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Araştırma Makalesi / Research Article

The Relationship Between Noncommunicable Disease Status in Adults and Fear of Contagion/Transmission and COVID-19 Burnout

Yetişkinlerde Bulaşıcı Olmayan Hastalık Durumunun Bulaşma/Bulaştırma Korkusu ve COVID-19 Tükenmişliği ile İlişkisi

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Abstract:
Objective: This study was conducted to examine the factors associated with the fear of contagion/ transmission and the level of COVID-19 burnout of noncommunicable diseases in adults.
Method: The research was conducted with a cross-sectional and correlational design. The research was conducted with 312 people who had a noncommunicable disease in themselves or their families. A questionnaire form, Fear of Contagion/Transmission Scale, and COVID-19 Burnout Scale were used to collect data.
Results: The mean score of the participants' fear of contagion/transmission was 92.12±14.24 and the mean COVID-19 burnout score was 24.51±9.12. It was found that the mean scores of the contagion/transmission scale were higher in people who were married and had a university education. It has been determined that the mean scores of the COVID-19 burnout scale are higher in females, singles, those with less income than their expenses, those who evaluate their health status as bad, and those who live in the same house with their family members with the disease. In addition, it was determined that there was a positive correlation between the total mean score of the fear of contagion/transmission scale and the average score of the COVID-19 burnout scale ($p<0.05$).
Conclusions: It is recommended that health professionals should address the fear and burnout experienced by people with noncommunicable diseases in line with disease management and develop noncommunicable disease-specific interventions in case of possible pandemics.

Key Words: Noncommunicable disease; COVID-19; fear of contagion; fear of transmission; burnout

Özet:
Amaç: Bu çalışma yetişkinlerde bulaşıcı olmayan hastalık durumunun bulaşma/bulaştırma korkusu ve COVID-19 tükenmişlik düzeyi ile ilişkili faktörleri incelemek amacıyla yapılmıştır.
Yöntem: Araştırma kesitsel ve ilişki arayıcı tasarım ile yürütülmüştür. Araştırma kendisinde ya da ailesinde/yakınında bulaşıcı olmayan hastalık olan 312 kişiyle yapılmıştır. Verilerin toplanmasında anket formu, Bulaşma/Bulaştırma Korkusu Ölçeği ve COVID-19 Tükenmişlik Ölçeği kullanılmıştır.
Bulgular: Katılımcıların bulaşma/bulaştırma korkusu ortalama puanı 92.12±14.24 ve COVID-19 tükenmişlik ortalama puanı 24.51±9.12'ydi. Katılımcılar arasında evli olan, eğitim düzeyi üniversite olan, sağlık durumunu orta olarak değerlendiren ve kendisinde hastalık olan kişilerde bulaşma/bulaştırma ölçeği ortalama puanlarının daha yüksek olduğu bulunmuştur. Kadınlarda, bekarlarda, geliri giderinden az olanlarda, sağlık durumunu kötü olarak değerlendirenlerde, hastalığa sahip aile üyesi/yakını ile aynı evde yaşayanlarda COVID-19 tükenmişlik ölçeği ortalama puanlarının daha yüksek olduğu belirlenmiştir. Ayrıca katılımcıların bulaşma/bulaştırma korkusu ölçeği ortalama puanı ile COVID-19 tükenmişlik ölçeği ortalama puanı arasında pozitif yönde ilişki olduğu bulunmuştur ($p<0.05$).
Sonuç: Sağlık profesyonellerinin bulaşıcı olmayan hastalığa sahip kişilerin yaşadığı korku ve tükenmişliği hastalık yönetimi doğrultusunda ele almaları ve olası pandemi durumlarında bulaşıcı olmayan hastalıklara özgü müdahaleler geliştirmeleri önerilmektedir.

