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ARAŞTIRMA MAKALESİ

Compassion Fatigue and Risk Factors in Nurses in the Covid-19 Pandemic

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Abstract

Background: Nurses may experience compassion fatigue due to the nature of the nursing profession, the pandemic period can increase this risk, and this can affect the nurse, the patient, and the health care system negatively. **Objectives:** The purpose of this study is to evaluate the compassion fatigue experienced by nurses during the pandemic process. **Methods:** This cross-sectional study was conducted with 280 nurses working in a hospital in Eskişehir. A structured questionnaire and the Compassion Fatigue -Short Scale were used as measurement tools. **Results:** The mean compassion fatigue score of the nurses was found as 68.36 (25.81). The compassion fatigue score of the nurses who were female, were graduates of health vocational high school, had 6-10 year of work experience, wanted to quit the job, worked for more than 48 hours a week during the pandemic, were anxious about being infected with the COVID-19 virus and spreading it to their family, and had family members diagnosed with COVID-19 was found to be significantly high. In addition, nurse's gender, weekly working hours, thoughts about the profession, feelings and experiences about the COVID-19 virus were determined to be risk factors for compassion fatigue. **Conclusion:** Considering the effect of compassion fatigue on nurses and the field of care, we recommend that nurses should be supported in this regard and that qualitative studies and prospective cohort studies with larger samples should ne planned.
Key Words: Compassion Fatigue, COVID-19, Pandemic, Nursing.

Öz
Covid-19 Pandemisinde Hemşirelerde Merhamet Yorgunluğu ve Risk Faktörleri

Giriş: Hemşirelik mesleğinin doğası gereği hemşireler merhamet yorgunluğu yaşayabilir. Pandemi dönemi bu riski artırabilir ve bu durum hemşireyi, hastayı ve sağlık sistemini olumsuz etkileyebilir. **Amaç:** Bu çalışmanın amacı pandemi sürecinde hemşirelerin yaşadığı merhamet yorgunluğunu değerlendirmektir. **Yöntem:** Kesitsel tipteki bu araştırma, Eskişehir'deki bir hastanede çalışan 280 hemşire ile gerçekleştirildi. Ölçüm aracı olarak yapılandırılmış soru formu ve Merhamet Yorgunluğu-Kısa Ölçeği kullanılmıştır. **Bulgular:** Hemşirelerin merhamet yorgunluğu puanı 68.36 (25.81) olarak bulunmuştur. Kadınların, sağlık meslek lisesi mezunlarının, 6-10 yıl süre ile çalışanların, mesleği bırakmak isteyenlerin, pandemi sürecinde haftalık 48 saatten fazla çalışanların, kendisine virüs bulaşma ve ailesine virüs bulaştırma kaygısı yaşayanların ve yakınına COVID-19 tanısı konulanların merhamet yorgunluğu puanı istatistiksel olarak anlamlı düzeyde daha yüksek bulunmuştur. Ek olarak cinsiyetin, çalışma süresinin, mesleğe ilişkin düşüncelerin, COVID-19'a ilişkin duygu ve deneyimlerin merhamet yorgunluğun açısından risk faktörleri olduğu saptanmıştır. **Sonuç:** Merhamet yorgunluğunun hemşireler ve bakım alanı üzerindeki etkisi dikkate alındığında hemşirelerin bu konuda desteklenmesi ve nitel çalışmalar ile daha geniş örnekleme sahip prospektif kohort çalışmaların planlanması önerilmektedir.
Anahtar Sözcükler: COVID-19, Hemşirelik, Merhamet Yorgunluğu, Pandemi.

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In December 2019, life-threatening pneumonia cases were reported in the Wuhan region of China, and the source of the infection was determined as COVID-19 (1). Since then, hundreds of thousands of people have died worldwide, and millions of people have been infected due to this rapidly spreading the COVID-19 virus (1,2). About 15% of the infected individuals have developed serious health complications, and these individuals have been in need of healthcare (2).

