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Evaluation of the Relationship of Fatigue, Anxiety and Depression Levels in Individuals with the Precautions Taken in the COVID-19 Pandemic Process

Hasan Kucukkendirci, Mehtap Yucel, Yasemin Durduran

Necmettin Erbakan University, Faculty of Medicine, Department of Public Health, Konya, Türkiye.

Correspondence Author: Mehtap Yucel
E-mail: mhtpyucel@hotmail.com
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ABSTRACT

Objective: This study aims to evaluate the effects of the COVID-19 process and the measures taken on fatigue, anxiety and depression levels in individuals, and the factors that may cause this effect.

Methods: The study is of cross-sectional type. A total of 281 participants who applied to the pandemic outpatient clinic were included in the study. Data collection form with 27 questions and Hospital Anxiety and Depression Scale (HADS) with 14 questions were used in the study. Relationships between data were evaluated with t-test and chi-square test in independent groups. The importance levels of the factors affecting the anxiety and depression scores were determined by the Chaid Analysis. Statistically, cases with p<.05 were considered significant.

Results: A total of 281 participants, with a mean age of 40.09±12.35 years and 56.2% women, were included in the study. The mean depression score of the participants in HADS was 7.43±3.85. The mean anxiety score was 8.11±4.04. 61.6% of the participants had depression and 31.0% had anxiety. According to Chaid's analysis, the most effective factor on anxiety and depression scores was that the fear of contracting the COVID-19 infection exhausted the individual.

Conclusion: As a result of the research, it was found that the frequency of depression and anxiety was high in patients who applied to the pandemic outpatient clinic. It was determined that more than half of the participants were afraid of catching an infection and this fear caused fatigue in them. Mental health should not be ignored during the pandemic period and both physical and mental health of people should be protected with holistic approaches.

Keywords: Anxiety, depression, fatigue, Hospital Anxiety and Depression Scale, prevention.

1. INTRODUCTION

On 31 December 2019, the World Health Organization (WHO) China Country Office reported cases of pneumonia of unknown etiology in Wuhan, China (1,2). On January 7, 2020, the causative agent of these pneumonia cases was identified as a new coronavirus (2019-nCoV) that has not been detected in humans before. Later, the name of the 2019-nCoV disease was accepted as Coronavirus disease-19 (COVID-19) (3). COVID-19 infection, whose main clinical symptoms include fever, weakness, myalgia, dry cough and shortness of breath, was defined as a global epidemic (pandemic) by the World Health Organization on March 11, since it was seen in 113 countries outside of China, where the epidemic started (3). The first COVID-19 case in Turkey was seen on 11 March 2020 (4). In the process since the first case was detected, the main country strategy regarding the epidemic has been to reduce the incidence of cases and slow the rise in the epidemic curve with public health measures (4).

The COVID-19 pandemic affects societies not only in the field of health, but also in the economic and psychosocial field. In the face of such a major global epidemic, many people worry about the health of themselves and their families, and may face difficulties related to work or financial issues (5). Not knowing when the epidemic will end, fear of catching infection, lack of a definitive treatment for the infection, exposure to the ever-changing flow of information about the pandemic and COVID-19 infection, weakening of interpersonal relations due to social isolation adversely affect the mental health of the society. These effects may worsen the diagnosed psychiatric disorder or pre-existing psychiatric disorders (6). Studies show that the frequency of disorders such as anxiety, depression, fear, stress and sleep problems increases during the COVID-19 epidemic (6-9).

Psychosocial factors play an important role during epidemics. For example, societies' attitudes towards masks and social distance, their perspective on vaccination have important effects on the spread of infection or its rapid control (10). At the beginning of the pandemic, the diagnosis, treatment and prevention of COVID-19 infection were focused on and intensive studies were carried out in these areas. With the prolongation of the pandemic period, attention was drawn

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to mental health and studies on the effects of the pandemic on human psychology increased (11).

Fatigue, one of the known symptoms of COVID-19, is a common complaint in the general population, as well as a common symptom of various physical and psychiatric disorders. Studies have shown that fatigue is affected by many factors, including age, gender, physical condition, psychological conditions, and personality traits (12). Rules such as physical and social isolation, constant use of masks, and paying more attention to hygiene rules than usual, which entered our lives with the COVID-19 pandemic, can cause fatigue (13,14).

