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Fear, Depression and Anxiety Levels of Nurses Working in Pandemic Outpatient Clinics in the Late Period of the COVID-19 Epidemic[1]

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ABSTRACT

The primary purpose of this study is to determine the correlational and structural relationships between the fear, depression and anxiety levels of nurses working in pandemic outpatient clinics during the period when the new coronavirus epidemic was accepted by all segments of the society and learning to live with the epidemic. Hospital-based cross-sectional study design was used in the study. The research population consisted of the nurse employees of six public hospitals with at least 1500 beds operating in different regions of Istanbul. Using the online questionnaire technique, data were collected from 450 nurses who worked in the COVID-19 pandemic outpatient clinic. IBM SPSS 23 and AMOS package programs were used in the analysis of the data. It was determined that the fear (mean:2.32), depression (mean:2.56), and anxiety (mean:2.32) levels of the nurses working in the pandemic outpatient clinics were partially lower than in the previous periods of the epidemic. Structural equation analysis revealed that the positive relationship between fear, depression and anxiety related to the COVID-19 epidemic had a high and acceptable fit index. In the late period of the COVID-19 epidemic, the fear, depression and anxiety levels of nurses working in pandemic outpatient clinics have partially decreased. There are reciprocal and strong positive relationships between the levels of fear, depression and anxiety caused by COVID-19.

Keywords: COVID-19, Fear, Depression, Anxiety, Nurses.

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[1] This research was carried out upon the approval of the ethics committee of Duzce University Scientific Research and Publication Ethics Committee (Date: 09.04.2021, Decision Number: 2021/113).

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COVID-19 Salgınının Geç Döneminde Pandemi Polikliniklerinde Çalışan Hemşirelerin Korku, Depresyon ve Kaygı Düzeyleri

ÖZET

Bu çalışmanın temel amacı, yeni koronavirüs salgınının toplumun tüm kesimleri tarafından kabul edildiği ve salgınla yaşamanın öğrenildiği dönemde pandemi polikliniklerinde çalışan hemşirelerin korku, depresyon ve kaygı düzeyleri arasındaki korelasyonel ve yapısal ilişkileri tespit etmektir. Araştırmada hastane temelli kesitsel çalışma tasarımı kullanılmıştır. Araştırmanın evrenini İstanbul ilinde farklı bölgelerde faaliyet gösteren en az 1500'er yataklı altı kamu hastanesinin hemşire çalışanları oluşturmuştur. Veriler çevrimiçi anket tekniği kullanılarak COVID-19 pandemi polikliniğinde çalışmış olan 450 hemşireden toplanmıştır. Verilerin analizinde IBM SPSS 23 ve AMOS paket programları kullanılmıştır. Pandemi polikliniklerinde çalışan hemşirelerin korku (ort:2,32), depresyon (ort:2,56) ve kaygı (ort:2,32) düzeylerinin salgının önceki dönemlerine göre kısmen daha düşük çıktığı tespit edilmiştir. Yapısal eşitlik analizi, COVID-19 salgınına ilişkin korku, depresyon ve kaygı düzeyi arasındaki pozitif ilişkinin yüksek düzeyde ve kabul edilebilir bir uyum indeksine sahip olduğunu ortaya koymuştur. COVID-19 salgınının geç döneminde pandemi polikliniklerinde çalışan hemşirelerin korku, depresyon ve kaygı düzeyleri kısmen azalmıştır. COVID-19 kaynaklı korku, depresyon ve kaygı düzeyleri arasında karşılıklı ve güçlü pozitif ilişkiler vardır.

Anahtar kelimeler: COVID-19, Korku, Depresyon, Kaygı, Hemşireler.

1. INTRODUCTION AND LITERATURE REVIEW

The COVID-19 disease, called the new type of coronavirus, has led to a serious epidemic originating in China, which has quickly become a global pandemic and has unprecedented consequences in the modern era (Garfin et al., 2020). Therefore, the World Health Organization declared the COVID-19 outbreak as "an emergency of international importance for public health" on January 30, 2020, and as a pandemic on March 11, 2020 (World Health Organization, 2020a). As of February 11, 2021, approximately 108 million people worldwide have been infected with this virus, and the number of deaths has approached 2 million 500 thousand people (Worldometer, 2021).