Anahtar Kelimeler: Bulaşıcı olmayan hastalık; COVID-19; bulaşma korkusu; bulaştırma korkusu; tükenmişlik

Introduction

Noncommunicable diseases (NCDs), also known as chronic diseases, are conditions that tend to be long-lasting, show slow pathology, arise as a result of genetic, physiological, environmental, and behavioral factors, are not transmitted from one patient to another, and require continuous medical attention and care.[1] Cardiovascular diseases in particular, cancers, chronic respiratory diseases, and diabetes are noncommunicable diseases that account for more than 80% of premature deaths worldwide.[2] While noncommunicable diseases and the complications they cause affect the quality of life and life years of individuals due to reasons such as decreased functionality and increased risk of death, they create a significant financial and social burden.[3] The COVID-19 epidemic process, which emerged unexpectedly and continued for a long time, also emphasized the need to specifically address noncommunicable diseases.[4]

COVID-19 is known to be a disease that has affected many people since its emergence, is highly contagious, and has significant fatal consequences in high-risk groups.[5] It is reported that the prognosis of the disease is severe and even the risk of being fatal is higher in cases of being over 60 years old and having noncommunicable diseases such as hypertension, diabetes, cardiovascular disease, chronic respiratory disease, and cancer.[5-7] If people with noncommunicable diseases are infected with the COVID-19 virus, they are more vulnerable to the disease but have more difficulty accessing treatment to manage their current illness due to the increasing burden of the pandemic on health resources.[8]

During the epidemic, much information such as death rates, daily case numbers, and newly emerged variants affected individuals psychologically. In the COVID-19 epidemic, many psychological problems such as stress, anxiety, depression, fear, and burnout may occur due to the high infection and death rate of the disease and epidemic measures aimed at reducing social interaction.[9, 10] According to Devi et al. it was determined that stress increased in 61.5% of the participants with chronic diseases, and feelings of isolation or loneliness increased in 50.1% of them.[8] According to Mak et al. in the examination of chronic diseases during the epidemic period; delays in face-to-face care, screening procedures, diagnosis, treatment, and social distance policies are reported to have undesirable effects on both physical and psychological health of people with noncommunicable diseases during the epidemic.[11]

The higher risk of death from COVID-19 for individuals with noncommunicable diseases, people with noncommunicable diseases that require constant monitoring and treatment, and their relatives/family members may experience greater fear of COVID-19 transmission as

carriers.[5,11] Fears of individuals affect the way they manage their health. In addition to these changes in health systems, it is seen that health checks are delayed/disrupted due to the fear of COVID-19 disease transmission.[6,8] According to Pécout et al. in a study conducted with people with noncommunicable diseases; it has been reported that during the pandemic, 50% of patients' medical conditions worsened, 17% developed a new disease, and 26% of the pandemic affected their regular/long-term treatment intake.[10] This situation leads to a further increase in the burden of noncommunicable diseases.

The fact that the COVID-19 epidemic has been going on for a long time can increase the level of burnout of individuals towards the epidemic. Individuals with an increased level of burnout may be more reluctant to take responsibility for their health and make positive health decisions. Thus, individuals with noncommunicable diseases experience more burnout,[12,13] and this increases the incidence of depressive symptoms.[13] Burnout affects not only individuals, but also individuals' family members, health professionals, and caregivers.[14]

Nurses, who are members of the health team, are at the forefront during the epidemic process and also make important contributions to the management of noncommunicable diseases through education, counseling, and treatment. Purpose in nursing management for COVID-19; relief of symptoms, relief of breathing, prevention of the development of multiple diseases, and increasing the quality of life.[7] Nurses can plan healthcare practices for patients by determining the fear of contagion/transmission and COVID-19 burnout of individuals who or their relatives have a noncommunicable disease.

In the literature, it is seen that the studies to reveal the current situation regarding noncommunicable diseases during the epidemic process are limited.[1,8,10] Insufficient studies conducted with people with noncommunicable diseases and their relatives during the epidemic make it difficult to establish a framework for relevant intervention areas. It is thought that this study will contribute to the development of interventions for noncommunicable diseases by determining the level of fear of contagion/transmission and burnout of individuals in the case of noncommunicable diseases during the COVID-19 period.

Aim of study

The research was conducted to examine the relationship between noncommunicable disease status in adults with fear of contagion/transmission and COVID-19 burnout.

Research Questions

1. What are the levels of fear of contagion/transmission and COVID-19 burnout among the participants?

2. Do the levels of fear of contagion/transmission and COVID-19 burnout vary based on the sociodemographic characteristics of the participants?
3. Is there a relationship between the presence of non-communicable diseases and the levels of fear of contagion/transmission and COVID-19 burnout among the participants?