This study aims to determine the effects of knowledge, attitudes, behaviors and precautions regarding COVID-19 on the fatigue, anxiety and depression levels felt in individuals who applied to the pandemic outpatient clinic. It also aims to determine the risks and protective factors related to felt fatigue, anxiety and depression levels.

2. METHODS

2.1. Study Type

The study is a cross-sectional designed epidemiological study.

2.2. Ethical Approval

The Turkish Ministry of Health, General Directorate of Health Services approved the study protocol (Approval Date/Number: 22.01.2021-01-22-T18_28_33). In addition, permission was obtained from the Ethics Committee of Necmettin Erbakan University Meram Faculty of Medicine (Date: 5 February 2021, No: 2021/3068), and the hospital's chief physician. Before starting the study, all participants were informed about the details of the study and their verbal consent was obtained.

2.3. Sample Size

The population of the study consisted of patients who applied to the pandemic outpatient clinic of Necmettin Erbakan University Meram Medical Faculty Hospital. Based on the-chi-square test in the G Power program, the sample size was calculated to be at least 207 with 0.05 type 1 error, 95% power, medium effect size (0.3), and maximum degree of freedom of 4. Data from the study sample were obtained by simple random sampling method.

2.3. Data Collection Tools

After the literature review, a data collection form was prepared for the research. The data collection form consists of 41 questions and 3 parts. The first part of the form, consisting of 9 questions, is the personal information form created to obtain the demographic information of the participants. The form includes questions about age, gender, educational status, marital status, occupation, income status and presence of chronic disease.

The second part consists of 18 questions. In this section, sources of information about the pandemic, feeling tired against the measures taken during the pandemic process, and being afraid of contracting COVID-19 were questioned. In this section, information questions about the pandemic were also given and the participants were asked to answer these questions.

The second part, consisting of 14 questions, questions the measures taken during the COVID-19 pandemic and the effects of these measures on individuals. The third part with 14 questions includes the Hospital Anxiety and Depression Scale (HADS). HADS is a self-administered scale. It was first developed by Zigmond and Snalth (15), and its Turkish validity and reliability study was performed by Aydemir et al. (16). The scale consists of 14 questions, 7 of which measure anxiety and 7 of which measure depression. For Turkish people, the anxiety cut-off score was 10 and the depression cut-off score was 7. The minimum score that can be obtained from both the anxiety and depression subscales of the scale is 0, and the maximum score is 21 (16).

2.4. Procedure

Study data were collected after ethical approval was obtained. The study was conducted on male and female patients who applied to the pandemic outpatient clinic between 01.03.2021 and 15.04.2021 and gave verbal consent to participate in the study, and 281 people were included. Participants who did not give verbal consent to participate, had mental disorders that would prevent communication, and had deficiencies in the data collection form were not included in the study. Data collection forms were filled by the participants in accordance with the pandemic rules. Each form was completed in an average of 15 minutes.

2.5. Statistical Analysis

Data entry and statistical analysis were performed using the SPSS for Windows version 18.0 (SPSS Inc. Chicago, IL, USA) package program. In summarizing numerical data; arithmetic mean±standard deviation and median (1st quarter-3rd quarter) values were used. The numbers and percentages were used to summarize categorical data. In the evaluation of numerical data conforming to the normal distribution, independent-samples t-test was used. The relationship between the anxiety and depression scores of the participants was evaluated with Pearson Correlation analysis. One-way Anova test was used to determine whether the anxiety and depression levels of the participants differed according to the information sources. Post hoc LSD test was performed to determine from which group the significant difference originated. The importance levels of the factors affecting the anxiety and depression scores of the participants were determined by the Chaid Analysis. The distribution

of categorical data was evaluated with the chi-square test. Statistically, cases with p<.05 were considered significant.

3. RESULTS

3.1. Sociodemographic Characteristics of the Participants

A total of 281 people, with a mean age of 40.09±12.35 years and 56.2% women were included in the study. Sociodemographic characteristics of the patients are presented in Table 1.

