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Araştırma Makalesi

The Impact of the Level of Fear Experienced During the COVID-19 Epidemic on Risk Aversion and Work Interaction Avoidance Behaviors: A Study on Health Professionals

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Makale Bilgisi

Anahtar kelimeler:

covid-19 korkusu, riskten kaçınma, iş etkileşiminden kaçınma, sağlık profesyonelleri

Abstract

The main purpose of this study was to determine the effect of the level of fear experienced during the COVID-19 epidemic on risk aversion and work interaction avoidance behaviors. Healthcare workers have always been the group with the highest risk of contracting virus, as they put their lives at risk in all pandemics to fight epidemics on the front lines. Hospital-based cross-sectional research design was used in the study. The universe of the research consisted of all healthcare professionals of two different public hospitals providing secondary care in Ankara. Convenience sampling method was employed. The data were collected by the researchers using the online questionnaire technique. The total number of questionnaire package that were evaluated and used in the analysis of the data is 326. SPSS and AMOS package programs were used in the analysis of the data. Descriptive statistics, independent sample t-test, ANOVA test and structural equation modeling were applied to the data. The findings obtained with the structural equation analysis showed that the construct validity of the model was confirmed. It has been determined that the direct causal effect of the COVID-19 fear level of health professionals on risk avoidance behaviors is positive and 0.29 units, while the direct causal effect on the work interaction avoidance behaviors is positive and 0.17 units. In addition, a significant relationship was found between female gender and risk avoidance behavior. The level of fear experienced among healthcare professionals during the COVID-19 epidemic seem to increase their tendency to show risk avoidance and work interaction avoidance behaviors.

Keywords:

fear of covid-19, risk aversion, work interaction avoidance, healthcare professionals

Öz

Bu çalışmanın temel amacı, COVID-19 salgın sürecinde yaşanan korku düzeyinin, riskten kaçınma ve iş etkileşiminden kaçınma davranışlarına etkisini tespit etmektir. Sağlık çalışanları tüm pandemilerde hayatlarını riske atarak salgınlara karşı ön saflarda mücadele ettiklerinden, pandemi faktörlerine yakalanma riski her zaman en yüksek grup olmuşlardır. Sağlık profesyonelleri arasında COVID-19 salgın sürecinde yaşanan korku düzeyinin, onların riskten kaçınma ve iş etkileşiminden kaçınma davranışları gösterme eğilimlerini arttıracağı öngörülmektedir. Araştırmada hastane tabanlı kesitsel araştırma deseni uygulanmıştır. Araştırmanın evrenini Ankara ilinde ikinci basamak tedavi sunan iki farklı kamu hastanesinin tüm sağlık profesyonelleri oluşturmuştur. Araştırmada kolayda örnekleme yöntemi tercih edilmiştir. Veriler internet üzerinden anket tekniği ile bizzat araştırmacılar tarafından toplanmıştır. Değerlendirmeye alınan ve verilerin analizinde kullanılan toplam anket sayısı 326'dır. Verilerin analizinde SPSS ve AMOS paket programları kullanılmıştır. Betimleyici analizler, bağımsız örneklem t testi, ANOVA analizi ve yapısal eşitlik modellemesi uygulanmıştır. Yapısal eşitlik analizi ile elde edilen bulgular, modelin yapı geçerliliğinin sağlandığını göstermiştir. Sağlık profesyonellerinin COVID-19 korku düzeyinin riskten kaçınma davranışlarına direkt nedensel etkisinin pozitif yönlü ve 0.29 birim olduğu, iş etkileşiminden kaçınma davranışlarına ise direkt nedensel etkisinin pozitif yönlü ve 0.17 birim olduğu tespit edilmiştir. Ayrıca kadın cinsiyeti ile riskten kaçınma davranışı arasında pozitif yönde anlamlı ilişki bulunmuştur. Sağlık profesyonelleri arasında COVID-19 salgın sürecinde yaşanan korku düzeyi, onların riskten kaçınma ve iş etkileşiminden kaçınma davranışları gösterme eğilimlerini arttırmaktadır.

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Introduction

In pandemics, workload and stress levels significantly increase for health systems and health care professionals. The longer working hours, worsening working conditions, excessive number of patients per day, societal expectations and anxiety results in greater risk of sickness among employees. All these factors inevitably affect healthcare workers' overall psychosocial functioning and resilience. The possible lethal impact of outbreaks such as SARS, MERS and Influenza that have been experienced in succession over the past 20 years has gradually increased the awareness of health authorities, policy makers and the general public (Oxford et al., 2002).

Healthcare workers have always been the group with the highest risk of being influenced by the pandemic factors. In addition, healthcare professionals struggle with the disease on the front lines by risking their lives in all pandemics. All health professionals working in health institutions (e.g., physicians, nurses and other allied health personnel) are exposed to the stress of epidemics at the highest level and try to cope with the psychological consequences for a long time. Healthcare workers have always been the group most at risk from all new and deadly epidemics such as SARS, Ebola, and MERS (Tam et al., 2004; Ji et al., 2017; Khalid et al., 2016; Suwantarat & Apisarnthanarak, 2015).

In addition, it has been shown that greater risk of infection (e.g., being infected from the hospital environment, external contamination or being in the same environment with the infected patients) is associated with increased mental symptoms among healthcare workers during COVID-19 pandemic (Kaya, 2020). At the same time, over-burdened health institutions and insufficient number of health personnel further increase health professionals' psychological strain (Porten et al., 2006). Working time is another factor directly affecting the severity of the healthcare workers' stress responses. As the working time in the relevant service of the hospital increases, the frequency of interaction with the patients increase, along with the burden of protective clothing and equipment resulting in increased emotional exhaustion and fear (Sasangohar et al., 2020).