In the COVID-19 process, in addition to the unprecedented harsh quarantine measures, the curfews that started in many regions, the quarantine practices and the fact that citizens do not leave their homes unless it is mandatory, have adversely affected people's lives in many

ways. Therefore, all these developments have led to the emergence of various psychological problems such as fear, depression, stress and anxiety (Gao et al., 2020; Qiu Xiao et al., 2020). It has been stated that many different sources can trigger depression, anxiety and fear of COVID-19. Therefore, the head of fear of COVID-19 and anxiety and the level of experienced stress depends on the personality and perspective of events. It can be said that there is an interaction between fear of COVID-19, depression and anxiety (Kapcı, 2004). It has been observed that people's symptoms of fear, depression or anxiety during epidemic periods are strongly related to the intensity of the epidemic, and people closely monitor the number of new cases per day (Leung et al., 2005).

On the other hand, from a physiological perspective, fear of COVID-19 and anxiety are basic emotions that activate the sympathetic nervous system's "fight or flight" response and provide a rapid response when faced with an imminent threat. The contagious nature of the infection, its imminent threat and invisibility to the eye, and the increasing influence of the virus are the most important reasons why the COVID-19 Pandemic causes fear of COVID-19 or anxiety in both the society and healthcare workers (Pappas et al., 2009). The psychological responses that emerge during the Pandemic range from excessive fear of COVID-19 to indifference to fatalism. In some cases, psychological effects can be severe and prolonged (Taylor, 2019).

In addition, the COVID-19 process is not yet fully known, close contact is the greatest risk of transmission, and the disease has caused many deaths (World Health Organization, 2020b). All this has negatively affected people all over the World (Telli & Altun, 2020). Nurses have important duties in the fight against the disease (Gudi et al., 2020). At the same time, this Pandemic resulted in psychological affairs, including anxiety, depression and stress (Duan & Zhu, 2020). Similarly, previous studies showed that anxiety, depression, and fear of COVID-19 levels of individuals increased during infectious diseases such as SARS (Wu et al., 2005). Therefore, the COVID-19 Pandemic is predicted to pose severe threats to physical health and lives and trigger a wide range of psychological conditions such as depression, fear of COVID-19 and anxiety.

The first evidence from studies shows that COVID-19 is related to mental illnesses (Lai et al., 2020). For example, in a study consisting of about 9,000 people performed on social media, it was stated that 67.3% of the participants were highly or highly anxious about COVID-19. In contrast, 48.8% choose to self-isolate to avoid COVID-19 (Nelson et al., 2020). The fact

that the disease is transmitted by close contact has also increased the anxiety of healthcare professionals working directly with the patient. In particular, nurses are the occupational group that stays together with the patient for the longest time and works in close contact (Lai et al., 2020; Temel & Ertin, 2020). This situation may cause nurses to increase their fear and anxiety levels and experience death anxiety (Ergun et al., 2016; Sharif et al., 2016). Thus, the COVID-19 Pandemic has resulted in widespread depression, fear of COVID-19 and anxiety (Ahorsu et al., 2020). During the Pandemic, depression, fear of COVID-19 and anxiety interact in multiple ways; the tendency to negatively respond to uncertain events in emotional and behavioural patterns manifest themselves as fear of COVID-19, anxiety and intolerance (Buhr & Dugas, 2002).

It has been reported that about a quarter of university students show at least mild anxiety levels due to the COVID-19 outbreak (Cao et al., 2020). In another study, it was emphasized that the fear of COVID-19 will significantly affect the mental health of the public (Torales et al., 2020). Anxiety, defined as "a state of restlessness or worry caused by anticipating a real or perceived threatening event or situation" (Spielberger, 2010), was found to be shared among healthcare professionals who are directly involved in the management of patients. In another study, a higher risk of depression symptoms during a pandemic was associated with lower social resources and lower-income exposure to more stress (Ettman et al., 2020).