Table 1: *Sociodemographic characteristics of the participants.*

Demographic Variables		n	%
Gender	Female	158	56.2
	Male	123	43.8
Marital Status	Married	213	75.8
	Single	68	24.2
Educational Status	Middle School and Below	83	29.5
	High School and Above	198	70.5
Job	Officer	64	22.8
	Employee/Small Business	69	24.6
	Not Working	87	31.0
	Other	61	21.7
Family Structure	Nuclear Family	225	80.1
	Extended Family	34	12.1
	Alone	22	7.8
Living Place	Provincial Center	211	75.1
	Town/Village	70	24.9
Chronic Disease	No	188	66.9
	Yes	93	33.1
Change In Income During The Pandemic Period	Decreased	119	42.3
	Unchanged/Increased	162	57.7

The patients included in the study received the most information about the precautions to be taken against COVID-19 infection from television/newspaper (n=124; 44.1%), social media/internet (n=109; 38.8%) and health personnel (n=37; 13.2%) and other people (n=11; 3.9%). A total 205 (73.0%) participants stated that the measures taken against transmission routes (such as mask, distance, disinfection) during the COVID-19 pandemic caused physical, social or psychological fatigue. Of the patients who applied to the pandemic outpatient clinic, the rate of those who stated that they were afraid of contracting COVID-19 infection was 82.6% (n=232). Of these 232 patients who stated that they were afraid, 61.2% (n=172) stated that this fear tired out them, and 48.0% (n=135) believed that this fear and fatigue would be overcome by vaccination.

3.2. Prevalence of Depression and Anxiety of Participants

According to the HAD scale, 61.6% of the participants had depression and 31.0% had anxiety. The mean depression score of 281 participants from HADS was 7.43±3.85; the mean anxiety score was 8.11±4.04. There was a statistically significant positive and high correlation between the anxiety and depression scores of the participants (r=0.611, p<.001).

3.3. Investigation of Depression-Related Characteristics of Participants

When the characteristics of the patients that may be related to depression were investigated, we determined that the depression scores of those living in rural areas were higher than those living in the urban (Table 2).

Table 2: *Factors that may affect participants' tendency to depression.*

Features		Depression score					
		<7 points		≥7 points			
		n	%	n	%	$\chi 2$	p
Living place	Provincial Center	91	43.1	120	56.9	**7.886**	**.005**
	Town/Village	17	24.3	53	75.7*		
Change In Income During The Pandemic Period	Decreased	39	32.8	80	67.2	2.796	.095
	Unchanged/ Increased	69	42.6	93	57.4		
Did the measures taken during the pandemic period cause physical or psychological fatigue in you?	Yes	64	31.2	141	68.8*	**16.673**	**<.001**
	No	44	57.9	32	42.1		
Are you afraid of contracting COVID-19 infection?	Yes	77	33.2	155	66.8*	**15.465**	**<.001**
	No	31	63.3	18	36.7		
Does the fear of getting sick tire you? (n=232)	Yes	46	26.7	126	73.3*	**12.460**	**<.001**
	No	31	51.7	29	48.3		
Can the fear of getting sick go away with the vaccine? (n=232)	Yes	53	39.3	82	60.7	**5.364**	**.021**
	No	24	24.7	73	75.3*		
I support the curfew restrictions.	Yes	86	38.2	139	61.8	0.021	.884
	No	22	39.3	34	60.7		
When I come into contact with someone outside, I remember the COVID-19 disease.	Yes	93	36.6	161	63.4	3.700	.054
	No	15	55.6	12	44.4		
I apply personal hygiene measures after contact.	Yes	103	38.3	166	61.7	0.055	.518
	No	5	41.7	7	58.3		
I clean the products bought after shopping with soap or disinfectant.	Yes	40	28.0	103	72.0*	**13.469**	**<.001**
	No	68	49.3	70	50.7		
If I go to the markets, I pay attention to the time I spend there.	Yes	88	36.1	156	63.9*	**4.394**	**.036**
	No	20	54.1	17	45.9		
If I catch COVID-19, I think I will recover quickly with effective treatment.	Yes	84	42.4	114	57.6	**4.510**	**.034**
	No	24	28.9	59	71.1*		
I think the mask rule is exaggerated.	Yes	16	40.0	24	60.0	0.048	.826
	No	92	38.2	149	61.8		
I am tired of washing my hands frequently due to the pandemic.	Yes	23	25.3	68	74.7*	**9.849**	**.002**
	No	85	44.7	105	55.3		
I am tired of using masks due to the pandemic.	Yes	29	28.2	74	71.8*	**7.260**	**.007**
	No	79	44.4	99	55.6		
Do you see physical distancing as isolation?	Yes	89	37.7	147	62.3	0.325	.569
	No	19	42.2	26	57.8		

* indicates the group from which the statistical difference originates.