Literature Review and Hypothesis Development

In late December 2019, a great number of pneumonia patients with unknown cause were reported in a seafood market in Wuhan, China's Hubei province. The World Health Organization (WHO) first announced that the reason for these complaints was a new type of coronavirus (2019-nCoV) on January 12, 2020, and on February 11, 2020, this new virus was named SARS-CoV-2. As a result of samples obtained from patients, on January 7, 2020, the

entire genome sequence of SARS-CoV2 was mapped by Chinese scientists in a short time. WHO named this epidemic as the "Covid-19" pandemic on February 11, 2020. After China, the epidemic spread to many countries, especially in Asian region countries, and reached an international dimension affecting the whole world. As a result, WHO declared COVID-19 as an global public health problem on January 30, 2020 (Turkish Academy of Sciences, 2020).

Healthcare workers have always been the group with the highest risk of being caught against pandemic factors. They have struggled with the disease on the front lines by risking their lives in all pandemics. Physicians, nurses, and all other allied health workers working in all health institutions are both exposed to the stress of epidemics at the highest level and try to cope with the psychological consequences for a long time (Lee et al., 2007; Maunder et al., 2006). Healthcare workers have been the most affected group and at risk of harm in all recent outbreaks such as SARS (Tam et al., 2004), Ebola (Ji et al., 2017), MERS-CoV infections (Khalid et al., 2016), and COVID-19, with fatal consequences (Wang et al., 2020a).

Healthcare workers are at the forefront of combating the epidemic in our country as well as in the whole world. Their inclusion in the diagnosis and treatment with great devotion during the epidemic process not only increase risk of infection but also mental health problems. Besides experiencing the risk of a fatal disease and the negative consequences of the measures taken in this process, they also face the burden of fighting on the front line in this struggle. Therefore, the fear of being infected with the disease is higher for health workers than for the society. Excessive contact with sick people causes concerns about infecting both the person themselves and their loved ones. Several studies conducted in China and Canada yielded that the fear and anxiety of health workers to infect their family members during the fight against SARS is high (Bai, 2004; Robertson, 2004). Furthermore, studies examining the negative effects of epidemics on healthcare workers have found that these individuals show signs of post-traumatic stress, anxiety symptoms, burnout, and depression both during and after the epidemic (A.M. Lee et al., 2007; Maunder et al., 2006). In a study conducted with 546 healthcare workers during the SARS epidemic, it was stated that 10% of the sample experienced psychological stress symptoms since the epidemic (Wu et al., 2009). In addition, it has been stated that healthcare workers who have to stay away from their families, face the risk of contracting illness because they have to work with people who have been diagnosed and who have to bear a heavier burden than their usual workload are adversely affected (Huremović, 2019; Li et al., 2020). Away from their family and social environment, they were easily distracted due to the disruption of sleep patterns, and had difficulties in decision-making processes (Bai et al., 2004; A.M. Lee et al., 2007; Marjanovic et al., 2007; Reynolds et al., 2008; Wu et al., 2009).

As a result, the COVID-19 Pandemic, which surrounded the world in a short time, not only had significant effects in medical and health-related fields, but also triggered many social changes. The sharing of the necessary tools to combat the pandemic as well as the spread of the pandemic is taking place at the same pace. However, this struggle does not cause equal participation, the formation of solidarity structures among healthcare workers, and unity in the total war against the common enemy virus, as it is believed, in any case, the COVID service emerges as a social environment that also witnesses various conflicts (Turkish Medical Association, 2020).

'Fear of COVID-19' and Risk Aversion Behaviour

The contagious nature of the infection, its being an imminent threat and invisibility to the eye and increasing influence of the virus (Pappas et al., 2009) are the most important reasons why the COVID-19 pandemic causes fear of COVID-19 or anxiety in both the society and healthcare workers. At the same time, disease outbreaks such as the COVID-19 pandemic are seen as situations of concern. Even though the impact of this epidemic on global mental health was not recorded and measured yet, it was observed that individuals' levels of fear, and anxiety increased at an alarming level, especially during the emergence of the epidemic and the increase in the number of cases (Rajkumar, 2020). In a recent study, it was reported that confronting uncertain situations, especially when there is a potential risk of death, can increase levels of anxiety and fear leading to adopt protective behaviors both by healthy and vulnerable individuals (Shigemura et al., 2020).

The first emotions that commonly occur in humans in response to an epidemic are intense anxiety and fear. Here are just a few of the many factors that cause intense feelings of fear and anxiety: (i) transmitting the virus without any symptoms, (ii) life-threatening nature of the disease, (iii) the length of the vaccine development process and the insecurities about its long-term consequences, (iv) the short and long-term effects on the economy, and (v) emergence of second and third mutations of the virus (Taştan et al., 2020).

Studies have found that healthcare professionals and administrative staff, who are at the forefront of combating COVID-19 infection, develop symptoms of anxiety, depression, and post-traumatic stress disorder (Kang et al., 2020). In a study conducted in China, 50.4% of 1250 healthcare workers had psychiatric symptoms such as depression, 44.6% anxiety, 34% insomnia, and 71.5% stress (Tuncay et al., 2020). In a survey study conducted for hospital staff in the initial period of the COVID-19 pandemic, it was stated that healthcare workers had fears of infecting their families, and their ability to cope with treatment incompatibility was lacking due to their poor psychological resources (Y. Chen et al., 2020).

Risk aversion, on the other hand, is defined as the tendency to stay away from risk and is considered a personality trait. Risk aversion is an important attribute used to distinguish between those who avoid or those who do not avoid risky situations (De Matos et al., 2007). Constant anxiety is the tendency to experience worry. Harm aversion refers to the tendency to avoid potential risk. People with a high level of harm avoidance tend to be fearful and extremely anxious (Taylor, 2019). Knowing that there is a high risk of being infected with the COVID-19 virus among healthcare professionals is among the main factors affecting healthcare professionals' habits and treatment priorities (Baker et al., 2020). It has been emphasized in the literature that health and disease knowledge can affect the behaviors of health workers (Zhang et al., 2020). In this context, the level of risk people perceive, and their personal risk tolerance levels can be considered as factors impacting their risk-taking tendencies and behaviors towards risks (Shiffman & Kanuk, 2000).

