.

### Conclusions

The women examined in this study have higher prevalence rates of anxiety disorders in the pandemic period compared to men was calculated as 2.1 times higher (95% CI 1.20–3.84). In the study of Wang et al. (2020), it was revealed that women had 3 times higher prevalence rates of anxiety disorders than men (95% CI 1.39–6.52).

In our study, the rate of those who were quite anxious during the pandemic period was 62%. These people stated their beliefs as COVID-19 virus losing its effect within the next 3 to 5 months. COVID-19 pandemic has affected 68% of people's lives. In the study of Pan et al. (2020), while the rate of those who defined anxiety level average and above was 28.8%, more than 70% of the participants stated that they were worried about their family members would catch the COVID-19 disease. Cao et al. (2020) in their study on COVID-19' psychological impact among university students in China, it was concluded that 75% of them had normal levels of anxiety and 21.3% had higher levels of anxiety.

In our study, 25-34 years old and over 45 years old were found to have a high level of anxiety. Qiu et al. (2020) revealed that 35% of the general sample had psychological distress during the COVID-19 outbreak, those between the ages of 18-30 and over 60 years old had the highest level of stress and anxiety, and women had higher levels of anxiety than men.

Washing hand is one of the most effective method to prevent the spread of COVID-19 virus. In our study, the Cramer's V value of the change in hand-washing habit of the participants in before and after COVID-19 outbreak is 0.706, indicates the existence of a strong relationship.

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