COVID-19 has significantly impacted not only patients but also the healthcare system. The ease of transmission of the COVID-19 virus, the lack of immunity of the population on a global scale, delayed tests, limited medical equipment, uncertainty of the pandemic trajectory, and the level of anxiety of the community have been factors that create risk in the health system (3). Health professionals from all over the world have been working at the frontline during the fight against the pandemic and made up the important group at risk (4). At this point, it is possible to say that health professionals may experience various psychological problems while working under high-risk conditions, such as disasters and pandemics (5), and that this situation may also affect nurses, who are an indispensable part of the health system.

Working in the healthcare field is characterized by the presence of various factors that can cause stress (6). However, the pandemic period can aggravate the level of this stress (3,7). While the general population should stay at home and avoid social contact due to the pandemic, health professional have been in direct contact with the virus (8). Nurses have found themselves in an environment with a complex patient care burden, long working hours, and rapidly changing conditions. This process, in which there is more unknown than known, has increased the risk of experiencing compassion fatigue (CF) by nurses (9). Also nurses stated that they felt uncertainty and fear, their perception of time and place changed, they experienced changes in the meaning of care, roles and relationships (10). Considering that the support provided to nurses in this area will contribute not only to nurses but also to the society (11), it is important to evaluate the CF that affects nurses in many areas during the pandemic (9).

Due to the nature of the profession, nurses often face many stressful situations, such as long-standing hours, the necessity of focusing, and working with individuals in need of assistance, as well as the difficulties of personal life (12). Pandemic, on the other hand, is a situation that can cause this stress to be felt more intensely (3,7). It has already been reported that the perceived stress level of nurses increased (13). CF may affect nurses mental health, work effectiveness, and patient safety outcomes. Also it may negatively affect the job satisfaction of nurses and may cause to leave (14). This picture often results in the risk of CF. Also it has been reported that a significant majority of nurses experience CF (15).

Compassion fatigue can be defined as emotional distress caused by the prolonged or repetitive presentation of compassion or empathy that can occur in professions with a caring role (16,17). According to another definition, it is the physical, emotional, and mental exhaustion of the healthcare professional that takes on the care of the patients suffering (18,19). This table leads to forgetfulness, attention deficit, fatigue, anger, and physical illnesses in nurses (20,21). It makes maintaining working difficult, decreases their motivation (22-24), and causes increased costs in care services (22,23). In other words, CF is a condition that negatively affects the health of nurses, patient safety, quality of care (22,23), and professional life (12).

Nurses may experience CF due to the nature of the nursing profession, the pandemic period can increase this risk, and this can affect the nurse, the patient, and the health care system negatively in many areas, but the limited number of studies revealing the current situation in the literature indicates the necessity of this study.

Aim

In this context, this study was planned to determine the CF of nurses during the COVID-19 pandemic. In this study, it was aimed to evaluate the CF in nurses during the COVID-19 pandemic.

Research Questions

The research questions were; (i) What is the CF score of nurses during pandemic? (ii) What are the factors affecting the total CF score of nurses?

Methods

Study Design

The study used a cross-sectional design.

Place and Time of Study

The study was carried out with nurses working in a hospital in Eskişehir during the pandemic (July 2020). The inclusion criteria were as follows: (i) providing one-to-one care to the patient; (ii) volunteering to participate in the study. The exclusion criteria were as follows: (i) working in an administrative position that does not involve giving patient care (n = 11).

Population and Sampling

The universe of the study consisted of 795 nurses working in a hospital in Eskişehir. The sample size, on the other hand, was made up of 260 nurses, which was calculated by using "the sampling the known population" formula (standard deviation d = .05, type 1 error α = .05, N = 795). The study was completed with the participation of 280 nurses.

Data Collection Tools

Data were collected during July 2020. Due to the pandemic, data were collected through a web-based online survey. The online questionnaire was sent to the mobile phones of the participants at regular intervals to invite them to the research. The system allowed each nurse to fill out the form once. The survey took an average of 5 minutes to complete.

The Structured Questionnaire; The questionnaire, created by the researchers by reviewing the literature (3,7,22,25,26), contains 21 questions aiming to identify the personal and professional characteristics of the nurses and their work experiences during the pandemic.