Although there are many studies on the COVID-19 Pandemic, the number of studies on the levels of depression, fear of COVID-19 and anxiety caused by COVID-19 is limited. Primarily, to date, such literature performed in Turkey has been missing; therefore, this study is an essential step in filling the gap in the literature by presenting the relationship between depression, fear of COVID-19 and anxiety of healthcare workers caused by COVID-19 in the second peak period of the new coronavirus pandemic.

2. METHODOLOGY

2.1. Study Design and Procedures

The study data were collected by online survey method during the period when the number of daily cases increased and new variations of the virus increased. This was a cross-sectional study performed via an online questionnaire between April 12, 2021, to April 30, 2021. The researchers designed and conducted the study. All participants were informed in advance that participation in the survey was voluntary, and their consent was obtained. The

research population consisted of the nurses of six public hospitals with at least 1500 beds operating in different regions of Istanbul. The quantitative research method was used to collect data from 450 nurses via an online questionnaire technique.

2.2. Instruments

The questionnaire form includes four parts where the first section consists of statements targeted to determine the level of depression caused by COVID-19; the second section aims to measure the level of fear of COVID-19; the third section focuses on the level of anxiety, whereas the final section measures the socio-demographic characteristics of the participants.

2.2.1. The fear of COVID-19 scale

The COVID-19 fear scale developed by Ahorsu et al. (2020) and adapted into Turkish by Artan et al. (2021) was used in the study. Each item in the scale is designed in a 5-point Likert type. Rising scores on the scale indicate that the participant's level of fear about COVID-19 has increased.

2.2.2. Coronavirus anxiety scale

Coronavirus Anxiety Scale developed by Lee (2020) and adapted into Turkish by Biçer et al. (2020) was used in the study. Each item in the scale is designed in a 5-point Likert type. Rising scores on the scale indicate that the participant's level of anxiety about COVID-19 has increased.

2.2.3. Depression scale

The depression scale developed by Shea et al. (2009) was used to measure depression for COVID-19. Each item in the scale is designed in a 5-point Likert type. Rising scores on the scale indicate that the participant's level of depression about COVID-19 has increased.

2.3. Data Analysis Method

The data collected for the study were uploaded into IBM SPSS 23 V and AMOS statistical analysis programs and then analyzed. First, the reliability analysis was performed on the data, and then the demographic features of the study were examined in terms of standard deviation, mean, frequency distribution and proportionality. In addition, correlation analysis was performed to determine the correlation coefficients between the variables. Finally, the

confirmatory factor analysis technique was applied with the AMOS package program to reveal how latent variables can be explained in terms of observed variables.

2.4. Conceptual Model of the Research

Previously published similar model studies were examined during the model development phase, and the conceptual/theoretical model of the research was created. Determining the correlational and structural relationships between fear of COVID-19, depression, and anxiety is the subject of the study. The research's conceptual model (Figure 1) discusses the correlational and structural relationships between these main variables.
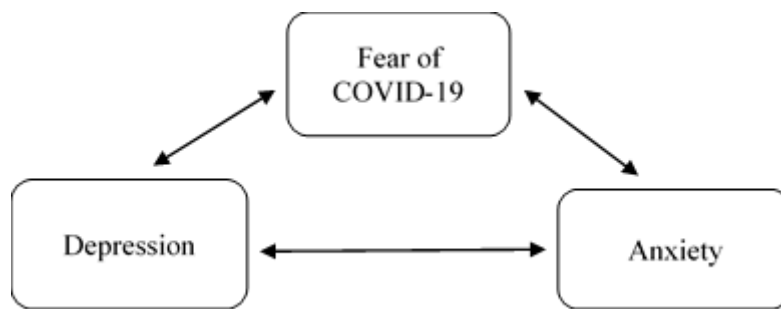
Figure 1. Conceptual model of the research

2.5. Ethics Approval

Before conducting the study, we obtained informed consent from the participants. This research was carried out upon the approval of the ethics committee of Duzce University Scientific Research and Publication Ethics Committee (Date: 09.04.2021, Decision Number: 2021/113). The quantitative research methodology was used because it is suitable for the research's purpose and basic argument, and the data set analysis was performed by using IBM SPSS 23 V and AMOS statistical analysis programs.