There was no statistically significant difference between depression and other variables such as gender, age, marital status, educational status, occupation, family structure, presence of chronic disease, and sources of information about the disease.

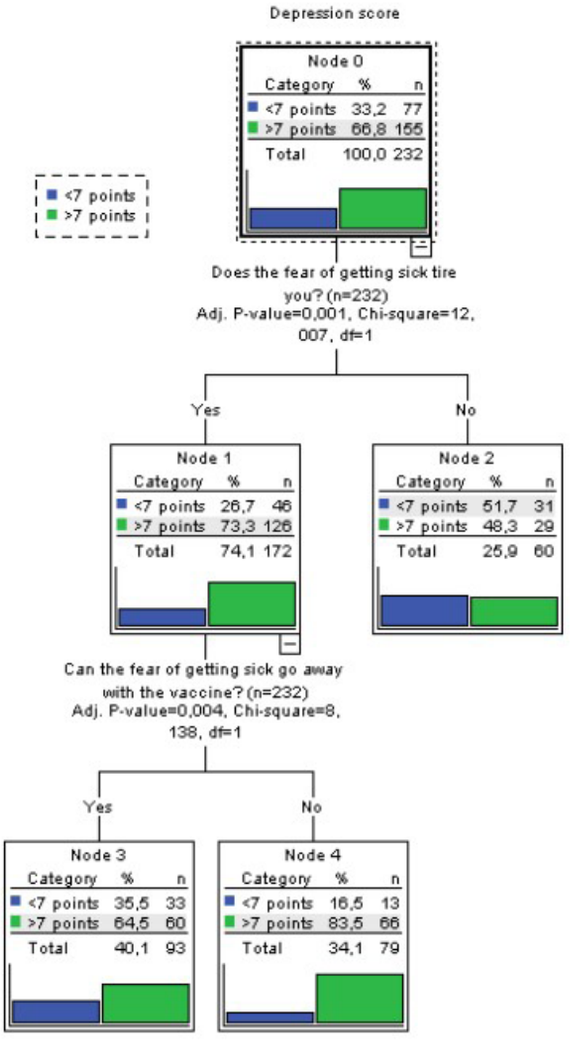

Figure 1. *The results of the Chaid analysis of the factors affecting the depression score.*

The independent variables affecting the depression score as a result of the Chaid analysis are given in Figure 1. According to the Chaid analysis, 61.6% of the participants had a depression score of 7 and above. We found that the most important factor on the depression score of the participants included in the study was that the fear of catching the COVID-19 infection exhausted the participants. While the depression score of 73.3% of those who thought that the fear of COVID-19 infection made them tired was 7 and above, the depression score of 56.9% of those who thought that the infection did not tire them was below 7. Among the participants who stated that the fear of catching the COVID-19 infection exhausted them, 83.5% of those thought that this fear would not be cured by vaccination had a depression score of 7 and above, while this rate was 64.5% of those who thought that they would be cured by vaccination.

3.4. Investigation of Anxiety-Related Characteristics of Participants

When the anxiety-related characteristics of the participants were investigated, it was observed that the mean age of those with high anxiety scores (36.68±11.59) was statistically significantly lower than the mean age of those with low anxiety scores (41.61±12.40) (t=3.141, p=.002). In addition, it was determined that the anxiety scores of the participants whose education level was secondary school or below were significantly lower than those whose education level was high school and above (Table 3).