The Compassion Fatigue (CF) - Short Scale; The Turkish validity and reliability study of the scale, which was developed by Adams et al. (27), was conducted by Dinç and Ekici (28). This scale is a self-report tool that evaluates the CF level. It consists of a total of 13 questions. The items on the scale, which has a 10-point Likert type rating system, are graded between

"Rarely/never" (1) and "very often" (10). The scale has two sub-dimensions: (i) secondary trauma (items c, e, h, j, and l) and (ii) occupational burnout (items a, b, d, f, g, i, k, and m). There is no scoring algorithm and a cut-off point for the scale. The lowest and highest scores that can be obtained from the scale are 13 and 130, respectively. As the scores obtained from the scale increase, the level of CF experienced by individuals also increases. In the validity and reliability study of the scale conducted in our country, Cronbach's α coefficient was found to be .876 (28). In the current study, Cronbach's α coefficient was found to be .913 (Table 1).

Variables of Study

Dependent variables; CF score and independent variables; personal and professional characteristics of the nurses and their work experiences during the pandemic.

Data Analysis

The statistical analysis was conducted using statistics package program. The normality assumptions were analyzed with the Shapiro–Wilk test. Descriptive analyses were presented using mean ± SD (range) or n (%), where appropriate. The student's t-test was used for the analysis of normally distributed quantitative data. One-Way ANOVA was used for comparison of parametric variables between groups, and the Tukey HSD test was used as a post-hoc test for significant cases. Multivariate linear regression analysis was performed to determine the factors associated with the total CF score (Variables that were significant in the relationship and difference tests were included in the regression analysis). The variables with $p < .05$ in the univariate analyses were further tested in the multivariate model. A p-value < .05 was considered statistically significant.

Ethical Considerations

To implement the study, ethical approval was obtained from a university non-interventional clinical research ethics committee (Date:18/05/2020, Issue:23), institutional permission was granted by the hospital administration (E-31568761-804.01-63217), and permission to utilize the scale was obtained from the scale authors. After the necessary permissions were received, written consent was obtained from all participants before the study started. Research and publication ethics were followed in this study.

Results

Table 1. Nurses' Compassion Fatigue Scores During Pandemic (n = 280)

Scale	Mean	Standard Deviation	Minimum	Maximum	Cronbach's Alpha
Total compassion fatigue score	68.36	25.81	13	130	.91
Secondary trauma sub-dimension score	25.66	11.07	5	50	.82
Professional burnout sub-dimension score	42.71	16.41	8	80	.87

The mean age of the nurses participating in the study was 29.89 ± 7.17 years (20-56 years). Also, 80.4% of the participants were female, 60.7% were single, and 66.4% had an undergraduate degree. The median of the participants' work experience as a nurse was 5 years (1-34 years). During the pandemic, the unit where 66.4% of the nurses worked didn't change, 61.8% worked for 48 hours or less, 67.5% had no problems in accessing protective equipment, 68.6% gave care to individuals diagnosed with COVID-19 however, 60% didn't receive any orientation training related to COVID-19. In addition, 20% of them were diagnosed with COVID-19.The mean CF score of the nurses was found as 68.36 (Table 1).

Table 2. Compassion Fatigue Score of the Nurses According to Their Characteristics (n = 280)

Characteristics	n (%)	Total compassion fatigue score*	p
Age			.789
20-30	184 (65.7)	68.66 ± 26.39 (13-130)	
31 or older	96 (34.3)	67.79 ± 24.8 (13-123)	
Gender			.001
Female	225 (80.4)	71.19 ± 25.86 (13-130)	
Male	55 (19.6)	56.82 ± 22.36 (21-108)	
Education			.040
Health Vocational High School	28 (10)	77.32 ± 32.46 (13-112)[a]	
Associate degree	40 (14.3)	73.9 ± 25.32 (22-130)[a,b]	
Undergraduate degree	186 (66.4)	65.34 ± 25.15 (13-123)[b]	
Graduate degree	26 (9.3)	71.85 ± 19.99 (39-107)[a,b]	
Marital status			.235
Single	170 (60.7)	66.89 ± 25.93 (13-130)	
Married	110 (39.3)	70.65 ± 25.59 (13-123)	
Working years as a nurse			.001
0-1	62 (22.1)	58.61 ± 22.62 (14-106)[a]	
2-5	83 (29.6)	68.63 ± 26.8 (13-121)[a]	
6-10	59 (21.1)	79.81 ± 25.22 (25-130)[b]	
≥11	76(27.1)	67.14 ± 24.55(13-123)[a]	
Position at work			.479
Nurse	256 (91.4)	68.7 ± 25.94 (13-130)	
Nurse manager	24 (8.6)	64.79 ± 24.67 (22-108)	
Choice of the nursing job			.060
Unwillingly chosen	77 (27.5)	73.06 ± 23.16 (21-112)	
Willingly chosen	203 (72.5)	66.58 ± 26.59 (13-130)	
Status of quitting the job			.001
Would not quit	97 (34.6)	58.94 ± 25.11 (13-120)	
Would quit	183 (65.4)	73.36 ± 24.83 (14-130)	

