Effect of Sociodemographic Variables on Health Anxiety and Death Anxiety Levels in COVID-19 Pandemic

COVID-19 Salgınında Sağlık Anksiyetesi ve Ölüm Anksiyetesi Düzeylerine Sosyodemografik Değişkenlerinin Etkisi

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ABSTRACT

The aim of this study was to evaluate health anxiety and death anxiety levels in adult cases during the COVID-19 pandemic and to evaluate the effect of sociodemographic variables. In this online study, 334 patients over the age of 18 were included. Health Anxiety Scale, Death Anxiety Scale and Sociodemographic Data Form were used in the research. The subscales of health anxiety showed a meaningful correlation between hypersensitivity to bodily findings and negative consequences of the disease and death anxiety. Death anxiety and health anxiety were found to be higher in women. It is statistically significant that health anxiety is more common in individuals aged 20-30 years and women with primary education degrees. Death anxiety was found to be associated with low socioeconomic status and health anxiety was associated with average socioeconomic status. Death anxiety was found to be associated with two of the health anxiety subscales. Sociodemographic variables such as age, gender, educational status and socioeconomic status are thought to be effective in both death anxiety and health anxiety.

Keywords: Covid-19, health anxiety, death anxiety

ÖZ

Bu çalışmada COVID-19 salgını sırasında erişkin vakalarda sağlık anksiyetesi ve ölüm anksiyetesinin alt ölçekleriyle ilişkilendirilmesi ve sosyodemografik değişkenlerin etkisinin değerlendirilmesi amaçlanmıştır. Çalışmaya 18 yaşın üzerindeki 334 hasta internet üzerinden çalışmaya dahil edilmiştir. Araştırmada Sağlık Anksiyete Ölçeği, Ölüm Anksiyete Ölçeği ve Sosyodemografik Veri Formu kullanılmıştır. Sağlık anksiyetesinin alt ölçekleri, bedensel bulgulara aşırı duyarlılık ile hastalığın olumsuz sonuçları ve ölüm anksiyetesi arasında önemli bir korelasyon göstermiştir. Ölüm anksiyetesi ve sağlık kaygısı kadınlarda daha yüksek bulunmuştur. 20-30 yaş arası bireylerde ve ilköğretim mezunu kadınlarda sağlık kaygısı daha sık görüldüğü saptanmıştır. Ölüm anksiyetesi düşük sosyoekonomik durum ile, sağlık anksiyetesi ise ortalama sosyoekonomik durum ile ilişkili bulunmuştur. Sağlık anksiyetesi alt ölçeklerinden iki tanesi ile ölüm anksiyetesi ilişkili bulunmuştur. Yaş, cinsiyet, eğitim durumu ve sosyoekonomik durum gibi sosyodemografik değişkenlerin ölüm anksiyetesi ve sağlık kaygısında etkili olduğu düşünülmektedir.

Anahtar sözcükler: Covid-19, sağlık anksiyetesi, ölüm anksiyetesi

Introduction

In December 2019, a new coronavirus type SARS-CoV-2 first originated from Wuhan, China that became a worldwide pandemic as COVID-19 and has had devastating affects socioeconomically all over the modern civilization including mental health. First Covid-19 case was initially discovered in Turkey on March 11, 2020 (Saglik Bakanligi 2021). Up until now numerous symptoms has been discovered that is related to viral infection such as

most common ones are the loss of taste and smell, tiredness, dyspnea, fever and bilateral lung pneumonia. There were also psychological repercussions such as anxiety, stress and depression as well (Khang et al. 2020). In addition, with the rapid spread capability of the virus, the number of cases and deaths has increased markedly which consequently made people change their living circumstances accordingly regarding their work and social life. The psychological toll of this health crisis may be deepened as the number of deaths, mass unemployment, and

quarantine measures continue to rise at alarming rates. This is also supported by an significant increase (34.1%) in the use of anxiety-related drugs (Khang et al. 2020).

Health anxiety is a common phenomenon consisting of disturbing emotions, physiological arousal and associated bodily sensations, thoughts and images of danger and avoidance, and other defensive behaviors (Asmundson et al. 2004, Abramowitz and Braddock 2008). In pandemics, physical symptoms such as fever, cough, muscle aches can be interpreted as manifestations of health anxiety. In those with severe health anxiety, these aforementioned symptoms could be perceived as over exaggerated. It increases the level of anxiety, allowing it to focus on symptoms that can impair a person's judgment and prevent them from developing appropriate behaviors (Asmundson and Taylor 2020).