Materials and Methods

Design and participants of the research

The research was cross-sectional and correlational type. In this study, individuals with NCD in themselves or their family members were reached. The prepared online questionnaire was shared with as many people as possible via e-mail and private messages on social media by applying convenience sampling technique. The sample size was calculated from the COVID-19-BS standard deviation value (SD=26.19) in a similar study[15] and n= (z x SD /d)2 used in cases where the universe was unknown[16] calculated using the formula. In the formula, 95% confidence level and deviation were accepted as d=3, and n= (1.9616 x 26.19 /3)2= 293. Considering the sample loss, it was aimed to reach 10% more people, and 331 participants were included in the study.[17] 2 people were excluded from the study because they were younger than 18 years old, and 17 people did not have a noncommunicable disease in themselves or their relatives. The sample of the study consisted of 312 people who met all the inclusion criteria and agreed to participate in the study. Sampling inclusion criteria; being 18 years or older, having a noncommunicable disease and/or having a noncommunicable disease in their relatives, having the knowledge and skills to conduct an online survey, and agreeing to participate in the research. The degree of closeness of the people whose family members have the disease and who participated in the research are as follows: mother, father, child, spouse, sibling, grandparent, grandfather, aunt, and uncle. Exclusion criteria; having visual and hearing impairment and having any neuro-psychiatric problem.

Data collection tools

Questionnaire form, Fear of Contagion/Transmission Scale (FCTS), and COVID-19 Burnout Scale (COVID-19-BS) were used to collect data.

Questionnaire Form: This form, which was created by the researchers by reviewing the literature, there are closed-ended questions to determine sociodemographic characteristics such as age, gender, economic status, and characteristics related to noncommunicable diseases.[3, 6, 7, 8, 11)]

Fear of Contagion/Transmission Scale (FCTS): The scale developed by Koç and Bilgehan to measure individuals' fear of disease transmission and transmission, consists of 4 sub-dimensions (contact contagion, intangible contagion, social contagion, health area contagion). It consists of 24 items. The scale is graded in a 5-point Likert type, as "Strongly agree (5), Agree (4), Undecided (3), Disagree (2), Strongly disagree (1)". There is no reverse item in the scale. The score that can be obtained from the scale varies between 24 and 120. An increase in the total score obtained from the scale is interpreted as an increase in the fear of contagion. The internal consistency coefficient of the scale, Cronbach's alpha value, was found to be 0.909.[18] In this study, Cronbach's alpha value was found to be 0.912.

COVID-19 Burnout Scale (COVID-19-BS): The scale adapted from the Burnout Measure-Short Version[19] consists of ten items. It was adapted into Turkish from the short version of the Burnout Scale by Yıldırım and Solmaz to measure the burnout level of individuals for COVID-19. The scale, which consists of 10 items in total, is one-dimensional. The scale is graded in a 5-point Likert type as 'Never (1), Rarely (2), Sometimes (3), Often (4), Always (5)'. The total score is calculated by adding all 10 items and the total scores range from 10 to 50. As the total score from the scale increases, it is interpreted that the level of burnout related to COVID-19 increases. The internal consistency coefficient of the scale, Cronbach's alpha value, was found to be 0.92.[9] In this study, Cronbach's alpha value was determined as 0.93.

Data collection

Research data were obtained between May and July 2022. Data collection tools were applied to the participants through an online questionnaire created with Google Forms. Before the application, information about the research was given in the explanation part of the questionnaire. Questionnaire form, FCTS, and COVID-19-BS were applied to the people who agreed to participate in the study. The implementation of the data collection tools took approximately 15-20 minutes.

Ethical dimension

Ethical approval was obtained from the Ankara Yıldırım Beyazıt University Ethics Commission to conduct the research (07/02/2022-01). Before filling out the questionnaire, the participants were informed about the purpose of the study, and if they agreed to participate in the study, they were asked to approve the declaration of participation in the electronic questionnaire entry. Persons with a declaration of participation in the study were included. Volunteering was taken into account in participating in the study. Permission was obtained from the authors via e-mail for the use of the scales.