3. RESULTS

3.1. Demographic Findings

The vast majority (90.4%) of the nurses participating in the study were female, while a few (9.6%) were male participants. Among 450 nurses, 24.1% were aged 20-29 years, 43.2% were aged 30-39 years, 27.4% were aged 40-49, 5.3 % were aged 50-59 years. Most participants were married (87.4%). The majority of the participants had 5-10 years of professional experience (54.4%).

3.2. Descriptive Findings Related to Factors

Descriptive statistics, means, standard deviations, variance, reliability coefficients and Cronbach's alpha coefficients are given in Table 1.

Table 1. Descriptive statistics

Variables	N	Mean		Std. Deviation	Variance	Cronbach's Alpha
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic
Depression	450	2,5600	,04433	,88903	,884	0.867
Fear of COVID-19	450	2,3204	,04484	,88017	,905	0.865
Anxiety	450	2,3244	,04431	,81554	,884	0.823

As a result of the confirmatory factor analysis, the overall reliability coefficient was Alpha= 0.923. Because $0.80 \leq \alpha < 1.00$, the scale is highly reliable. Ensuring validity and reliability shows the existence of a structural relationship between depression, fear of COVID-19 and nurses' anxiety.

3.3. Correlation Analysis Findings

Correlation analysis examined the relationship between fear, depression and anxiety levels for COVID-19 in the research model. The results of the correlation analysis are shown in Table 2. In the literature, Pearson's correlation coefficient values between 0.00-0.30 indicate a low-level relationship; values between 0.30 and 0.70 indicate a medium level relationship; values between 0.70-1.00 indicate a high level of relationship (Büyüköztürk, 2015).

Table 2. Pearson's correlation analysis results

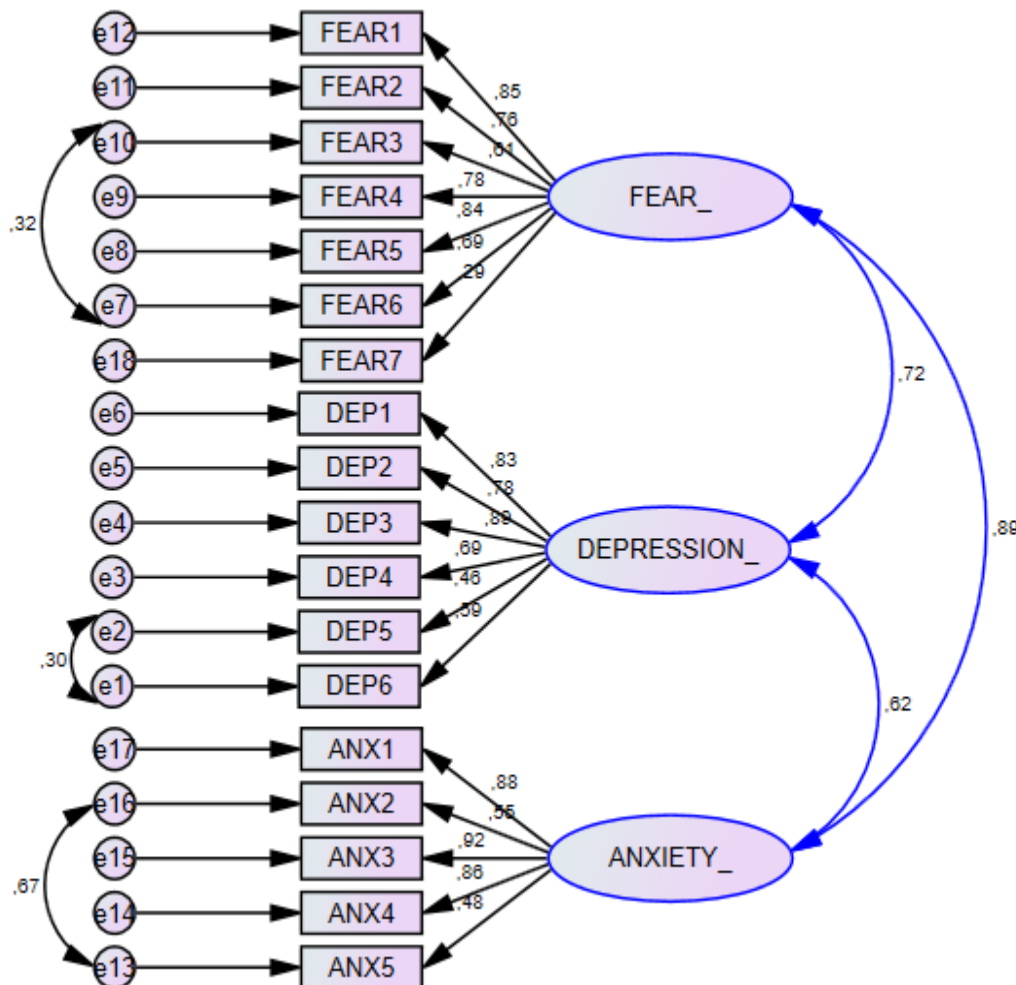|		Depression	Fear of COVID-19	Anxiety
Depression	Pearson Correlation	1	.642**	.750**
	Sig. (2-tailed)		.000	.000
	N	450	450	450
Fear of COVID-19	Pearson Correlation	.642**	1	.533**
	Sig. (2-tailed)	.000		.000
	N	450	450	450
Anxiety	Pearson Correlation	.750**	.533**	1
	Sig. (2-tailed)	.000	.000	
	N	450	450	450
**Correlation is significant at the 0.01 level.				