Death anxiety is defined as fears, thoughts and belief in death, which are already considered as a part of life (Karaca 2000, Singh et al. 2003). In the published literature, almost all studies demonstrated that there is a positive relationship between death anxiety and somatic symptoms (Aan de Stegge et al. 2018). Traumatic events can reduce people's sense of safety, remind them of the reality of death and have negative effects on their mental health. When it comes to somatic symptoms, physical symptoms are also the most common individual expressions of social problems and emotional distress among different cultural groups (Kirmayer and Young 1998). Moreover, coercive life events and comorbid psychiatric disorders often lead to exacerbation of somatic symptoms (Katon et al. 2001).

COVID-19 has been confirmed as resulting in the deaths of more than 300,000 people worldwide, with approximately 4.5 million cases. It has been published that symptoms such as anxiety, depression, fear, stress and sleep problems are notably more common during the COVID-19 pandemic (Torales et al. 2020). In consistent with the current outbreak previous published papers demonstrated that the symptoms of depression, anxiety and post-traumatic stress disorder were reported between 10% and 18% during and after the Severe Acute Respiratory Syndrome outbreak (Wu et al. 2005).

In the literature, it was determined that the symptoms of anxiety and depression that developed during the pandemic might be affected by variables such as occupation, education and gender (Wang et al. 2021). The current COVID-19 pandemic is also thought to increase health and death anxiety related to gender, age and learning status factors. In terms of psychological effects of the pandemic, it is not surprising that high anxiety levels are detected (Ersoy and Şahin 1999, Özdin and Bayrak Özdin 2020). Given the fact that anxiety and depressive disorders are more common in women, it is hypothesized that women are more affected during outbreaks (Alexander et al. 2007).

In daily routine life, given the ubiquitous death news in the form of daily updates on news and social media, face masks, anti-bacterial sprays, wipes, social distancing and public health campaigns reminds the population a strong correlation with the COVID-19 and death rates.

Despite studies related to COVID-19 and the continuation of the pandemic affect anxiety levels, its relationship with sociodemographic variables is thought to play a supporting role in monitoring and treatment.

The aim of this study is to link health anxiety and death anxiety to subscales of health anxiety and death anxiety in adult cases during the COVID-19 pandemic and to examine the effect of sociodemographic variables.

Materials and Methods

This study is a cross-sectional cohort study which was performed throughout online questionnaires by using available distance communication tools including social media. The data was collected securely through from WhatsApp, Facebook, Instagram and other social media platforms. Self-information scales have been transmitted through various social media channels as well. The sociodemographic data form was developed by researchers and forms uploaded as links to google platform. The inclusion criteria in the study are to be over 18 years of age and to live in Istanbul. All patients live in Istanbul, Turkey at the time of the study was completed. The scales were filled on a voluntary basis, no gifts or money were offered. Data collection time is set to15 minutes for each participant. Written (via internet) and oral consent (via telephone) was obtained from all of the patients included in the study Ethics committee that was approved at the meeting dated 30.04.2020, numbered 2012-12 at Istanbul Gelisim University. At the end all scales and forms were evaluated and assessed by registered clinical psychologist. Originally Four hundred people over the age of 18 were randomly included in the study. Due to lack of completion of the questionnaires, sixty-six people were excluded. Finally 334 adult individuals met all requirements to be included in the study.

Measures

Health Anxiety Inventory

The health anxiety inventory which was developed by Salkovskis and his colleagues contain a18-point health anxiety self-notification scale in order to determine the level of health anxiety. Among them, 14 items on the scale consist of expressions containing quadruple sequence responses questioning the mental state of the patients. In the remaining four questions, he asks patients to think about what their mental state might be like if they have a serious illness and question accordingly. Items for this scale were scored from 0 to 3, and the total was used. Where more than one item was endorsed, the score for the highest was used. Two additional separately scored subscales were included, specifically designed to measure reassurance seeking and avoidance behaviors. The highest score from the scale can be scored 54 points (Salkovskis et al. 2002). Validity and reliability study was carried out by Aydemir et al. (Aydemir et al. 2013).

Death Anxiety Scale

Death anxiety scale was developed by Templer (Templer 1970). It has been developed to measure the attitudes of individuals about

death, their concerns about thinking about death, postmortem and different forms of death. It is answered as in the correct/false form of 15 points in order to determine its severity and level. 15 items were separated to four factors as, cognitive and sensitive, physical changes, time passed, illness and pain. Product-moment correlation coefficient is reported as 0.83, reliability coefficient is 0.76. Internal consistency in Turkish adaptation Cronbach alpha coefficient was found to be 0.72 and test-retest immutable coefficient was 0.80. The reliability coefficient of the Turkish translation was found to be 0.86 (Ertufan 2000). The Turkish validity and reliability study of this Scale was carried out by Akça and Köse (Akça and Köse 2008).