Data analysis

The data obtained from the research were evaluated with the SPSS 22.0 (Statistical Package for Social Sciences) program on the computer. Number, percentage, mean, and standard deviation were used in the presentation of descriptive characteristics. Whether the variables were normally distributed or not was determined by the Shapiro-Wilk Test. Independent sample test was used to compare binary groups, and One-Way ANOVA was used to compare more than two groups. Levene's test was used to test homogeneity of variances. Post-hoc Tukey test was performed to determine the difference between groups. Only one variable was compared with the Mann Whitney U test. The Pearson correlation coefficient was calculated for the relationship between the scales and their sub-dimensions. The significance level was taken as 0.05.

Limitations of study

It was a limitation that the sample selection was the convenience sampling technique. The research was conducted only with people who could participate in the electronic questionnaire. All instruments were self-reported questionnaires, resulting in the possibility of response bias. Finally, cross-sectional design may limit precise causal relationships.

Results

The mean age of the participants was 36.9±12.7%, 80.8% of them were female, 59.6% were married, 47.8% were university graduates, and 51.3% income was equal to their expenses. It was determined that 34.3% of the participants had a noncommunicable disease, 98.7% had a noncommunicable disease in their family members, and 46.8% were diagnosed with COVID-19 (Table 1).

Table 1: Sociodemographic and Disease Characteristics (*n* = 312)

Characteristics		n	%
Gender	Female	252	80.8
	Male	60	19.2
Marital status	Single	126	40.4
	Married	186	59.6
Education level	Elementary-middle school	90	28.8
	High school	24	7.7
	Undergraduate	149	47.8
	Master/doctorate	49	15.7
Working status	Yes	164	52.6
	No	148	47.4
Income	Income less than expense	105	33.6
	Income equal to expense	160	51.3
	Income more than expense	47	15.1
Health perception	Poor	17	5.4
	Moderate	125	40.1
	Good	170	54.5
Have NCDs	Yes	141	34.3
	No	171	65.7
NCD type*	Metabolic diseases	29	20.6
	Cardiovascular diseases	19	13.4
	Respiratory Diseases	18	12.7
	Neurological Diseases	15	10.6
	Musculoskeletal diseases	17	12.1
	Digestive system diseases	17	12.1
	Immune system-autoimmune diseases	7	5.0
	Multiple NCDs	10	7.1
	Other (hematological, oncology, skin, urinary system diseases)	9	6.4
Family members have NCDs	Yes	308	98.7
	No	4	1.3
Degree of closeness with family member who has NCDs**	Mother	113	36.7
	Father	77	25.0
	Spouse	19	6.2
	Child	11	3.6
	Sibling	24	7.8
	Grandmother/grandfather	42	13.6
	Aunt/uncle	22	7.1
NCD type of family member**	Metabolic diseases	94	30.5
	Cardiovascular diseases	106	34.4
	Respiratory Diseases	26	8.5
	Neurological Diseases	11	3.6
	Musculoskeletal diseases	11	3.6
	Digestive system diseases	8	2.5
	Immune system-autoimmune diseases	10	3.3
	Multiple NCDs	24	7.7

	Other (hematological, oncology, skin, urinary system diseases)	18	5.9
Living in the same household as the person with the disease**	Yes	109	35.4
	No	199	64.6
Diagnosing COVID-19	Yes	146	46.8
	No	166	53.2
Family member with the disease diagnosed with COVID-19**	Yes	272	88.3
	No	36	11.7

*Responses from 141 people with NCD were analyzed.
**Responses from 308 family members with NCD were analyzed.

The participants had 20.6% metabolic diseases, 13.4% cardiovascular diseases, 12.7% respiratory diseases. The mean score of the participants' fear of contagion/contagion was 92.12±14.24 and the mean COVID-19 burnout score was 24.51±9.12. There was a significant difference between the total mean scores of FCCS obtained according to the participant's marital status, education level, perception of health, presence of noncommunicable disease, and noncommunicable disease among family members ($p< 0.05$). Between the mean of fear of contact contagion and gender, economic status, marital status, and educational status; between fear of intangible contagion mean score and educational status, perception of health, presence of NCD; between fear of social contagion mean score and marital status, perception of health, presence of NCD; a significant difference was found between fear of health area contagion score averages and marital status, presence of NCD in family members, and diagnosis of COVID-19 in family members with NCD ($p< 0.05$).

