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Pshychological Resilience and Percieved Stress Level in Nurses: Experience of Nurses in Turkey

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Abstract

Objective: To determine the effect of psychological resilience levels of nurses on perceived stress levels in this study.
Methods: The research was carried out with 153 nurses. Socio-demographic Questionnaire, The Brief Resilience Scale, and Perceived Stress Scale were used as data collection tools.
Results: The nurses' total Brief Resilience Scale score average was 17.72 ± 4.48, and the total Perceived Stress Scale score average was 31.74 ± 7.18. There was a negative and moderately significant relationship between the resilience and stress level of the nurses. During the pandemic process, the level of stress that nurses perceive increases as their psychological resilience decreases.
Conclusion: Psychological resilience and coping with stress are traits that can be improved. It is important to establish strategies to increase the resilience of nurses and improve their ability to cope effectively with stress.

Introduction

The new Coronavirus disease first appeared on December 29, 2019, in Wuhan, China. After examining the samples taken from the patients, on January 7, it was understood that the virus that caused the disease was from the Coronavirus family such as SARS (2002) and MERS (2012).[1,2] Due to these features, the virus was named New Coronavirus 2019 (2019-nCoV, now SARS-CoV-2). The virus, which can be transmitted from person to person, spread from the Asian Continent to Europe and America within a short period of 2 months and the World Health Organization (WHO) declared the COVID-19 disease as a 'Pandemic' on March 11, 2020.[3,4]

In this process, undesirable conditions such as disease burden and infection risk created by Covid-19 in the health services also affected healthcare workers.[5] During the COVID-19 pandemic, nurses were directly involved in diagnosis, treatment, and care; therefore, nurses faced the risk of developing stress and other mental illness symptoms. With the epidemic, nurses have strained all working conditions and made difficult decisions under pressure. Among the factors that may cause mental problems in nurses during the pandemic process, the increase in the number of cases, the intensity of the workload, and the lack of adequate personal protective equipment as well as the inadequacy of drugs and the lack of needed support are shown.[6] In this process, nurses tried to decide how to use limited resources equally among patients, how to balance the needs of patients with their own physical, and psychological needs, as well as how to fulfill the wishes of patients and families in harmony with their teammates.[7] In addition, nurses may also experience the fear of infecting their close circles such as family, friends, and colleagues. They may worry about the uncertainty of the process, and the exclusion and stigmatization which may occur due to the possibility of carrying the virus.[8] These questions may cause nurses to suffer moral damage, stress, and more severe mental health problems.

Psychological resilience is defined as the process of adapting well in the face of distress, trauma, tragedy, and family problems as well as serious health problems, workplace, or financial stresses. In short, psychological resilience is the ability of an individual to successfully return from these difficult experiences.[9] Considering all the problems faced by nurses, it is seen that high levels of psychological resilience are important for nurses to effectively combat COVID-19 infection and protect them from stress. The purpose of this study was to examine the stress and psychological resilience levels of nurses who were in close contact with patients during the pandemic.

Methods

Design, settings, and participants

The research was planned and conducted in descriptive and cross-sectional type. The study was conducted with nurses who were working at a training and research hospital. The population of the research was limited to the nurses working in this hospital. The aim was to reach all the nurses working in the hospital without selecting a sample. The sample included 153 participants in the study.

Procedure

Data collection forms used in the study were prepared online. The link of the research was shared with the nurses through the nursing services directorate of the hospital where the study was conducted. The participants were informed about the study aims and procedures of the research. No personally identifiable information was requested.

Measurements

Data collection tools utilized in this research were The Sociodemographic Information Questionnaire, The Perceived Stress Scale (PSS), and The Brief Resilience Scale (BRS).

Sociodemographic information questionnaire

It consists of questions to determine the sociodemographic characteristics of the nurses.

The brief resilience scale (BRS)

The scale was developed by Smith *et al.* (2008) to measure individual psychological resilience.[10] The Turkish version of the scale was adapted by Doğan in 2015.[11] The scale consists of 6 items. Each item is scored on a scale of 1 to 5, 1 being 'not suitable at all,' and 5, 'completely suitable.' The total score obtained from the scale varies between 6 and 30. As the score obtained from the scale increases, psychological resilience also increases. For the Brief Resilience Scale, 6 - 11 indicates low resilience, 12 - 22 indicates medium resilience, and 23 - 30 indicates high resilience.[12] The reliability of the scale was calculated by internal consistency and test - retest methods. Accordingly, the internal coefficient of consistency reliability ranged from 0.80 to 0.91. The internal coefficient of consistency was 0.83 in the Turkish version.[10,11] The internal coefficient of consistency was 0.77 for this study. Also, the internal coefficients of consistency for each item were found as 0.75, 0.73, 0.77, 0.71, 0.73, and 0.71 respectively.