Statistical Analysis

In this study, while analyzing the data obtained, the data were entered into the computer as a numerical expression and statistical analyses were made using the Statistical Program for Social Sciences (SPSS 25.0). Before starting the analysis, the data were examined in terms of normal distribution. In the control of the Pressure-Distortion values performed for the analysis of the normality distribution in the sample group of the research variables, it was observed that all scales showed normal distribution, indicating the normal distribution caused by the values on all scales and subscales between -2, +2. The analysis applied is based on 95% reliability level. T-test applied

to analyze the difference between two parametric groups was used. ANOVA test applied to analyze the difference between parametric multiple groups was used. The relationship between the scales was tested with Pearson Correlation analysis. Multiple Linear Regression was used to measure the effect of arguments on the dependent variable. It was taken as p<0.05 for statistical signability. If we summarize the power analysis of our study; according to the sample account formula, when the sample in the study was calculated in the 95% confidence bounds +-5% margin of error n= 1.96^2 * 0.50 * 0.50 / 0.05^2 = 384. Using this form, we calculated +-5% margin of error in the 95% confidence bounds as 384 and 334 people were included in the study. The sample account varies from 5 to 20 per proposition at least, but should not fall below 10. The two surveys used were 330 people, 10 times the 15+18 proposition. In addition, 334 surveys were found appropriate because they were requested in the analysis of breakdowns such as gender, age, income level, etc.

Results

The gender distribution of those included in the study consisted of 77.2% female and 22.8% male (Table 1). The average health anxiety scale was 14.28 (ss=7.01), the mean sensitivity to bodily symptoms was 11.46 (ss =5.75), the average negative expectations of the disease were 2.83 (ss=2.15), and the death anxiety scale

Table 1. Distribution of sample group by demographic variables		f	%
Gender	Female	258	77.2
	Male	76	22.8
	Total	334	100.0
Age	20-30	141	42.2
	31-40	84	25.1
	41-50	60	18.0
	Above 50	49	14.7
Education	Primary school	10	3.2
	High school	44	13.2
	College	280	83.8
Financial situation	2350TL and below	67	20.1
	2350-10000TL	237	71.0
	Above 10000TL	30	9.0
f: frequency, TL: Turkish Liras			

Table 2. Descriptive Statistics of Death Anxiety scale and health anxiety inventory subscales	N	Min	Maks	$\overline{X}$	Ss.
Health Anxiety Inventory					
Hypersensitivity to Bodily Symptoms	334	0.00	34.00	5.75	11.46
Negative Consequences of The Disease	334	0.00	9.00	2.83	2.15
Death Anxiety Scale	334	0.00	14.00	7.36	2.90
N: Number of observations, Min: Minimum, Max: Maximum, X: Sample mean, Ss: Sum of squares					

average was 7.36 (ss=2.90) (Table 2).

Pearson correlation analysis used to measure the relationship between the health anxiety scale and the lower scales of the death anxiety scale, It is seen that there is a high positive relationship between the health anxiety scale total score and the death anxiety scale score (r=,519 p<0.001) (Table 3).

There is a moderate and positive relationship between the Hypersensitivity Subscale subdivision score and the death anxiety scale score (r=,493 p<0.01).

Moderate and positive relationship was found between the lower scale of negative expectations against diseases and the death anxiety scale score (r=,373 p<0.01).

It is seen that the subscales of health anxiety scale significantly fatigue death anxiety (R2=0,269, p>0.01). Multiple Linear Regression was used to measure the effect of arguments on the dependent variable. Multiple Linear Regression was used to measure the effect of arguments on the dependent variable. For statistical signation, it is considered p<0.05. Reference values of Cohen's correlational power; 0.10-0.29 weak, 0.30-0.49 medium, 0.50-1.00 high. The afforded variables account for approximately 27% of the total variance in death anxiety. According to β, the order of influence strength is hypersensitivity to bodily symptoms, negative consequences of the disease as a result of the t-test of regression coefficients, hypersensitivity to bodily symptoms, negative consequences of the disease is a significant fatigue for death anxiety and its effects are positive (Table 4). As a result of the independent group t-test to find the significant difference in the sample group's scores from the death anxiety scale and health anxiety inventory, it is seen that there is a significant difference in the level of p<0.05 due to the higher score of women among the groups (Table 5).