* Data are presented as mean ± SD (range), Student's t-test, and One-Way Anova.. Different lowercase letters in this column indicate statistically significant difference between groups.

Table 2 shows the total CF scores of the nurses according to their personal and professional characteristics. Accordingly, the CF score of the nurses who were female (p = .001), were health vocational high school graduates (p = .040), had 6-10 years of work experience (p = .001), and wanted to quit the profession (p = .001) was statistically significantly high (Table 2).

Table 3. Compassion Fatigue Score of Nurses According to Their Work Experience During the Pandemic (n = 280)

Experiences	n (%)	Total compassion fatigue score*	p
Change of the unit where the nurse work			.774
No	186 (66.4)	68.05 ± 25.4 (13-130)	
Yes	94 (33.6)	68.99 ± 26.74 (14-123)	
Weekly working hours			.033
48 hours or less	173 (61.8)	65.78 ± 25.14 (13-123)	
More than 48 hours	107 (38.2)	72.55 ± 26.45 (13-130)	
Problem accessing protective equipment			.210
Yes	189 (67.5)	67.02 ± 25.3 (13-120)	
No	91 (32.5)	71.15 ± 26.78 (13-130)	
Having concerns about virus transmission			.001
No	29 (10.4)	50.86 ± 21.58 (21-108)	
Yes	251 (89.6)	70.39 ± 25.53 (13-130)	
Having concerns about spreading the virus to family members			.001
No	22 (7.9)	48.68 ± 20.16 (21-106)	
Yes	258 (92.1)	70.04 ± 25.58 (13-130)	
Giving care to patients diagnosed with COVID-19			.913
No	88 (31.4)	68.11 ± 26.61 (13-123)	
Yes	192 (68.6)	68.48 ± 25.51 (13-130)	
Receiving orientation training to provide care for patients diagnosed with COVID-19			.065
No	168 (60)	70.77 ± 23.78 (13-121)	
Yes	112 (40)	64.75 ± 28.32 (13-130)	
Diagnosed with COVID-19			.119
No	260(92.9)	67.7 ± 25.5 (13-130)	
Yes	20(7.1)	77.05 ± 28.86 (14-120)	
Having a family member diagnosed with COVID-19			.001
No	205 (73.2)	64.31 ± 24.67 (13-130)	
Yes	75 (26.8)	79.44 ± 25.78 (14-121)	
Accommodation			.440
Alone	72 (25.7)	65.33 ± 26.68 (14-130)	
Family/friends	174 (62.1)	69.86 ± 25.04 (13-123)	
Hotel/guesthouse	34 (12.1)	67.15 ± 27.99 (20-120)	

* Data are presented as mean ± SD (range), Student's t test, and One-Way Anova

Table 3 presents data about the working hours of the nurses during the COVID-19 pandemic and their total CF scores. The CF score of the participants who worked more than 48 hours a week (p = .033), were concerned about being infected with the COVID-19 virus (p = .001) and spreading it to their family (p = .001), and had a relative diagnosed with COVID-19 (p = .001) was statistically significantly high (Table 3).