The COVID-19 pandemic has become a clinical threat to both the general population and healthcare professionals (Laia et al., 2020). Situations such as inadequate personal protection of healthcare workers, prolonged exposure to large numbers of infected patients, excessive workload, and lack of personal protective equipment further increase the risk of infection for healthcare workers (Wang et al., 2020b). In addition, fear of autoinoculation (i.e., transmitting the disease to others) and the possibility of spreading the virus to their family, friends, or colleagues have intensify their fear and anxiety (Xiang et al., 2020). This situation might cause them to isolate themselves from their family, change their routines, narrow their social support networks, limit their social relationships, and avoid risk (Huang et al., 2020). Furthermore, it has been determined that the high working hours, working in a pandemic hospital, the high case load in the hospital, the infection of the coworkers, the lack of protective equipment, and the uncertainty of the treatment protocols increase the psychosocial burden and risk perceptions among healthcare workers (S.H. Lee et al., 2005; Y. Chen et al., 2020). Based on the aforementioned findings, it can be inferred that risk avoidance and work interaction avoidance behaviors of employees with low fear of COVID-19 will be high; on the contrary, health professionals with high fear of COVID-19 will have low risk avoidance and work interaction avoidance behaviors.

‘Fear of COVID-19’ and Work Interaction Avoidance

Psychological reactions that emerge during the pandemic can range from extreme fear to indifference or fatalism. Some people adapt to the threat easily and experience less anxiety. In other cases, the psychological impacts can be severe and long-lasting (Taylor, 2019). It has been stated that this epidemic caused fear, helplessness, and anxiety, and these feelings

negatively affected people's behavior, especially since the discussions about the treatment process, effective vaccines, and ways of transmission of the virus could not reach a clear conclusion (Ho et al., 2020).

Behaviors that primarily involve moving away from stimuli represent avoidance-oriented counterproductive workplace behaviors and work interaction avoidance behaviors. Such behaviors generally include any action aiming to remove an individual from, or otherwise minimize, interaction with situations or individuals (Fox & Spector, 1999). Avoidance-oriented counterproductive workplace behaviors, also referred as work interaction avoidance, can occur in measures of counterproductive workplace behavior, including refusing to speak with, ignoring, or withholding information from fellow employees, among others (Fox & Spector, 1999; Gruys & Sackett, 2003, Mitchell & Ambrose, 2007).

One of the possible risk factors is working in the area where the virus is most likely to be transmitted. In a study conducted during the H1N1 epidemic, it was found that those who work in places where the risk of transmission is high are more likely to feel anxious than those working in environments with less risk and the former group display greater post-traumatic stress symptoms (Matsuishi et al., 2012). It has been observed that healthcare workers who play an active role in the treatment of SARS have higher levels of fear, burnout, psychological stress, and post-traumatic stress symptoms compared to the healthcare workers who are not actively involved in the treatment process (Maunder et al., 2006). It has been found that healthcare workers dealing with MERS-related tasks show post-traumatic stress symptoms (S.M. Lee et al., 2018). In another study conducted during the COVID-19 outbreak, being a healthcare worker and working more than usual were associated with an increase in perceived stress levels, post-traumatic stress symptoms, and adjustment disorder (Rossi et al., 2020).

The most important reason for the pandemic to trigger significant fear and anxiety both for the society and health workers is that the infection is contagious, not visible and increases its area of influence posing a close threat (Pappas et al., 2009). At the same time, it has been reported that healthcare workers working with patients diagnosed with COVID-19 are at higher risk in terms of mental problems such as psychological distress, insomnia, alcohol use, depression, anxiety, burnout, anger, high stress perception, and they use maladaptive coping strategies (Stuijfzand et al., 2020). Another study conducted by Shapira et al. (1991) evaluated the willingness of Israeli medical workers to continue working after an unusual missile attack. Although 42% of the respondents stated that they would ill continue to work, it has been shown that this ratio will increase to 86% when the personal protective measures are provided sufficient enough (Shapira et al., 1991).

Based on the Literature the Hypothesis

H_1: Fear of COVID-19 has a significant effect on risk aversion behavior.
H_2: Fear of COVID-19 has a significant impact on work interaction avoidance.

Method

Participants

Data collection was carried out by a hospital-based survey at the two public hospitals in Ankara. The population consisted of 5.500 healthcare professionals from these public hospitals. The convenience sampling method was used in order to ease recruitment process. Participants were required to have an internet connection to participate in an online questionnaire voluntarily. A total of 326 healthcare workers took part in the research. Of the full sample, 70.2% were women (n=229) and 29.8% men (n=97).

Measurements of Variables

We applied the Turkish version of Likert-type COVID-19 fear scale (Ahorsu et al., 2020) to measure the participants' fear levels of COVID-19. The measuring tool has been found to provide high reliability for the study sample (α=0.89). Then, we applied the Turkish version of a seven items Likert-type risk propensity scale (Meertens & Lion, 2008) to measure the risk aversion tendencies of the participants during the epidemic. The measuring tool has been found to provide high reliability for the study sample (α=0.73). Finally, we applied the Turkish version of Likert-type interaction avoidance scale (Nifadkar et al., 2012) to measure the work interaction avoidance tendencies of the participants during the epidemic.

In the first stage, permission was requested from the researchers who developed the original scales for the adaptation process and their approval was obtained. The scales were translated into Turkish separately by 3 experts who know both the language of the original scale and Turkish language very well. In the second stage, the translations made by the authors and the translation made by experts were compared. While making the comparison, each item was examined whether the translations were appropriate in terms of intended meaning. The third stage is the provision of the previous stage. At this stage, the scales translated into Turkish were given to a group of 3-5 people who are experts in the language of the original scale and independent from the experts in the second stage and these experts were asked to translate the scales from Turkish back to the original language. Later, the original expression of each item was compared one-to-one with the expression resulting from this translation. With the translation in the third stage, it was seen that the original scale was appropriate.