Table 3. Pearson correlation analysis for the relationship between health anxiety inventory and subscales scores and death anxiety scale scores

		Ölüm anksiyetesi ölçeği
Health Anxiety Inventory	r	.519**
	p	<0.001
	n	334
Hypersensitivity to Bodily Symptoms	r	.493**
	p	<0.001
	n	334
Negative Consequences of The Disease	r	.373**
	p	<0.001
	n	334
r: Pearson's correlation coefficient, p: probability value, n: number of observations		

Table 4. Multiple regression table for scale of health anxiety inventory impact on death anxiety scale

	B	Standard error	T	p	R²	F	p
(Constant)	4.310	0.309	13.940	0.000	0.269	61.035	0.000
Hypersensitivity to Bodily Symptoms	0.205	0.027	0.407	7.673	0.000		
Negative Consequences of The Disease	0.249	0.072	0.185	3.482	0.000		
B: Standardized beta, p: Probability value, R2: Coefficient of determination, f: Frequency							

Table 5. Independent T-Test Analysis for Death Anxiety Scale and Health Anxiety Inventory scores by gender variable

		$\overline{X}$	Ss.	T	Sd.	p
Death Anxiety Scale	Female	7.73	2.91	4.376	332	0.000
	Male	6.12	2.48			
Health Anxiety Inventory	Female	15.03	7.19	3.674	332	0.000
	Male	11.74	5.70			
Hypersensitivity to Bodily Symptoms	Female	12.12	5.97	4.006	332	0.000
	Male	9.18	4.24			
Negative Consequences of The Disease	Female	2.91	2.11	1.280	332	.....0.201
	Male	.... 2.55	2.26			
X: Aritmetik ortalama, Ss: Kareler toplamı, Sd: Standart sapma, p: Olasılık						

The sample group had a significant difference in the health anxiety inventory by age variable (F=9.784, p<0.05). Before proceeding to the post hoc test, Levine's test determined that the variances of group distributions were homogeneous (p=.405). According to the age variable of the sample group, there is a significant difference in the subscale of hypersensitivity to bodily symptoms (F=7.973, p<0.05). Before proceeding to the post hoc test, Levine's test determined that the variances of group distributions were homogeneous (p=.161). According to the age variable of the sample group, there is a significant difference in the lower dimensions of negative expectations of the disease (F=6<769, p<0.05) (Table 6). According to the socioeconomic status variable of the sample group, there is a significant difference in the lower dimension of death anxiety of the disease (F=3,431, p<0.05). As a result of the Scheffe test, it is seen that there is a statistically significant difference due to the fact that there are more points than other groups of groups with incomes of 2350 TL (minimum wage) and six incomes (p<0.05). In the sample group, there is a significant difference in the health anxiety inventory according to the socioeconomic variable (F=8,773, p<0.05). As a result of the Scheffe test, it is seen that there is a statistically significant difference due to the fact that it scored 2350 TL (Minimum Wage) and more than the other groups of six groups (p<0.05) (Table 7).

Discussion

This study aims the relationship between the health anxiety and death anxiety in adult individuals during the COVID-19 virus outbreak in addition to their relationship with sociodemographic factors. Anxiety and fear that occur in those who experience health anxiety negatively affect their lives. Health anxiety may occur in adulthood due to severe diseases in childhood and a disease in family members. Severe diseases, which cause especially restlessness and pain in childhood, increase the anxiety situation against the diseases that may occur.

During the COVID-19 pandemic, people were found to have higher death anxiety and health anxiety. Similar results were obtained with the findings of Ozturk's studies with death anxiety and Yilmaz's health anxiety (Bahadır Y. et al. 2018, Öztürk et al. 2011). The illness or death of relatives triggers health and death anxiety in individuals. Adverse health conditions have been reported to increase health anxiety, as well as death anxiety (Fallon et al. 1996).

In our study, it was found that death anxiety increases at a high rate as health-related anxiety increases. In particular, hypersensitivity to bodily symptoms and negative consequences of the disease were found to be related to subtests and death anxiety. Templer mentioned the relationship between death anxiety and somatic findings and stated that there was a positive correlation (Abdel-Khalek and Lester 2009). Therefore, it was found that the majority of patients who reported somatic symptoms were more related with death anxiety (Dadfar and Bahrami 2016).