Perceived stress scale (PSS)

The Perceived Stress Scale was developed by Cohen, Kamarck, and Mermelstein in 1983.[13] The scale consists of 14 items and is designed to measure how stressful some situations in a person's life are perceived. The Turkish Version of the Scale was made by Eskin *et al.* (2103).[14] Each item is scored on a scale of 0 to 4, with 0 being 'never,' and 4, 'very often.' 7 of the items containing positive statements are scored in reverse. In addition to the long form with 14 items, PSS has 2 more forms consisting of 10 and 4 items respectively. In this study, we used a questionnaire consisting of 14 questions. The scores of PSS- 14 range from 0 to 56. As the score obtained from the scale increases, the perceived stress increases.[13,14] The score between 42 - 56 shows a high-stress level, the score between 27 – 41, a medium stress level, and the score between 11 – 26, a low stress level. The Cronbach alpha value of the 14-question form was determined as 0.84 in the scale validity and reliability study.[14] The internal coefficient of consistency was 0.78 for this study. Also, the internal coefficients of consistency for the items were found as 0.77, 0.76, 0.77, 0.77, 0.78, 0.77, 0.76, 0.78, 0.75, 0.74, 0.78, 0.78, 0.77, and 0.76.

Data analysis

SPSS program (IBM Corp., Armonk, New York, USA) was used for data analysis. Percentage and number were used for categorical variables. Mean and standard deviation were used to calculate the scores of the scales used. Correlation analysis was performed to determine the relationship between perceived stress level and psychological resilience level.

Ethics approval

Before starting the study, written permission was obtained from the COVID-19 Scientific Research Evaluation Commission of the Turkish Ministry of Health, General Directorate of Health Services. Ethical approval was obtained from the Rural Clinical Research Ethics Committee (Reference No.: 2020/186 - Date: May 27, 2020). Written approval was also obtained from the provincial health directorate of the hospital where the research was conducted. Due to pandemic conditions, data in this study were collected online. For this reason, in the first part of the online questionnaire, after it was explained that the participation was voluntary, and the information provided would be kept confidential, the consent to participate in the research was obtained online.

Results

Sociodemographic characteristics of nurses

The distribution of the sociodemographic characteristics of the nurses participating in the study is shown in Table 1. The average age of the nurses included in the study was 30.02 ± 7.78. While 49.7% of the nurses are women, 50.3% are men; 51% are married, and 60.1% are undergraduates. Distribution of data on the work characteristics and pandemic period is shown in Table 2. The average working year was 6.57 ± 7.36. 35.9% of the nurses are intensive care nurses. When looking at the way they work, 26.1% work in shifts, 25.5% work at night, and 48.4% work both day and night. Of the total sample, 77.8% did not report any chronic diseases. The types of support that the group participating in the study currently needs most were financial support (47.1%), financial/ moral support (23.5%), and psychological support (21.6%), respectively. 71.2% of the nurses reported that family relations were negatively affected during the pandemic. A total of 50.1% of nurses did not find the support given to healthcare workers during the pandemic sufficient. The nurses also reported that they experienced intense feelings of fatigue (53.6%), anxiety (52.3%), psychological weakness (52.3%), and burnout (45.1%), as well as despair (28.8%). When the factors affecting these feelings were examined, it was found that the concern about transmission of the disease to relatives (26.1%), intensive working conditions (20.3%), and continuing increase in the number of cases (17.6%), as well as isolation conditions (12.4%), and public failure to comply with rules for preventing transmission (12.4%) (Table 1) were all reasons behind the recorded feelings of stress.