A significant difference was found between the total mean scores of the COVID-19 burnout scale obtained according to gender, marital status, economic status, perception of health status, presence of noncommunicable disease, and living in the same house with a family member with the disease ($p< 0.05$) (Table 2).

Table 2: Comparison of Sociodemographic Characteristics with COVID-19-BS, FCTS and FCTS Subdimensions

Characteristics		**FCTS sub-dimensions**					
		Contact contagion fear	**Intangible contagion fear**	**Social contagion fear**	**Health area contagion fear**	**FCTS**	**COVID-19-BS**
		X±Ss	X±Ss	X±Ss	X±Ss	X±Ss	X±Ss
Gender	Female	92.3±13.8	21.0±3.2	16.0±4.3	18.8±3.7	92.3±13.8	25.2±9.0
	Male	91.0±15.7	19.9±3.4	16.5±3.8	18.5±4.3	91.0±15.7	21.4±8.6
	t	2.175	-0.674	0.165	0.584	0.670	2.959
	p	**0.030**	0.501	0.869	0.559	0.503	**0.003**
Marital status	Single	20.2±3.4	15.8±3.9	32.0±6.1	18.3±4.2	89.9±15.0	25.8±9.1
	Married	21.1±3.1	16.3±4.3	33.5±5.2	23.6±9.0	93.6±13.4	23.6±9.0
	t	-2.481	-0.995	-2.274	-1.688	-2.272	2.089
	p	**0.014**	0.320	**0.024**	**0.092**	**0.024**	**0.038**
Education level	Elementary-Middle School	21.4±3.1[a]	17.3±4.2[a]	33.7±5.2	19.6±3.7	95.7±13.5[a]	24.4±9.6
	High school	19.8±3.3	15.9±4.2	31.0±7.0	17.8±4.7	87.9±16.0[b]	23.9±7.3
	Undergraduate	21.0±3.3	15.6±4.2[b]	32.8±5.6	18.5±4.0	91.4±14.2	24.5±9.0
	Master/doctorate	19.4±3.2[b]	15.7±3.6	32.5±5.4	18.6±3.0	89.6±13.5	24.9±9.4
	F	4.568	3.199	1.595	2.051	3.355	0.081
	p	**0.004**	**0.024**	0.191	0.107	**0.019**	0.970
Income status	Income less than expense	21.0±3.1[a]	16.2±4.4	32.9±5.7	19.2±3.68	93.0±14.5	25.9±9.9[a]
	Income equal to expense	21.0±3.2[a]	16.4±3.9	32.9±5.6	18.5±3.6	92.3±13.7	24.2±8.7
	Income more than expense	19.2±3.7[b]	15.1±4.6	33.0±5.4	18.6±4.6	89±15.1	22.1±7.7[b]
	F	5.826	1.594	0.019	1.052	1.235	3.074
	p	**0.003**	0.205	0.981	0.350	0.292	**0.048**
Health perception	Poor	21.2±3.1	17.1±4.4	34.3±5.5	18.9±4.7	95.0±15.6	31.2±8.9[a]
	Moderate	21.1±2.8	16.9±4.0[a]	33.9±4.8[a]	19.5±3.3[a]	95.1±11.7	25.9±8.7[a]
	Good	20.5±3.6	15.5±4.2[b]	32.0±6.1[b]	18.2±4.0[b]	89.6±15.3	22.7±8.9[b]
	F	1.259	4.510	4.746	4.349	5.795 2>3	9.777