For this purpose, the original scale and the draft scale were applied to a group of at least 20 people who know the languages of both scales well. In the application process, first the original scale and then the Turkish scale were applied at two-week intervals. After the application, the total scores of each individual in the study group obtained from both the original scale and the Turkish scale were calculated, and it was observed that the Pearson correlation coefficient of the relationship between the two applications was significant (p<0.01) and the degree of coefficient was 0.86 which shows a very high degree of harmony.

Research Design and Procedure

The hospital-based cross-sectional study design was used at public hospitals in Ankara. The study was conducted in two public secondary hospitals in Ankara, Turkey. The study began on February 15, 2021, during the second peak of the COVID-19 outbreak, and weekly online data were collected from participants during the COVID-19 outbreak in Turkey. This study was a prospective cross-sectional survey conducted online through a structured questionnaire from February 15 to April 15, 2021. Online consent was received from all the participants.

This research was carried out with the ethical approval of Duzce University Scientific Research and Publication Ethics Committee (Date: 11.02.2021, decision no: 2021/38). Quantitative research methodology was used because it is suitable for the purpose and the main problem of the research. The analysis of the data set was performed by using SPSS and AMOS statistical analysis programs.

Data Analysis

All statistical analyses were performed using IBM SPSS and AMOS. We performed frequency and percentage analysis for reporting the demographic data of the participants. Additionally, independent samples t-test and analysis of variance (ANOVA) were used for comparing the continuous data averages. Then, path analyses, using structural equation modeling (SEM) in AMOS, were performed to assess different latent structure models of the impact of healthcare professionals' fear of COVID-19 on risk aversion and work interaction avoidance. Structural equation modeling (SEM) is a statistical approach used to test and predict causal relationships and validate structural theories (Hoyle, 1995; Lee, 2007). Structural equation modeling, as a second-generation data analysis technique (Bagozzi & Fornell, 1982), provides a systematic and comprehensive approach to a complex research problem in a single process by modeling the relationships between many dependent and independent variables, compared to first generation statistical techniques such as regression analysis (Anderson & Gerbing, 1988). Structural equation modeling was used in this study

because, unlike traditional regression analysis, it takes into account measurement errors and gives more accurate results than regression analysis (Bayram, 2010). Examined models were based on the results from previous research on factor structures of the impact of healthcare professionals' fear of COVID-19 on risk aversion and work interaction avoidance. Criteria for determining structural equation modeling analysis model fit and measurement invariance were based on conventional standards (Munro, 2005; Brown, 2015; Byrne, 2016). Specifically, adequate model fit for a confirmatory factor analysis model was defined by a chi-square/df value < 5, Root Mean Square Error of Approximation (RMSEA) value ≤ 0.10, Comparative Fit Index (CFI) ≥ 0.90, Incremental Fit Index (IFI) values ≥ 0.90, Tucker Lewis index (TLI) values ≥ 0.90, Goodness of Fit Index (GFI) values ≥ 0.85 and Standardised Root Meansquared Residual (SRMR) ≤ 0.08.

Results

Demographic Findings

A total of 326 participants' responses were considered for analysis of this study. Table 1 shows the demographic characteristics of the participants and results of the t-test and ANOVA test regarding fear of COVID-19, risk aversion, and work interaction avoidance. It can be seen that 29.8% males and 70.2% females were the respondents for this study, 59.8% were 30 to 39 age, 31.9% 40-49 age, 7.1% 50-59 age, 0.9% 60 and above age, 0.3% 20-29 age. Most participants were unmarried (51.5%). Most respondents were nurses (41.1%), and other occupations such as doctors, paramedics, technical staff, medical laboratory assistant, health officer, and patient consultant accounted for 20.2%, 17.2%, 9.5%, 5.2%, 3.7%, and 3.1%, respectively.

There was a statistically significant difference in risk aversion score according to sex (t = -2.659; p < .05). However, there was no significant relationship among the age of the participants, the marital status of the participants, and the speciality of the participants with risk aversion score.

Furthermore, there was a statistically significant difference in work interaction avoidance score according to marital status (t = -3.031; p < .05). However, there was no significant relationship among the sex, age, and the speciality of the participants with work interaction avoidance scores.

Moreover, there was no significant relationship with fear of COVID-19 among the sex of the participants, among the age of the participants, the marital status of the participants, the speciality of the participants.

Table 1.

Socio-demographic Characteristics of Healthcare Workers (n=326) Participated in the Study Regarding Fear of COVID-19, Risk Aversion and Work İnteraction Avoidance

			Risk Aversion (RA)		Work Interaction Avoidance (WIA)		Fear of COVID-19 (FCOVID-19) FC	
Variables	**Frequency (n)**	**Percentage (%)**	**t Test/ Anova(t/F)**	**p**	**t Test/ Anova(t/F)**	**p**	**t Test/ Anova(t/F)**	**p**
Sex								
Male	97	29.8	-2.659[a]	**.008**	-1.435[a]	.152	-1.265[a]	.207
Female	229	70.2						
Age categories								
20-29	1	.3						
30-39	195	59.8	.517[b]	.723	2.147[b]	.075	.601[b]	.662
40-49	104	31.9						
50-59	23	7.1						
>59	3	.9						
Marital Status								
Married	158	48.5	-.620[a]	.536	-3.031[a]	**.003**	.458[a]	.648
Unmarried	168	51.5						
Speciality								
Doctors	66	20.2						
Nurses	134	41.1						
Paramedics	56	17.2						
Medical laboratory assistant	17	5.2	1.057[b]	.388	.715[b]	.638	.869[b]	.518
Patient consultant	10	3.1						
Health officer	12	3.7						
Technical staff	31	9.5						

Note. [a] Independent sample t test; [b] ANOVA test

Descriptive Findings Related to Main Variables of the Research

Descriptive statistics, averages, standard deviations, reliability coefficients, number of participants and variance values are given in Table 2.

As a result of the confirmatory factor analysis, the overall reliability coefficient was found to be Alpha= 0.837. Because $0.80 \leq \alpha < 1.00$, the scale is highly reliable. Ensuring validity and reliability shows the existence of a structural relationship between fear of COVID-19, risk aversion and work interaction avoidance of the healthcare professionals.