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Table 1. Distribution of sociodemographic characteristics of nurses

Characteristics	n	%
Age, years (mean±SD)	30.02 ± 7.78	
Gender		
Female	76	49.7
Male	77	50.3
Education status		
High School	33	21.6
Associate degree	11	7.2
Undergraduate Degree	92	60.1
Master's degree	17	11.1
Marital Status		
Married	78	51.0
Single	75	49.0
Chronic disease		
Yes	34	22.2
No	119	77.8

Table 2. Distribution of data on the work characteristics and pandemic period

Characteristics	n	%
Working year (mean ± SD)	6.57 ± 7.36	
The way he/ she works		
In shift	40	26.1
Night	39	25.5
Day and night	74	48.4
The type of support most needed right now		
Financial and moral support	36	23.5
Financial support	72	47.1
Social life support	3	2.0
Educational support	9	5.9
Psychological support	33	21.6
Family relations negatively affected during the pandemic process		
Yes	109	71.2
No	44	28.8
Find sufficient support of the public to healthcare professionals during the pandemic process		
Yes	75	49.9
No	78	50.1
The feeling that best describes you right now*		
Despair	44	28.8
Burnout	69	45.1
Physical weakness	43	28.1
Psychological weakness	80	52.3
Fatigue	82	53.6
Insomnia	30	19.6
Helplessness	34	22.2
Fear	38	24.8
Anxiety	80	52.3
Factors affecting these feelings		
Isolation conditions (wearing masks, glasses, using disinfectants all the time)	19	12.4
Caring for the patient in isolation	3	2.4
Intensive working conditions	31	20.3
The number of cases continue to increase	27	17.6
Public failure to obey the rules to prevent transmission	19	12.4
Getting the disease on me	1	0.7
Concern about the transmission of the disease to my relatives	40	26.1
The disease appeared in my close friend	1	0.7
Life-threatening	5	3.3
Other	7	4.6

*More than 1 option has been marked.

The 3-level distribution of *STEN* scores in the Brief Resilience Scale and Perceived Stress Scale as a percentage of the nurses

The sample group's total Brief Resilience Scale score average was 17.72 ± 4.48, and the total Perceived Stress Scale score average was 31.74 ± 7.18. Table 3 presents 3-level distributions of BRS and PSS STEN results in the entire group of subjects: low scores indicate low intensity of the characteristic under study (STENs 1 - 4), average scores prove moderate intensity of the characteristic (STENs 5 - 6), and high scores (STENs 7 - 10) show high intensity of the characteristic. From Table 3, it is seen that 43.1% of the nurses fall into the average resilience category and 47% of them fall into the high stress category.

Relationship between the Brief Psychological Resilience and Perceived Stress Scale

Table 4 illustrates the relationship between psychological resilience and perceived stress levels of nurses. In the correlation analysis, a negative and moderately significant relationship between the 2 scales was determined. As the psychological resilience levels of nurses increase, the stress levels they perceive decrease.

Discussion

Unlike other workplaces, hospitals are institutions with different and intense sources of stress.[15] The burden of disease and the risk of infection caused by COVID-19 puts a strain on the health system. The negativities caused by the global pandemic also have a significant impact on health workers.[5] The pandemic negatively affects the mental health of doctors, nurses, and health personnel because they work long hours, have long shifts, and are under intensely stressful conditions.[16] In a study by Trumello *et al.* in 2020, it was determined that stress, burnout, secondary trauma, and anxiety, as well as depression were higher among staff working with COVID-19 patients. In addition, in the same study, it was determined that the levels of stress and burnout were higher in the professionals in units with higher contamination rates.[17]

Disasters, including outbreaks of serious illnesses, often require a high level of urgent medical interventions initiated without focusing on the psychological well-being of caregivers. In addition to witnessing physical suffering and death, sudden threats to the caregiver's safety, anxiety, and over-arousal, as well as hypervigilance, sleep disturbance, compelling memories, and thoughts can cause depression and grief.[18] In this study conducted with nurses during the Covid-19 pandemic process, the nurses experienced feelings of fatigue (53.6%), anxiety (52.3%), and psychological weakness (52.3%), as well as burnout (45.1%), and despair (28.8%). When the factors affecting these feelings were examined, it was found that they were: concern about transmission to the relatives of the disease (26.1%), intensive working conditions (20.3%), continued increase in the number of cases (17.6%), and isolation conditions (12.4%), as well as the public's failure to follow the rules for preventing transmission (12.4%). In addition to these,

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Table 3. The3-level distribution of STEN scores in the Brief Resilience Scale and Perceived Stress Scale as a percentage of the nurses

	Low results	Average results	High
	(1 - 4 STEN)	(5 - 6 STEN)	(7 - 10 STEN)
Scales	N (%)	N (%)	N (%)
Brief Resilience Scale	**38 (24.9)**	**66 (43.1)**	**49 (32.0)**
Perceived Stress Scale	**24 (15.9)**	**57 (37.1)**	**72 (47.0)**

Table 4. Relationship between psychological resilience and perceived stress levels of nurses

	Perceived Stress Scale	
Scale	r	*P*
Brief Resilience Scale	−0.524	0.001

uncertainties when outbreaks first occurred, rapid progress of the disease, and casualties, as well as other unknowns regarding their treatment, reveal many uncertain issues for health systems and health professionals.