A statistically significant difference was found between anxiety scores according to information sources about COVID-19 infection (F=7.195, p<.001). The difference is that the anxiety score of those who get information from television or newspaper ($\bar{x}$=7.22) is lower than those who get information from social media ($\bar{x}$=9.18) and other people ($\bar{x}$=10.72), and those who get information from social media ($\bar{x}$=9.18) have a lower anxiety score than those who get information from social media ($\bar{x}$=9.18). It was due to the fact that the employees ($\bar{x}$=7.16) were higher than those who had information. There was no statistically significant difference between anxiety and other variables such as gender, marital status, place of residence, education level, occupation, family structure and presence of chronic disease (p>.05).

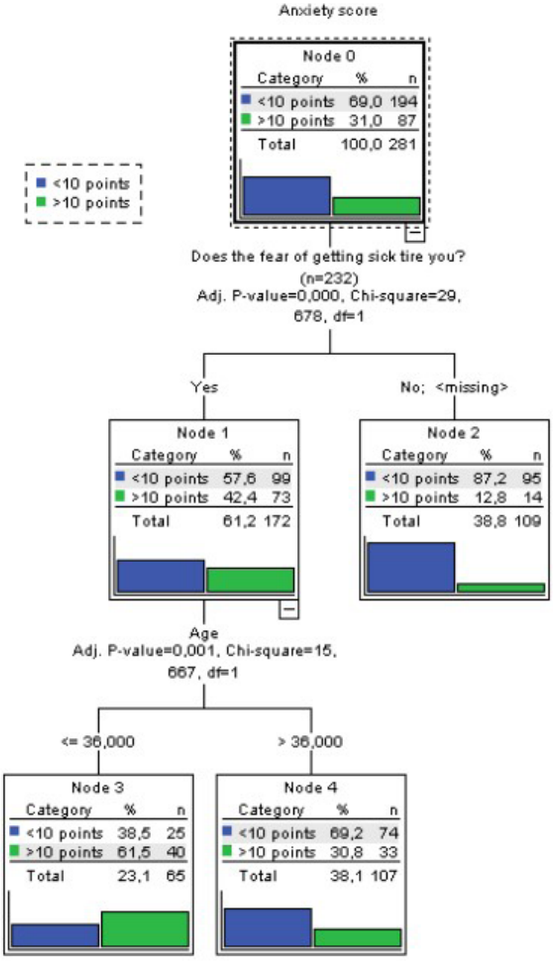

Figure 2. *The result of the Chaid analysis of the factors affecting the anxiety score.*

The result of the Chaid analysis of the independent variables affecting the anxiety score is given in Figure 2. According to the Chaid analysis, 69.0% of the participants had an anxiety score below 10, and 31.0% had an anxiety score of 10 and above. In the study, it is observed that the most important factor on the anxiety score is the fear of contracting the COVID-19 infection. While 42.4% of those who thought they had a fear of contracting COVID-19 infection had an anxiety score of 10 and above, 12.8% of those who thought they were not tired had an anxiety score of 10 and above. Of the participants who stated that the fear of contracting the COVID-19 infection exhausted them, 61.5% of those aged 36 and under had an anxiety score of 10 and above, while only 30.8% of those younger than 36 had an anxiety score of 10 and above.

4. DISCUSSION

It is inevitable that the COVID-19 pandemic, which affects large masses and causes more than 5 million deaths, will have psychological effects on almost all individuals. In this study, we aimed to evaluate the effects of the COVID-19 process and the measures taken on the fatigue, anxiety and depression levels in individuals, and the factors that may cause this effect. Approximately three-quarters of the 281 people who applied to the pandemic outpatient clinic and were included in the study stated that they felt physically, socially or psychologically tired against the measures taken due to the COVID-19 pandemic. In addition, 82.6% of the participants were afraid of getting an infection. In the study conducted by Morgül et al. in Istanbul with 3672 participants, it was found that 64.1% of the participants had psychological fatigue (5). In this study, it is thought that the reason for the high level of fatigue is that the study was conducted only on patients who applied to the pandemic outpatient clinic, fatigue was a subjective perception and patients were left to their own statements.