	p	0.285	**0.0122**	**0.009**	**0.014**	**0.003**	**<0.001**
Have NCDs	Yes	21.1±2.9	17.3±4.0	33.6±5.4	19.6±3.7	95.2±13.1	26.2±8.9
	No	20.5±3.5	15.2±4.1	32.3±5.7	18.1±3.8	89.5±14.6	23.0±9.0
	t	1.750	4.442	2.080	3.334	3.590	3.091
	p	0.081	**<0.001**	**0.038**	**0.001**	**<0.001**	**0.002**
Family members have NCDs	Yes	216.5	293.6	265.3	265.5	291.3	180.6
	No	155.7	154.7	155.0	155.0	154.7	156.1
	Z	-1.347	-3.070	-2.437	-2.441	-3.011	-0.539
	p	0.178	**0.002**	**0.015**	**0.015**	**0.003**	0.590
Living in the same household as the person with the disease	Yes	21.1±3.34.1	19.9±4.8	32.8±5.9	18.7±4.1	92.6±14.8	25.9±9.5
	No	20.5±3.3	19.1±4.8	32.8±5.5	18.7±3.7	91.3±13.6	23.6±8.7
	t	1.352	1.439	-0.040	-0.069	0.779	2.062
	P	0.177	0.151	0.968	0.945	0.436	**0.040**
Diagnosing COVID-19	Yes	21.0±3.2	16.3±4.1	33.3±5.0	19.0±3.7	93.2±13.5	25.3±8.8
	No	20.6±3.3	15.9±4.2	32.6±6.0	18.6±4.0	91.1±14.8	23.7±9.3
	t	0.989	0.892	1.166	0.842	1.305	1.521
	p	0.323	0.373	0.245	0.401	0.193	0.129
Family member with the disease diagnosed with COVID-19	Yes	20.7±3.3	19.3±4.8	32.7±5.6	18.5±3.9	91.7±14.4	24.6±9.0
	No	20.9±3.1	19.9±4.9	33.5±5.9	20.1±2.9	94.6±12.9	23.1±9.4
	t	-0.411	-0.743	-0.834	-2.479	-1.364	0.972
	p	0.681	0.458	0.405	**0.003**	0.148	0.352

t= Independent Sample Test, F= One Way Anova, Z= Mann Whitney U Test

[a,b] The significant difference was obtained between groups with different letters.

There exists a modest positive correlation between the total scores obtained from participants' COVID-19 burnout scale and their scores from the fear of contagion/transmission scale (r= 0.305, p< 0.05). Furthermore, a positive correlation is observed between the scores on the COVID-19 burnout scale and all the sub-dimensions within the fear of contagion/transmission scale (Table 3).

Table 3: The Relationship between COVID-19-BS, and FCTS

Variables	COVID-19-BS	
	*r**	p
Contact contagion fear	0.195	**0.001**
Intangible contagion fear	0.293	**<0.001**
Social contagion fear	0.251	**<0.001**
Health area contagion fear	0.257	**<0.001**
FCTS	0.317	**<0.001**

*Pearson correlation coefficient

Discussion

The COVID-19 pandemic has had a variety of impacts on NCDs.[6] An important aspect of the COVID-19 pandemic is fear triggered in individuals.[20] As fear increases, quality of life decreases, and physical and psychological health is negatively affected.[21] In the scale development study conducted by Koç and Bilgehan on adults, they reported a mean score of 87.88±14.89 for the fear of contamination/transmission. This finding aligns with our study.[18] It is thought that individuals with NCDs or family members have a higher risk of contamination/contamination because they are in the risk group for COVID-19.[22-24] According to Ozmen et al. and Bakioglu et al., it was determined that adults with infectious diseases experienced more fear of COVID-19.[23] Wildman et al. it was reported that participants experienced fear of COVID-19 in areas related to fear of contact contagion, fear of intangible contagion, and fear of health area contagion. The results of the study revealed that individuals with NCD are accustomed to living to varying degrees, but they have a fear of being infected with COVID-19, an infectious disease that can threaten their lives.[24] On the other hand, in the study conducted by Aydın Yıldırım and Gebesoglu with people with NCDs in the second year of the pandemic, it was determined that the fear of COVID-19 was lower, and it was reported that this situation may be related to more uncertainty in the early stages of the epidemic.[25] In order not to increase the risk of transmission, shortly after the pandemic, the use of online facilities such as telemedicine instead of hospital visits, especially for individuals with NCD, has increased.[26,27] This situation supports the existence of the fear of contagion in the healthcare area as the demand for healthcare services is created by the patients.