Table 2.

Descriptive Statistics Related to Factors

Factors	N	Mean	Standard Deviation	Variance	Cronbach's alpha
Risk Aversion (RA)	326	3.7104	.72261	.522	.73
Work Interaction Avoidance (WIA)	326	2.2849	.72991	.533	.89
Fear of COVID-19 (FCOVID-19)	326	2.7187	.90364	.817	.89

The model fit measures

A total of 22 questions in this study constitute three latent variables. From the 22 questions, 2 item (questions 4 and 6 of the risk propensity scale) was removed because of poor communality extraction; finally, a total of 20 items/questions are taken into consideration to proceed further. The model fit was tested by different model fit indicators, which is given in Table 3.

Table 3.

Model Fit Measures

Measure	Estimate	Threshold	Interpretation
CMIN/DF	2.472	Between 1 and 5	Acceptable range
CFI	.924	≥ 0.90	Within range
GFI	.883	≥ 0.85	Within range
SRMR	.063	≤ 0.08	Within range
RMSEA	.067	≤ 0.10	Within range
RMR	.068	<0.08	Within range
TLI	.911	≥ 0.90	Within range

From Table 3, it can be summarized that this study questions/items of the latent variables pass through all the major model fit indicators suggested by Munro (2005), Brown (2015) and Byrne (2016).

The results of the measurement model

It was assumed that the reasoning between the variables in the research model can be explained. Confirmatory factor analysis was performed to test the validity of the scales used, and the structure of all scales were verified. Figure 1 shows the confirmatory factor analysis results and model fit for the variables of fear of COVID-19, risk aversion and work ınteraction avoidance.

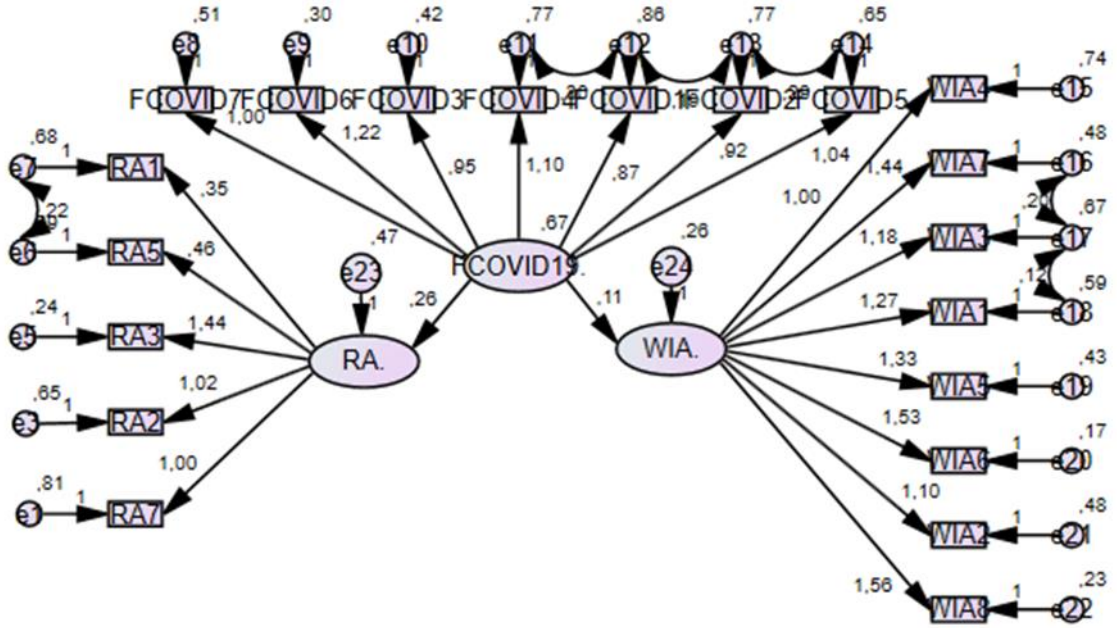

Figure 1. The Results of the Full Model

The results for measuring the reliability and validity of the measurement model are illustrated in table 4. Table 4 provides various measures of the measurement model. From the following table, it is seen that all three values of Cronbach's α is well above the minimum criteria (>0.70). Finally, for average variance extracted (AVE) and construct reliability (CR), Fornell and Larcker (1981) stated that although the AVE value is below 0.50, if the CR value is above 0.70, AVE values below 0.50 can be accepted. Table 4 represents that the reliability and validity of the constructs applied in this study met the criteria.

Table 4.

The Items' Estimate and the Constructs' Cronbach's α, AVEs and CRs.

Constructs	Items	Estimate	Cronbach's α	Average Variance Extracted (AVE)	Construct Reliability (CR)
Risk Aversion (RA)	RA7	.624	.736	.377	.73
	RA2	.674			
	RA3	.904			
	RA5	.372			
	RA1	.290			
Fear of COVID-19 (FCOVID19)	FCOVID7	.753	.898	.536	.86
	FCOVID6	.876			
	FCOVID3	.767			
	FCOVID4	.715			
	FCOVID1	.607			
	FCOVID2	.652			
	FCOVID5	.725			
Work Interaction Avoidance (WIA)	WIA4	.514	.890	.503	.89
	WIA7	.732			
	WIA3	.597			
	WIA1	.648			
	WIA5	.725			
	WIA6	.884			
	WIA2	.635			
	WIA8	.858			

Since the CR values are greater than 0.7, the factors have high construct reliability. The fit values examined show that the data fit the model well. Table 5 shows the results of the structural model.

Table 5.