At the end of the study, the prevalence of depression was found to be 61.6% and the prevalence of anxiety was 31.0% in patients who applied to the pandemic outpatient clinic. In various studies conducted during the pandemic period, the lowest prevalence of depression was found to be between 19.0% and 57.4% (17-21). During the pandemic period worldwide, the prevalence of anxiety was found to be the lowest 14.0% and the highest 45.1% (17-21). According to the global health estimates published by WHO in 2017, it was estimated that the global population diagnosed with depression and anxiety levels were 4.4% and 3.6% in 2015, respectively (22). These results indicated that the rates are higher than the general population (22) both in this study and in other studies conducted during the pandemic period. This shows that the pandemic period has significant effects on people's mental health. Depression and anxiety occur with a complex interaction of social, psychological and biological factors. People with adverse living conditions (unemployment, age, psychological trauma) are more likely to suffer from psychiatric disorders (23). Increasing unemployment during the pandemic period, losing relatives due to infection, social isolation, fear of death, etc. The increase in conditions that predispose to mental diseases can be associated with the increase in the prevalence of these diseases.

In a study conducted in China, the prevalence of depression in urban residents was found to be lower than in rural areas (24). Similar results were obtained in our study. It was thought that the reason for this was that people experienced and accepted the COVID-19 pandemic faster due to the high risk of disease and the number of cases in the city center.

According to research by Naragon and Wu, a moderate level of anxiety, which is a response to acute stress, is seen as beneficial and cause more attention to COVID-19 precautions (25,26). Similarly, in this study, participants unafraid of contracting COVID-19 infection have a statistically significant and lower anxiety score compared to those who are afraid of getting caught. A similar significant and lower anxiety score was observed when those who do not pay attention to the time they spend in the markets, participant think that the mask rule is exaggerated compared to those who do not think and those who are not tired of washing their hands frequently.

Similar to the literature, among the patients included in the study; the anxiety scores of those with secondary education and below were statistically significant and lower than those with high school or higher education (27). It was thought that this was due to the fact that individuals with a high level of education paid more attention to the scientific and academic warnings published about the COVID-19 pandemic and saw the COVID-19 infection as a more serious problem.

In the study, the most important independent variables on depression were the fear of contracting COVID-19 infection, tiring individuals, and the thought of whether this fear could be cured by vaccination. On anxiety, these variables were the fatigue of individuals by fear of contracting COVID-19 infection and age. In a study investigating the prevalence of anxiety and depression during the COVID-19 pandemic in Pakistan, it was reported that the prevalence of anxiety is high under the age of 35 (19). Similarly, studies have found that fear of being infected is associated with anxiety and depression (17,18). The first time individuals encounter a situation that threatens public health, such as a pandemic, increases the fear of contracting the disease. The inability to find a definitive treatment for COVID-19 infection, its different course in each individual, and the inability to predict the future make this fear permanent and have an impact on mental health.

Our study had some limitations. First, due to the cross-sectional design of the study, the long-term causal relationships between various factors associated with anxiety and depression could not be evaluated. Second, our study findings may not be generalizable to the entire urban population of the country, as this study was conducted in a specific hospital and a specific outpatient clinic. Third,

HADS, which is used to evaluate the prevalence of anxiety and depression, is a self-administered screening tool and is not used for diagnostic purposes. Therefore, studies using diagnostic tools such as the Structured and Clinical Interview for DSM or the Mini International Neuropsychiatric Interview are recommended to confirm our findings. Despite the above limitations, this study provides important data to contribute to the literature on the prevalence of anxiety and depression during the COVID-19 pandemic and the factors that may be associated with it.

5. CONCLUSION

As a result of the research, it was found that the frequency of depression and anxiety was high in patients who applied to the pandemic outpatient clinic. The prevalence of depression was 61.6% and the prevalence of anxiety was 31.0% in 281 people included in the study. The most important variable that affected the anxiety and depression of the participants was that the fear of contracting COVID-19 exhausted them. Giving detailed, up-to-date and accurate health information to individuals with fear and the feeling of fatigue due to it, anxiety and depression prevalence, which is higher than the literature, and explaining the scope and limitations of the measures taken for protection (hand washing, mask, distance) can reduce the depression and anxiety levels of the pandemic on people. Controlling these levels is important in terms of taking individual precautions and awareness of the control measures implemented throughout the country. Vaccination, which is the most important method in ending the pandemic process, may be one of the most important factors in reducing the level of depression in humans. As a result, a holistic approach to the pandemic should be provided, and both the mental and physical health of the people should be taken into account.

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