The higher level of health anxiety in women suggests that the level of anxiety in women is generally higher than in men, and may also be associated with biological, sociocultural and cognitive factors (MacSwain et al. 2009, Wilhelmsen 2012). Similarly, the

Table 6. ANOVA Analysis for the difference between Health Anxiety Inventory and subscale scores by age variable								
	N	$\overline{X}$	Ss.	TSS	Sd.	MS	F	p
Health Anxiety								
20-30yo	141	16.03	7.35	1335.2	3	445.0	9.784	0.000
31-40	84	14.98	6.93	15012.6	330	45.4		
41-50	60	11.87	5.37	16347.979	333			
50 ve üzeri	49	11.04	6.08					
Toplam	334	14.28	7.01					
Hypersensitivity to Bodily Symptoms								
20-30	141	12.79	6.23	743.5	3	247.860	7.973	0.000
31-40	84	11.87	5.51	10259.247	330	31.089		
41-50	60	9.77	4.44	11002.826	333			
50 ve üzeri	49	8.96	4.88					
Toplam	334	11.46	5.75					
Negative Consequences of The Disease								
20-30	141	3.23	2.13	88.887	3	29.6	6.769	0.000
31-40	84	3.11	2.27	1444.386	330	4.3		
41-50	60	2.10	1.73	1533.272	333			
50 ve üzeri	49	2.08	2.05					
Total	334	2.83	2.15					
n: Number of observations, X: Sample mean, Ss: Sum of squares, TSS: Total sum of squares, Sd: Standart deviation, MS: Mean of squares, f: Frequency, p: Probability value								

Table 7. ANOVA Analysis for the difference between Health Anxiety Inventory and subscale scores by socieconomic variable

Health Anxiety Inventory

	n	$\overline{X}$	Ss.	TSS	Df	MS	f	p
2350 TL (Min. Wage) and below	67	16,9	7,81	822,9	2	411,4	8,7	0,000
2350-10.000 TL	237	13,9	6,76	15525	331	46,90		
10,000 TL and above	30	4,94	11,03	16347,9	333			
Hypersensitivity to Bodily Symptoms								
2350 TL (Min. Wage) and below	67	13,67	6,54	542,3	2	271,1	8,5	0,000
2350-10.000 TL	237	11,15	5,52	10460,4	331	31,6		
10,000 TL and above	30	8,93	3,89	11002,8	333			
Negative Conseq. of The Disease								
2350 TL and above	67	3,28	2,22	30	2	15	3,3	0,038
2350-10.000 TL	237	2,79	2,14	1503,1	331	4,5		
10,000 TL and above	30	2,10	1,86	1533,2	333			
n: Number of observations, X: Sample mean, TSS: Total sum of squares, Df: Degrees of freedom, MS: Mean of squares, f: Frequency, p: Probability value								

higher anxiety of death in women may be due to the fact that they are more prone to emotional responses such as fear and anxiety, and do not hide their feelings about it, due to the fact that they are more likely to follow what is expected of them in cultural elements.

In parallel with the literatur, health anxiety is rare in older individuals compared to age variable, while it is more common in young individuals (Neimeyer et al. 2004, Şimşekoğlu and Mayda 2013). Healthy eating and improving living conditions as we get older, older individuals having more experience with health can reduce health anxiety, while the anxiety of young individuals losing their health and not being able to carry out their plans increases health anxiety(Wink and Scott 2005). In parallel with the literature, health anxiety and death anxiety are more common in this study between the ages of 20 and 30 than in other age groups (Russac et al. 2007, Neimeyer and Van Brunt 2018). A study conducted in a smaller group in Turkey found no significant difference in variables between 50-year-olds aged 18-49 and over (Özdin and Bayrak Özdin 2020). This finding may be related to the fact that the importance given to health in Turkey does not change with age.

In accordance with the literature women's death anxiety was found to be higher than men's (Saatchi 2019). There are also studies that argue that men have higher mortality anxiety, in stark contrast to this result supported by the literature (Momtaz et al. 2015, Çınar 2015). One of the reasons that death anxiety is more common in women is interpreted as the idea that many things will be missing after death due to their responsibilities towards their children and spouses (Bouton et.al. 2001).

When reviewed in the literature, it is seen that people who work and make money have less anxiety about death (Shakil et al. 2022). In this study it was found that death anxiety increased as income decreased. The fear that he will not be able to afford to reach the health institution or will not receive the necessary treatment due to lack of funds may be triggering fear of death.

As a result, death and health anxiety are associated with hypersensitivity to bodily symptoms and lower subscales of negative consequences of the disease. Results suggest that the age, gender educational status and socioeconomic status regarding COVID-19 seem to be closely associated with health and death anxiety symptoms.

The most important limitation of this study is that it is cross-sectional and is based on the self-report scales of data collection tools. Since there can be no cause-and-effect relationship in cross-sectional research, follow-up studies are needed in the larger sample. No cookies or IP checks were applied in this study. Working with a larger sample group, including the control group, would be useful for achieving more general results.

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