Table 4. Factors Affecting the Total Compassion Fatigue Score

	Compassion fatigue						95.0% Confidence Interval	
Model*	**B**	**SE**	**β**	**t**	**Sig.**	**VIF**	**Lower**	**Upper**
(Constant)	24.01	6.122	-	3.92	.001	-	11.948	36.054
Female gender	11.404	3.616	.176	3.154	.002	1.132	4.285	18.523
Health Vocational High School graduation	5.669	4.596	.066	1.234	.218	1.043	-3.379	14.717
Work experience of 6-10 years	8.009	3.445	.127	2.325	.021	1.083	1.226	14.792
Thought of quitting the job	13.178	2.904	.243	4.537	.001	1.048	7.46	18.896
Working more than 48 hours a week during the pandemic	3.417	2.884	.064	1.185	.237	1.077	-2.26	9.095
Concerns about being infected with the virus	10.667	4.684	.126	2.277	.024	1.117	1.445	19.889
Concerns about spreading the virus to the family members	11.235	5.484	.117	2.049	.041	1.194	.439	22.031
Presence of a family member diagnosed with COVID-19	11.615	3.142	.2	3.697	.001	1.062	5.43	17.801

$R = 0.506$; $R^2 = 0.256$, * Multivariate linear regression analysis

When the risk factors affecting CF were examined, female gender (β = .176; p = .002), work experience of 6-10 years (β = .127; p = .021), tendency to quit the profession (β = .243; p = .001), concerns about being infected (β = .126; p = .024) and spreading the COVID-19 virus to the family (β = .117; p = .041), and presence of a relative diagnosed with COVID-19 (β = .2; p = .001) were found to positively affect the CF (Table 4).

Discussion

COVID-19 is a newly identified disease, and knowledge of the pathophysiological impact, epidemiology, and demographic consequences of the pandemic is changing rapidly. The speed at which information is updated causes complexity in patient care (28) and stress for nurses (29,30). Witnessing the difficulties experienced by patients who need intensive care during the pandemic process and the death of some is another source of stress for nurses (3). Besides, the COVID-19 virus threatens the lives of healthcare workers, too. Death tolls reported worldwide also support this data (11). However, this difficult process is strong enough to affect not only nurses but also the fight against COVID-19 (3,12,20,23,24,29). In this study, CF, which is one of the stress factors causing wear on nurses (17), was evaluated. Accordingly, the mean CF score of the nurses was found to be 68.36 (± 25.81). The World Health Organization has acknowledged the impact of COVID-19 on individuals' mental health and recommended that health professionals should be provided with proactive support (31). The results obtained from this study should be evaluated in light of this information.

The CF score of the nurses varied according to some of their personal and professional characteristics. The CF score was higher in nurses who were female, graduated from health vocational high school, had a work experience of 6-10 years, and wanted to quit their profession (p < .05). All variables except graduation from a health high school were among the factors that positively affected CF. At this point, priority can be given to providing support to these vulnerable nurses. Also, nurses can be provided with training on ways to cope with stress and to access resources that help stress management. These initiatives will enable nurses to feel a sense of control (11).

During the pandemic, the working conditions of nurses have changed. Some nurses have been unable to work due to health problems, and this has brought about a lack of healthcare personnel. Besides, increased workload, limited staff (29), unplanned shifts, and long working hours further aggravated working conditions (11). In this study, CF of nurses working under similar conditions was evaluated. Nurses working more than 48 hours a week had a higher CF score (p < .033). The things that can be done to support nurses at this point can be listed as creating shift systems that will allow nurses to rest and organizing nurses to work in high-risk areas in turns (32).

Nurses working under tough conditions during the pandemic are concerned about being infected with the COVID-19 virus, as well as transmitting it to their families (7,29,30). They are so concerned about this case that they may be reluctant to seek help from their family to protect them. This may increase the risk of CF (7). In this study, the CF score of nurses who were concerned about being infected with the COVID-19 virus and infecting their families was higher (p < .001), and also, this concern was determined to be a risk factor affecting CF positively (p < .024; p < .041). It was found that 7.1% of the nurses participating in the study were diagnosed with COVID-19 despite this fear they experienced. Although the CF score of the nurses diagnosed with COVID-19 was higher than those who were not, there was no statistically significant difference (p > .05). This result is among the remarkable findings of the study. However, the CF score of the nurses who had a relative diagnosed with COVID-19

was higher ($p < .001$). Also, this is a risk factor for CF ($p < .001$). At this point, providing mental, emotional and behavioral support to healthcare professionals is a necessity to maintain both their health and the health of the community (11).