Situations that are unspecified, life-threatening, or perceived as threats cause anxiety in individuals. Anxiety is an emotion that occurs when a person feels unsafe. Nurses and other health professionals actively take on a role of treatment and care in this process, where their health is also at risk. The increasing number of cases and subsequent rise in mortality rates are thought to reveal feelings such as anxiety, despair, fatigue, and burnout/ psychological weakness in nurses. Burnout is a multifaceted response to job stress that includes elements of exhaustion, cynicism, and inefficiency. It has recently emerged as a significant risk factor for all clinicians, particularly those who suffer high rates of death and trauma, and who have perceived inappropriate, or inadequate care. The accompanying features of burnout are loss of physical, cognitive, and emotional energy; this may result in decreased ability to use effective coping strategies, negative attitudes and layoffs.[18] A study conducted in China revealed that 50.4% had depression, 44.6% had anxiety, 34.0% had insomnia, and 71.5% had psychological stress symptoms among healthcare professionals (doctors and nurses) treating COVID-19 patients.[6]

Due to the contact-related nature of the pandemic, the most emphasized measures since the emergence of the pandemic are masking, distance, and increased hygiene. It was observed that the failure of society to pay due attention to the specified security measures caused the nurses to experience feelings such as anxiety and despair. Nurses are also concerned about transmitting the virus to their relatives with whom they are in contact. Maraqa *et al.* determined that in a study with healthcare professionals, the largest stress source for majority of the participants was the possibility of them infecting their relatives.[19] The types of support that the group participating in the research currently needs most are financial support (47.1%), financial and moral support (23.5%), and psychological support (21.6%), respectively. 50.1% of the nurses do not consider the support given to healthcare professionals during the pandemic sufficient. Epidemic periods bring along more challenges and longer working hours than the usual working conditions of nurses. In this process, many nurses also got the virus because of their direct involvement in the care of patients. Through this, it is thought that nurses want to see the reward for their devoted work, while also improving their working conditions and social security conditions.

Nurses are healthcare professionals who witness patients' experiences of suffering and moments of death while providing care. During the Covid-19 pandemic, most of the nurses witnessed these situations and they continue to do so. It is seen that this situation negatively affects the nurses both spiritually and psychologically. As a result, it is thought that the need for spiritual and psychological support of nurses has increased. 71.2% of the nurses who participated in the study reported that family relations were negatively affected during the pandemic. The intense working conditions brought about by the pandemic, in tandem with their concerns about infecting relatives, have led to a decrease in the time allocated to family and relatives for many nurses. As a result of this situation, many nurses and health professionals stayed elsewhere instead of going home in order to isolate themselves from family members. In this process, some hotels in Turkey have offered free accommodation to support health professionals who cannot go home for fear of infecting their relatives.

Psychological resilience is defined as a person's adaptation process: the ability to recover himself or the ability to overcome change successfully against important stress sources such as a trauma, a threat or family or relational troubles, serious health problems, as well as workplace and financial problems.[9] Health care workers represent a group at specific risk, because they provide care for confirmed or suspected cases and/ or generally maintain close contacts while physical distancing is warranted.[20] Considering the psychological resilience levels of the nurses, it was concluded that they got an average of 17 points from the scale, which was between 6 and 30 points, thus showing that their level of resilience was low. Most of the nurses participating in the study got results close to the average from the psychological resilience scale. In a study conducted in Japan, it was also concluded that the psychological resilience levels of nurses are lower than that of other occupational groups and are a risk factor for the development of depression.[21]