When Table 4 is examined, it is seen that there is a moderately positive and meaningful relationship between depression and fear of COVID-19 (r=0.642). In this case, it can be interpreted that the level of anxiety caused by COVID-19 also increases the level of depression. In addition, it was observed that there was a high level of a positive and significant relationship

between depression and anxiety (r=0.750). Therefore, it can be said that the level of depression caused by COVID-19 also triggers and increases the level of anxiety. Finally, it was observed that there was a moderately significant and positive relationship between fear of COVID-19 and anxiety (r=0.533). In other words, the increase in the level of fear caused by COVID-19 also increases anxiety.

3.4. Confirmatory Factor Analysis Results

It was assumed that the reasoning between the variables in the research model could be explained. Confirmatory factor analysis was performed to test the validity of the scales used, and the structure of all scales was verified. Figure 2 shows the confirmatory factor analysis results and model fit for the variables of depression, fear of COVID-19 and anxiety.

[(CMIN/DF=4.369; GFI=0.877; NFI=0.898; CFI=0.919; RFI=0.879; TLI=0.904; IFI=0.919; AGFI=0.837; RMSEA=0.087)]

Figure 2. Fear of COVID19- depression- anxiety research model

The values provided in Figure 2 show that the model fit is achieved. In addition, explained variance, standard error, t and p values of the factors to determine the validity and reliability of the research measurement model are given in Table 3.

Table 3. Confirmatory factor analysis results regarding the measurement model

Variables	Items	Estimate	Standard Error	T Value	P
Fear of COVID-19 (FEAR)	FEAR6	.694			-
	FEAR5	.843	.079	16.582	***
	FEAR4	.784	.085	15.509	***
	FEAR3	.610	.049	14.735	***
	FEAR2	.760	.076	15.060	***
	FEAR1	.847	.074	16.653	***
	FEAR7	.294	.076	5.976	
Depression (DEP)	DEP6	.593			-
	DEP5	.463	.069	10.110	***
	DEP4	.695	.101	11.721	***
	DEP3	.886	.099	13.621	***
	DEP2	.780	.101	12.665	***
	DEP1	.826	.092	13.119	***
Anxiety (ANX)	ANX5	.477			-
	ANX4	.862	,231	10.559	***
	ANX3	.917	.223	10.776	***
	ANX2	.550	.080	14.635	***
	ANX1	.879	.213	10.632	***

***p<0.01

Confirmatory factor analysis results for the measurement model are given in Table 3. The overall reliability coefficient was found to be Alpha=0.923. Because $0.80 \leq \alpha < 1.00$, the scale is highly reliable. Ensuring validity and reliability shows the existence of a structural relationship between depression, fear of COVID-19, and nurses' anxiety levels.