Another remarkable finding of this study was that the CF scores of the nurses who provided and did not provide care for patients diagnosed with COVID-19 did not show a statistically significant difference ($p > .05$). This result can be evaluated in two ways. The first is that nurses focus on the patient, not on the disease, and the second is that this process affects nurses equally, even if they do not give care to patients diagnosed with COVID-19. Despite this result, it should be kept in mind that the environmental, psychological, and emotional impact of the care given to this patient group may affect the personal health and well-being of nurses. Therefore, managing the emotional effort of nurses during the pandemic is a necessity to support their mental health (32).

In this study, we also did evaluations about whether the nurses received orientation training to provide care for the patient group diagnosed with COVID-19. Accordingly, it was found that more than half of the nurses were not trained. Although the CF score was higher in those who did not receive training, there was no statistically significant difference compared to those who received training ($p > .05$). This situation can be explained by the speed at which information about COVID-19 is updated (32) and the existence of ambiguous and confusing information (30).

The high risk of virus-related infection and inadequate protection against contamination poses a serious threat to nurses' health (11,29). Also, lack of personal protective equipment (PPE) leads to increased anxiety and anger of nurses (11). In this study, it was determined that one out of every three nurses had problems accessing PPE. The CF score of the nurses who had problems accessing PPE was higher than those who had no problems; however, this difference was not statistically significant ($p > .05$). Yet, it should be kept in mind that limited PPE is a factor that prevents the nurse from providing quality care (30). For this reason, providing healthcare workers with PPE and reminding them of steps for infection prevention at frequent intervals will support the development of a sense of trust in nurses (11).

During the pandemic, nurses have preferred to stay at a hotel or in places where they are alone to protect their families or relatives from the risk of COVID-19 infection. Therefore, they have had to be isolated, they have had limited sharing, they have been unable to share common places with family members, and they have often been lonely. All of these may be risk factors for CF (9). Despite all this isolation, the place of accommodation was found to not affect the CF scores ($p > .05$). While interpreting this result, this courageous effort of nurses to protect their families should be taken into account, and it should be kept in mind that this may increase their physical and mental fatigue.

In summary this study revealed that nurses experienced CF during the pandemic. Also, the CF was higher in nurses who were female, were graduates of health vocational high school, had 6-10 year of work experience, wanted to quit the job, worked for more than 48 hours a week during the pandemic, were anxious about being infected with the COVID-19 virus and spreading it to their family, and had family members diagnosed with COVID-19. Besides, nurses' gender (female), work experience (6-10 years), thoughts about the profession (planning to quit the profession), feelings about the COVID-19 (concerns about being infected with the COVID-19 virus or spreading it), and experiences (presence of a family member diagnosed with COVID-19) were determined to be a risk factor for CF.

Limitations

This study has some limitations. First, the data were collected online due to the pandemic. Therefore, the participants could not be observed while they were filling out the forms. Second, the sample covered only one hospital. Therefore, the generalizability of the results was limited. We recommend that new studies should be carried out with large samples in different regions. The third limitation was the analysis of a limited number of variables regarding CF. It is important to examine this concept, which is especially important for the pandemic process, with different variables in future studies. The last limitation was that the study was designed in a cross-sectional type. Therefore, causality was determined to a limited extent. At this point, we think planning future studies in a prospective cohort design will contribute to the literature. Also, qualitative studies will allow nurses to reveal their experiences regarding the pandemic process.

Use of Results in Practice

In a systematic review, it was stated that the quality of life of healthcare workers was significantly affected by the COVID-19 pandemic. In this systematic review, it was revealed that the level of CF increased and the level of compassion satisfaction decreased of health professionals (33). In addition, it is known that the perceived destructiveness and criticality of COVID-19 events increase nurses' CF, which in turn mediates post-traumatic stress disorder (34). This situation may adversely affect not only the quality of care, but also the psychological well-being and quality of life of health professionals. Considering that the health system has been experiencing serious problems globally for many years, health workers with CF may cause the problems of the health system to grow. For this reason, it should be a necessity, not a choice, to implement preventive strategies for processes such as compassion fatigue in healthcare workers. The results show that long-term interventions are needed to improve compassion skills among nurses.

Finally the status of nurses in terms of experiencing compassion fatigue may differ when evaluated in international dimensions. However, human experience is universal and can be generalized. Therefore, we believe that the results obtained from this study will be a guide for nurses and strategies to be developed to support them.

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