The Result of the Structural Model

Hypothesis	Paths	Estimate	S.E.	C.R.	P	Result
Effect of Fear of COVID-19 on Risk Aversion						
H_1	RA <---- FCOVID19	.257	.059	4.345	.001	H_1 supported
Effect of Fear of COVID-19 on Work Interaction Avoidance						
H_2	WIA <--- FCOVID19	.107	.040	2.683	.007	H_2 supported

The obtained fit values show that the model fit is achieved. There is a positive impact of healthcare professionals' COVID-19 fear levels on work interaction avoidance and risk aversion behavior. The increase in the level of COVID-19 fear causes an increase in work interaction aversion and risk aversion behaviors, and the COVID-19 fear level has a direct impact on work interaction avoidance and risk aversion behaviors.

The results of the structural model

Obtained results indicated that fear of COVID-19 had a significant impact on risk aversion. As the level of fear of COVID-19 increased, risk aversion behavior also increased. By contrast, it was observed that as the fear level of COVID-19 decreased, risk aversion behavior also decreased. Thus, H_1 was statistically supported. According to the Health Belief Model, an risk perceptions are instrumental in influencing individuals' behaviours (Leppin & Aro, 2009). Higher risk perception can influence the retention of health care workers within the workforce (Stone et al., 2004) and their willingness to care for infected patients (Masur et al., 2003), particularly if they are concerned about well-being of themselves and their families. Studies on the SARS outbreak indicated that the majority of surveyed health care workers perceived a high risk of personal infection from SARS (Chong et al., 2004; Koh et al., 2005), fear of being infected (Chong et al., 2004; Imai et al., 2005; Koh et al., 2005), little control over whether they would be infected (Chong et al., 2004; Imai et al., 2005) and low survival chance if infected (Chong et al., 2004). Furthermore, fear of COVID-19 had a significant impact on risk aversion work interaction avoidance. As the COVID-19 fear level increase, so does the work interaction avoidance. On the contrary, it was observed that as the fear level of COVID-19 decreased, the work interaction avoidance also decreased. Thus, H_2 was statistically supported. Interaction avoidance is one important manifestation of approach and avoidance behaviors that newcomers perform in relation to their supervisors (Ashford et al., 2003). Newcomer negative affect makes avoidance behaviors more likely. This happens because people tend to avoid the target that triggered negative emotion previously (Baumeister et al., 2007). As a result of an initial fear/anger experience, the newcomer would learn that interactions with the supervisor give rise to negative affect and would be more likely to avoid interacting with the supervisor in the future (Nifadkar et al., 2020). Further, individuals may tend to avoid their difficult colleagues, shirk major responsibilities, and stay away from troublesome customers (Ashforth & Lee, 1990).

Discussion and Conclusion

COVID-19 disease is a global public health problem, and it can be potentially fatal. Because of their direct contact with patients, healthcare professionals play a critical role in preventing the COVID-19 outbreak through proper care and preventive procedures. In addition, the spread of the COVID-19 pandemic all over the world has led to the development of a new type of fear on all societies, especially healthcare workers.

The main goal of this study was to determine the effect of the level of fear experienced during the COVID-19 pandemic on risk aversion and work interaction avoidance behaviors. COVID-19 fear level creates a major threat to the well-being of healthcare professionals who are exposed to COVID-19 patients as part of their professional role. For this reason, the study hypothesized that 'fear of COVID-19' had a direct impact on risk aversion. Furthermore, 'fear of COVID-19' also had a direct impact on work interaction avoidance. The structural equation analysis further revealed that the positive impact of healthcare professionals' COVID-19 fear levels on work interaction avoidance and risk aversion behavior had an acceptable fit index. The empirical findings revealed that, the increase COVID-19 fear level caused an increase in work interaction aversion and risk aversion behaviors, and the COVID-19 fear level had a direct impact on work interaction avoidance and risk aversion behaviors. The level of fear experienced by healthcare professionals during the COVID-19 epidemic increased their tendency to show risk avoidance and work interaction avoidance behaviors.

It has been reported that being infected by contamination from the hospital and external environment or sharing the same environment with people diagnosed with COVID-19 are associated with greater mental health problems for healthcare workers (Kaya, 2020). Furthermore, fear of being infected is higher for healthcare workers than for the general population. On the other hand, this fear is mainly originated from health professionals' concerns of infecting their family and close ones rather than the fear of being exposed to the virus themselves. It was reported healthcare workers in China and Canada suffered from significant amount of anxiety due to fear of infecting their family members during SARS (Bai et al., 2004; Robertson et al., 2004).

Studies conducted during the main outbreaks including SARS (Tam et al., 2004), Middle East Respiratory Syndrome (MERS) (Lee et al., 2018), and currently COVID19, showed that front-line medical staff reports higher levels of stress that result in depression, fear, and post-traumatic stress disorder (Q. Chen et al., 2020). In support of our findings, P. Chen et al., (2016) emphasized that interacting with COVID-19 patients and the level of stress are among the reasons that affect the commitment of employees to their jobs and companies. Further to

this, work-related fear plays a mediating role on the relationship between inputs and employees' outcomes.

In another study, it was reported that a high-risk perception may influence the retention of healthcare workers in the workforce (Stone et al., 2004) and their willingness to care for infected patients (Masur et al., 2003). Styra et al. (2008) also claimed that the majority (60%) of the respondents noted that their friends and neighbors were avoiding them during SARS outbreak. However, in Koh et al.'s (Koh et al., 2005) and Nickell et al.'s (Nickell et al., 2004) studies, only 49% and 28% of the respondents respectively perceived that they were avoided or being treated differently. One-third of the respondents in two studies (Koh et al., 2005; Nickell et al., 2004) believed that people were avoiding their family members because of concerns of contracting SARS.

The majority of participants were concerned about inadvertent SARS transmission to family, friends and colleagues (Nickell et al., 2004; Koh et al., 2005) and believed that their loved ones were likewise worried about being infected with the disease from contacting with the health care workers (Nickell et al., 2004). Of the respondents in Nickell et al.'s study (2004), 38% reported changes in personal and familial lifestyle such as avoiding public spaces (e.g., restaurants and shopping centers) and avoiding interaction with friends and family during SARS outbreak. Studies examining the avian influenza outbreak also indicated similar results (Cheong et al., 2007; Wong et al., 2008). The majority of the primary care physicians working in private and public healthcare settings perceived that others would avoid them and their family members during a possible avian influenza pandemic (Wong et al., 2008). They also expressed concerns about their family members' being at a greater risk of infection with avian influenza because of their jobs (Wong et al., 2008).