The COVID-19 pandemic affects not only physical health but also mental health and well-being. The viral epidemic puts health workers who provide frontline care during outbreaks at high risk of developing mental health problems. The current pandemic is a new source of stress (or traumatic agent) from psychopathological points of view.[22] In this study, the average point of the nurses' 'Perceived Stress Scale (PSS)' was 31.74 ± 7.18. In the validity study of the scale, it is stated that a score of 27 and above means the perceived stress is at a moderate level. Also, most of the nurses highly rated their perceived stress. Hence, the conclusion is that the level of stress perceived by the nurses who created the sample was medium. Surrati *et al.*, in a study conducted with healthcare professionals, determined that the perceived stress in healthcare workers was at a moderate level.[23] The coronavirus (COVID-19) outbreak has exposed healthcare professionals to challenges such as unique stress factors and psychological trauma. Allbott *et al.* describes these challenges as uncertainty about the ultimate size, duration, and effects of the crisis; concerns about the level of preparedness within individual health organizations and the public sector; potential threats to 1's health, lack of adequate personal protective equipment, and other necessary medical supplies; and the risk of transmission of the virus to loved ones and colleagues.[18] A study with health professionals found that nurses had 8 times higher stress levels than other occupational groups. The reason for this was that nurses were directly involved in the diagnosis,

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treatment, and care of COVID-19 patients.[24] Factors, such as the nurses' direct and long-term contact with Covid-19 patients due to their primary caregiver role in the health system and the increase in the care burden caused by the rise in the number of patients due to the pandemic, are thought to increase the perceived stress in nurses.

The reactions of people when they encounter stressful and traumatic situations differ. In these and similar situations, there are individuals who give reactions that result in mental disorders such as anxiety and depression. There are also individuals who recover from this negative situation in a short time and continue their normal lives. For people who recover and survive after stressful and traumatic events, this power is called psychological resilience. Resilience affects the disease process and subsequent health as it helps to adapt flexibly to changes caused by stressful events and to recover from negative emotional experiences.[25] In our study, it was concluded that as the psychological resilience levels of nurses increased, their perceived stress levels decreased.

All healthcare professionals experience various stressful situations such as working under time, pressure, increased workload, undertaking multiple roles, and having emotional problems during their clinical practice. The increase in stressors experienced in the workplace may negatively affect the physical and mental health of health professionals and may reveal symptoms such as burnout and traumatic stress. This may adversely affect the well-being of employees as well as their ability to practice.[26] Coping and resilience are strategies that protect the mental and psychological health, restore balance, and facilitate adaptation that are adversely affected in the face of stressful situations, traumatic events, and difficulties. Individuals who do not have these strategies may experience more negative mental and psychological problems in situations such as disasters, diseases, and epidemics.[27] It is therefore vital to support healthcare professionals in maintaining physiological well-being, self-efficacy, and feelings of hope. Individual peer support also helps the person to create a sense of self-efficacy and purpose by allowing them to share their lives. It is crucial to identify and support nurses who have inadequate or inappropriate coping behavior, who are at high risk of exposure to danger/ trauma during a crisis, and who may be prone to stress reactions.[18]

During the COVID-19 pandemic process, healthcare professionals working on the front lines, who do not have enough opportunities for sleep and rest, and who have a heavy workload, may experience anxiety, depression, distress, and sleep problems. It is stated that it is important to provide an adequate resting environment for health workers and to plan job rotations during long-lasting disasters such as pandemics.[28]

It is stated that peer support groups and structured stress management interventions are effective in reducing stress, increasing well-being and resilience, and it is emphasized that these approaches should be applied to cover the pre-pandemic period.[29] McCann *et al.* suggested the implementation of strategies and mentoring programs aimed at developing positive and nurturing professional relationships, positive thinking, increasing emotional insight, and maintaining life balance; benefits also include improving spirituality in order to strengthen psychological resilience in nurses.[26]

Conclusion

In this study, it was concluded that as the psychological resilience levels of nurses increased, their perceived stress levels decreased. Nurses are health professionals who, by profession, must provide care in extraordinary situations such as epidemics. Calamities such as epidemics also reveal the stress factor. For this reason, it is necessary to have skills in the curriculum of nursing that will enable nurses to cope with stressors. Also, it is thought that including these training within the scope of in-service training during their work in health institutions will be effective in empowering nurses against stress. Psychological resilience functions as a protective and strengthening mechanism against stressors and is a feature that can be improved. Strategies can be planned to increase the psychological resilience of nurses who are at high risk of exposure to various stressors throughout their working life. Significantly, these strategies and mentoring programs should be integrated into nursing training programs and in-hospital in-service training programs. In this way, nurses can provide quality care to the individuals affected by the epidemic without risking their own physical and mental health during the epidemic process.

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Abbreviations. MERS, Middle East Respiratory Syndrome; SARS, Severe Acute Respiratory Syndrome; PSS, Perceived Stress Scale, BRS, The Brief Resilience Scale; WHO, World Health Organization; COVID, Coronavirus Disease

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