4. DISCUSSION

This research, which was carried out to determine the correlational and structural relationships between the fear, depression and anxiety levels of nurses working in pandemic outpatient clinics during the period when the new coronavirus epidemic was accepted by all segments of the society and learning to live with the epidemic, was carried out on the nurse employees of six public hospitals with at least 1500 beds operating in different regions of Istanbul. A hospital-based cross-sectional study design was used in the study. The results obtained from the research are given as follows:

According to the results of the correlation analysis revealing the relationships between the fear, depression and anxiety levels of nurses for COVID-19; a moderately positive significant relationship between fear of COVID-19 and depression; a high level of meaningful positive relationship was found between depression and anxiety and a relatively positive meaningful relationship between fear of COVOD-19 and anxiety.

Nurses are considered one of the highest risk groups for the mental effects of quarantine. After the SARS epidemic in 2003, many quarantined healthcare workers reported avoidance behaviours such as minimizing direct contact with patients, avoiding crowds, severe burnout symptoms, insomnia, fatigue, lower concentration, reluctance, and low motivation for work (Brooks et al., 2020). According to another study done in the past; It has been revealed that quarantine predicts high levels of depressive symptoms even three years after the epidemic (Liu et al., 2012). The deadly consequences of the epidemic, the possibility of the health system not being able to meet the treatment demands, the course of the epidemic and the unpredictability of its consequences have led to the emergence of fear as well as significant anxiety about both themselves and their loved ones (Bao et al., 2020). In addition, in a study conducted with 2,299 healthcare professionals during the COVID-19 outbreak, it was found that fear scores increased 1.4 times, and anxiety and depression scores were two times higher in clinical staff compared to non-clinical staff (Pappa et al., 2020). In another study conducted during the COVID-19 epidemic, in a meta-analysis of 13 studies in which 33,062 cases were evaluated, anxiety rates were 23.2%, depression rates 22.8%, and insomnia 38.9% (Lu et al., 2020).

By conducting confirmatory factor analysis, it was observed that the relationships between depression, fear of COVID-19 and anxiety levels had an acceptable index of fit. The reliability analysis was conducted for all variables, and it was determined that the reliability levels of the scales were high. The overall reliability coefficient was found to be Alpha=0.923. Because $0.80 \leq \alpha < 1$, the scale is highly reliable. Ensuring validity and reliability shows a structural relationship between depression, fear of COVID-19 and anxiety levels.

Previous studies have emphasized that the fear of COVID-19 has a significant impact on the population's mental health (Torales et al., 2020). The COVID-19 Pandemic has been reported to increase several psychological affairs, including anxiety, depression and stress (Duan & Zhu, 2020). Similarly, to determine the psychological impact of the COVID-19 outbreak on university students in China, it was reported that about a quarter of university students showed mild anxiety due to the COVID-19 epidemic (Cao et al., 2020). Likewise, in

a study conducted by Duman (2020) on university students, a positive, moderate and highly significant correlational relationship was observed between fear of COVID-19 and intolerance to uncertainty. In the same study, it was determined that the fear of COVID-19 significantly predicted the level of discrimination to fate. There are reports and scientific studies on the psychological impacts of the COVID-19 outbreak on the population, patients, healthcare professionals, children and the elderly to date (Chen et al., 2020; Yang et al., 2020; Li et al., 2020). This study also concludes that the Pandemic in Turkey has direct psychological effects on college students.

5. CONCLUSION

In summary, the risk of being infected during the Pandemic is very high among nurses. In addition to being infected; Situations such as encountering a few deaths, long working hours, being away from family for a long time can increase the levels of fear, anxiety and depression of nurses (Shultz et al., 2007). Therefore, regular sessions should be held by psychiatrists or psychologists to reduce psychological disturbances on health workers and other community members. However, healthcare workers are advised to provide flexible working hours, personal support and regular breaks during the Pandemic. Also, considering the estimates and precautions, the physical, mental, social and economic burdens of pandemics should be investigated during and after the epidemic. While most of the responsibilities rest with government officials, healthcare professionals and the public should be essential parts of this process. Therefore, in addition to a systematic application of psychosocial support, predictable measures necessary for public health and health workers' health should be taken.

CONFLICT STATEMENT

There is no conflict of interest with any institution or person within the scope of the study.

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