It is obvious that all pandemics primarily endanger the physical and psychosocial well-being of healthcare workers. Active workers are the group that needs to be strengthened to effectively combat with the impacts of epidemics. Thus, all the necessary introductory characteristics of the employees, including the job description, the qualifications related to the working environment, risk factors and protective factors should be described in a systematic and holistic framework. Structuring the protection conditions to cover all employees, implementing quarantine protocols effectively over the entire health system, encouraging interactions between employees based on positive feedback, and meeting the needs related to family conditions are among the effective tools to cope with the fear and stress that the epidemic may cause.

In addition, the severity of the common psychological symptoms experienced by healthcare professionals (e.g., anxiety, depression, fear, and burnout) might change depending

on the working hours and conditions. As a protective measure, it would be beneficial to conduct mental health screenings for at risk individuals and to employ trauma focused psychosocial interventions to enhance coping strategies. The most effective coping strategies for healthcare workers battling the pandemic are reducing the fear and anxiety levels caused by COVID-19 among workers, as well as strengthening the social support networks from the general community. For this purpose, effective pandemic management and case control practices will support the protection of the psychosocial health of the employees.

Several emotional and psychological conditions including fear, anxiety, depression, and suicide ideation might be triggered due to the pandemic itself as well as by the adopted preventive measures. Special attention should be paid to vulnerable groups both regarding prevention of harmful emotional repercussions of the pandemic and provision of necessary assistance. The health authorities and the governments should strategize to alleviate the mental burden of COVID-19 pandemic by providing emotional support to the entire population, but particularly to the at-risk individuals.

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All authors contributed to the study conception and design. All authors read and approved the final manuscript. FY: study design, data collection, statistics, results interpretation, writing the manuscript, TS: study design, statistics, results interpretation, writing the manuscript FY and TS: study design, data collection, statistics, results interpretation, writing the manuscript.
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COVID-19 Salgın Sürecinde Yaşanan Korku Düzeyinin, Riskten Kaçınma ve İş Etkileşiminden Kaçınma Davranışlarına Etkisi: Sağlık Profesyonelleri Üzerinde Bir Uygulama

Özet

Küresel hastalık salgınlarında genelde sağlık sistemleri, özelde ise sağlık profesyonelleri için iş yükü ve stres ve belirsizlik durumları önemli ölçüde artar. Çalışma saatlerinin uzaması, çalışma ortamı koşullarının kötüleşmesi, hasta sayılarının artması; toplumun beklentilerini, kaygılarını ve çalışanların ise kendilerinin hastalık risklerini daha da arttırmaktadır. Dolayısıyla bütün bunlar sağlık çalışanlarının genel psikososyal işleyişini ve dayanıklılığını etkilemektedir. Bundan dolayı son 20 yılda art arda yaşanan SARS, MERS ve grip gibi salgınların ölümcül etkileri, sağlık otoritelerinin, politika yapıcıların ve halkın farkındalığını giderek arttırmıştır (Oxford ve diğerleri, 2002).

Sağlık çalışanları tüm pandemilerde hayatlarını riske atarak salgınlara karşı ön saflarda mücadele ettiklerinden dolayı, her zaman pandemi faktörlerine yakalanma riski en yüksek grup olmuşlardır. Sağlık kurumlarında çalışan sağlık çalışanlarının tamamı; hekimler, hemşireler ve diğer tüm yardımcı sağlık personelleri, salgınların stresine en üst düzeyde maruz kalmakta ve uzun süre psikolojik sonuçlarıyla baş etmeye çalışmaktadır. Sağlık çalışanları, her zaman SARS, Ebola, MERS ve COVID-19 gibi tüm yeni ve ölümcül salgınlardan en çok etkilenen ve zarar gören riski grup olmuştur (Tam ve diğerleri, 2004; Ji ve diğerleri, 2017; Khalid ve diğerleri, 2016; Suwantarat ve Apisarnthanarak, 2015).

Tüm dünyada olduğu gibi ülkemizde de salgınla mücadelede sağlık çalışanları ön saflarda mücadele vermektedir. Salgın sürecinde büyük bir özveriyle teşhis ve tedavi ekibinde yer alan sağlık çalışanları, bulundukları pozisyonların doğası gereği yaşadıkları ruhsal sorunlar açısından yüksek risk grubu içerisinde yer almaktadırlar. Sağlık çalışanları bu süreçte ölümcül bir hastalık riskine yakalanma ve alınan önlemlerin olumsuz sonuçlarını yaşamanın yanı sıra bu mücadelede ön saflarda mücadele etmenin verdiği zorlukla da karşı karşıyadırlar. Salgınların sağlık çalışanları üzerindeki olumsuz etkilerini inceleyen araştırmalar, bu bireylerin salgın sırasında ve sonrasında travma sonrası stres, anksiyete belirtileri, tükenmişlik ve depresyon belirtileri gösterdiğini ortaya koymuştur (Lee ve diğerleri, 2007; Maunder ve diğerleri, 2006).

Riskten kaçınma ise riskten uzak durma eğilimi olarak tanımlanır ve bir kişilik özelliği olarak kabul edilir. Bu nedenle riskten kaçınma, risk durumlarından kaçınanlar ve kaçınmayanlar arasında ayrım yapmak için kullanılan önemli bir niteliktir (De Matos ve diğerleri, 2007). Sağlık çalışanları üzerine yapılmış bir çalışmada, yoğun çalışma saatlerine

sahip olmaları, pandemi hastanesinde çalışmaları, hastanenin vaka yükünün fazla olması, birlikte çalıştıkları iş arkadaşlarının enfekte olması, koruyucu ekipman yetersizliği ve tedavi protokollerinin belirsizliği gibi durumların onların psikososyal yönden etkilenme düzeylerini ve riskten kaçınma düzeylerini arttırdığı bildirilmiştir (Lee ve diğerleri, 2005; Chen ve diğerleri, 2020). Ayrıca riskten kaçınma düzeyi yüksek olan insanların, aşırı derecede korkma ve endişe duyma eğiliminde oldukları vurgulanmıştır (Taylor, 2019).