The COVID-19 pandemic has led to the emergence of numerous stressors such as fear of contagion, fear of economic or business difficulties, excessive and unreliable information

overload, uncertainty, and social isolation.[28] A history of noncommunicable diseases suspected of COVID-19 transmission and loss of psychological control in the individual can cause constant health concerns, leading to stress and burnout.[29] Burnout is a long-term response to chronic, emotional, and interpersonal stressors.[9] In this study, it is seen that the mean COVID-19 burnout score of the participants is moderate. When the literature is examined, it is seen that studies on COVID-19 burnout in the case of illness are limited. Yıldırım & Solmaz, it was reported that the mean score of COVID-19 burnout was 28.61±9.01.[9] Silveira et al. moderate or high burnout has been reported during the COVID-19 period and in a large proportion of individuals with type 1 diabetes.[30] In essence, these diverse findings underscore the intricate nature of COVID-19 burnout, demonstrating that its prevalence and intensity can vary across different groups. The complexities of this phenomenon warrant further investigation to uncover the underlying factors driving these distinctions and to inform targeted interventions for affected populations.

The study also revealed a modest positive correlation between the fear of contagion/transmission and COVID-19 burnout. The COVID-19 pandemic has brought about significant changes in people's daily routines, work environments, and healthcare demands, leading to disruptions in the management and monitoring of noncommunicable diseases (NCDs). These collective challenges are thought to contribute to an increased burden of COVID-19 burnout, adding an extra layer of stress for individuals dealing with NCDs. In the context of noncommunicable diseases, there is a pressing need for the implementation of more stringent protective measures to prevent the transmission of COVID-19.[5] Beyond the responsibilities arising from this situation, a range of factors, including the anxiety induced by the uncertainties surrounding the COVID-19 pandemic, the fear of contracting the virus,[31,32] the restrictions stemming from quarantine and isolation measures, and the emotional toll of being separated from family members, can all exert negative effects on mental health.[33] Therefore, it is important to plan and implement health promotion interventions for mental health problems caused by the pandemic. Consequently, it is paramount to design and execute health promotion interventions aimed at addressing the mental health challenges induced by the ongoing pandemic.

During the pandemic, individuals were affected differently in terms of personal characteristics. In our study, it was found that the average score of fear of contact and burnout of females was higher than that of males. In the studies conducted in the literature during the COVID-19 pandemic, it was found that females experienced more fear of COVID-19[21,23,34] and that

gender affected the level of burnout and that females experienced higher levels of burnout than men.[35,36] Changing living conditions during the COVID-19 period, female's increasing home responsibilities, continuing education in the home environment, and multiple responsibilities between family life as well as work and professional duties may cause a greater perception of burnout. In this study, it was seen that the COVID-19 burnout levels of the participants whose income is less than their expenses are higher. Similarly, in the study of Ay and Benli, it is reported that people with low income levels have higher average scores of COVID-19 burnout.[37] In the COVID-19 epidemic, the incomes of individuals have been affected by various factors such as social distance and closure measures taken in work and work areas, increased home responsibilities, having to take a break from work due to health problems, and paying lower wages for less work.[38] These situations can lead to increased levels of burnout. In this study, it was concluded that living in the same house with an individual with NCD increases the level of COVID-19 burnout. Considering this situation, it is thought that the possibility of other individuals living in the same house with NCDs carrying the COVID-19 virus to the house and causing negative consequences causes more COVID-19 burnout. In summary, our findings underscore the complex interplay between personal characteristics, income disparities, and living arrangements in shaping individuals' experiences of COVID-19 burnout. These results emphasize the need for tailored interventions and support systems to address the diverse challenges posed by the pandemic.

Conclusion and Recommendations

In this study, it was found that individuals with NCD or family members had a significantly higher fear of contagion/transmission and their COVID-19 burnout levels were close to the average. It was determined that marital status, education level, health perception, presence of NCD, and presence of NCD in family members may be risk factors in increasing the fear of contagion. It has been revealed that gender, marital status, economic status, perception of health, presence of NCD, and living in the same house with a family member with NCD may be risk factors in increasing COVID-19 burnout. The results underline the urgent need to reinstate a patient-centered approach to healthcare, clearly compromised by the COVID-19 pandemic, and to empower patients affected by NCDs. In addition to the measures taken for communicable diseases in possible future epidemics, measures should be taken in the fields of prevention, health protection, and improvement for noncommunicable diseases. It is recommended that researchers conduct more follow-up and intervention studies for individuals with noncommunicable diseases and their family members during the epidemic.

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