Bu çalışmanın temel amacı, COVID-19 salgın sürecinde yaşanan korku düzeyinin, riskten kaçınma ve iş etkileşiminden kaçınma davranışlarına etkisini tespit etmektir. Araştırmada hastane tabanlı kesitsel araştırma deseni uygulanmıştır. Araştırmanın evrenini Ankara ilinde ikinci basamak tedavi sunan iki farklı kamu hastanesinin tüm sağlık profesyonelleri oluşturmuştur. Araştırmada kolayda örnekleme yöntemi tercih edilmiştir. Veriler internet üzerinden anket tekniği ile bizzat araştırmacılar tarafından toplanmıştır. Değerlendirmeye alınan ve verilerin analizinde kullanılan toplam katılımcı sayısı 326'dır. Verilerin analizinde SPSS ve AMOS paket programları kullanılmıştır. Betimleyici analizler, bağımsız örneklem t testi, ANOVA analizi ve yapısal eşitlik modellemesi uygulanmıştır. Yapısal eşitlik analizi ile elde edilen bulgular, modelin yapı geçerliliğinin sağlandığını göstermiştir. Sağlık profesyonellerinin COVID-19 korku düzeyinin riskten kaçınma davranışlarına direkt nedensel etkisinin pozitif yönlü ve 0.29 birim olduğu, iş etkileşiminden kaçınma davranışlarına ise direk nedensel etkisinin pozitif yönlü ve 0.17 birim olduğu tespit edilmiştir. Ayrıca kadın cinsiyeti ile riskten kaçınma davranışı arasında anlamlı ilişki bulunmuştur. Sağlık profesyonelleri arasında COVID-19 salgın sürecinde yaşanan korku düzeyi, onların riskten kaçınma ve iş etkileşiminden kaçınma davranışları gösterme eğilimlerini arttırmaktadır. Bunun aksine COVID-19'a yönelik korku düzeyi azaldıkça, sağlık profesyonellerinin riskten kaçınma ve iş etkileşiminden kaçınma davranışları gösterme eğilimlerinin de azaldığı görülmüştür.

Sağlık İnanç Modeli'ne göre, bireylerin risk algıları, onların davranışlarını etkiler (Leppin ve Aro, 2009). Aynı zamanda sağlık çalışanlarının özellikle kendilerinin ve ailelerinin sağlık ve güvenliğinin riski söz konusu olduğunda, işgücünde devamlılıkları (Stone ve diğerleri, 2004) ve enfekte hastalara bakma istekleri etkilenebilmektedir (Masur ve diğerleri, 2003). Başka çalışmalarda araştırmaya katılanların üçte biri (Koh ve diğerleri, 2005; Nickell ve diğerleri, 2004), SARS'a yakalanma endişeleri nedeniyle aile üyelerinden kaçındıklarını belirtmişlerdir. Benzer çalışmalarda araştırmaya katılanların çoğunluğu ailelerine, arkadaşlarına ve meslektaşlarına kasıtsız SARS bulaşmasından endişe duymuş (Nickell ve diğerleri, 2004; Koh ve diğerleri, 2005) ve sevdiklerinin de sağlık çalışanları ile temastan dolayı hastalığa yakalanma konusunda aynı şekilde endişeli olduklarına inanmışlardır (Nickell

ve diğerleri, 2004). Nickell ve diğerlerinin (2004) araştırmasına katılanların %38'i, SARS salgınının bir sonucu olarak kamusal alanlardan (örneğin restoranlar ve alışveriş merkezleri) kaçınma ve arkadaşlar ve aile ile etkileşimden kaçınma gibi kişisel ve ailesel yaşam tarzında değişiklikler olduğunu bildirmişlerdir.

Kuş gribi salgınını inceleyen çalışmalar da benzer sonuçlar göstermiştir (Cheong ve diğerleri, 2007; Wong ve diğerleri, 2008). Hem özel hem de kamu sağlık kuruluşlarından ankete katılan birinci basamak hekimlerinin çoğunluğu, olası bir kuş gribi salgını sırasında çalışma arkadaşlarının, kendilerinden ve aile üyelerinden kaçınacağını bildirdikleri görülmüştür (Wong ve diğerleri, 2008). Ayrıca, mesleklerinin ve iş ortamlarının bir sonucu olarak aile üyelerinin kuş gribi ile enfeksiyon riski altında oldukları konusunda endişelerini dile getirmişleridir (Wong ve diğerleri, 2008).

Ampirik sonuç, COVID-19 korku düzeyindeki artışın iş etkileşiminden kaçınma ve riskten kaçınma davranışlarında artışa neden olduğunu ve COVID-19 korku düzeyinin iş etkileşiminden kaçınma ve riskten kaçınma davranışları üzerinde doğrudan etkisi olduğunu ortaya koymaktadır. Sağlık çalışanlarının COVID-19 salgını sırasında yaşadıkları korku düzeyi, riskten kaçınma ve iş etkileşiminden kaçınma davranışları gösterme eğilimlerini artırmaktadır. Çalışmamızın sonucunu destekler nitelikte P. Chen ve diğerleri (2016), COVID-19 hastaları ile etkileşimin ve stres düzeyinin, çalışanların işlerine ve şirketlerine bağlılıklarını etkileyen nedenler arasında yer aldığını vurgulamışlardır. Benzer bir çalışmada da, yüksek risk algısının sağlık çalışanlarının işgücünde kalmasını (Stone ve diğerleri, 2004) ve enfekte hastalara bakım verme isteklerini etkileyebileceği bildirilmiştir (Masur ve diğerleri, 2003).