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Experiences of Intensive Care Nurses Caring for Covid-19 Patients: A Qualitative Study

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ABSTRACT

Objective: The aim of this study is to examine the experiences of intensive care nurses in the process of providing care to Covid-19 patients. **Material and Methods:** A qualitative descriptive design was used. Twenty intensive care nurses participated with the purposeful sampling method. The data was collected through semi-structured WhatsApp web video calls. The data were analyzed using thematic analysis. **Results:** Two main themes were obtained: (1) psychological impact; (2) physical impact. Fear, loneliness, stress, psychological fatigue, psychological fatigue, feeling of death sub-themes were obtained from the main theme of psychological impact, while working conditions, working with personal protective equipment sub-themes were obtained from the main theme of physical impact. **Conclusion:** Nurses who had to work during the Covid-19 pandemic were found to have psychological and physical impacts
Keywords: Covid-19, Intensive Care, Nurse, Experience, Qualitative Study.

Covid-19 Hastalarına Bakım Veren Yoğun Bakım Hemşirelerinin Deneyimleri: Niteliksel Bir Çalışma

ÖZ

Amaç: Bu çalışmanın amacı, yoğun bakım hemşirelerinin Covid-19 hastalarına bakım sağlama sürecinde yaşadıklarını incelemektir. **Gereç ve Yöntem:** Niteliksel tanımlayıcı tasarım kullanılmıştır. Amaçlı örnekleme yöntemi ile 20 yoğun bakım hemşiresi katılmıştır. Veriler, yarı yapılandırılmış soru formu ile WhatsApp web görüntülü görüşmelerle toplanmıştır. Veriler, tematik analiz kullanılarak analiz edilmiştir. **Bulgular:** Psikolojik ve fiziksel etkilenim olmak üzere iki ana tema elde edilmiştir. Psikolojik etkilenim ana temasından korku, yalnızlık, stres, psikolojik yorgunluk, ölümü hissetme alt temaları elde edilirken, fiziksel etkilenim ana temasından çalışma şartları, kişisel koruyucu ekipmanla çalışma alt temaları elde edilmiştir. **Sonuç:** Covid-19 salgınında çalışmak zorunda kalan hemşirelerin psikolojik ve fiziksel alanda etkilenimlerinin olduğu belirlendi.

Anahtar Kelimeler: Covid-19, Yoğun Bakım, Hemşire, Deneyim, Nitel Çalışma.

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INTRODUCTION

The new coronavirus disease (Covid-19), which first appeared in Wuhan, China, is an acute respiratory disease. The disease spread rapidly all over the world and was defined as a pandemic by the World Health Organization on March 11, 2020 (WHO, 2020). This highly contagious disease is transmitted by droplets and contact. While some people with Covid-19 show no symptoms or only mild symptoms of upper respiratory illness; some people develop serious complications such as severe pneumonia and acute respiratory distress. People with mild symptoms are treated out patiently, while those with moderate to severe symptoms are treated in hospitals (Singhal, 2020). There are currently in one year 756.581.850 million active cases in the world and 17.004.677 active cases in our country (February 17, 2022). 99.689 (0.5%) of infected patients worldwide, 633 (8%) in our country are treated in serious condition and intensive care units (Worldmeters, 2020). These increasing patient numbers put extraordinary pressure on healthcare systems around the World (Cadge et al., 2021). Some of the hospitals and especially intensive care units are customized for Covid-19 patients to meet the growing patient demand (Halacı et al., 2020).

Nurses, the main protagonists of such an extraordinary outbreak, have been providing and continuing to provide care from the beginning of the outbreak to the very beginning with great responsibility in the preliminary stages to overcome this epidemic (Sun et al., 2020). Nurses have been exposed to various health risks such as fear of infection, stigma, personal equipment competence, increased workload, new workplace, high mortality rates in Covid-19 and similar Middle East respiratory syndrome (MERS) outbreaks and have been adversely affected physically, psychologically and socially in severe acute respiratory syndrome (SARS) outbreaks (Lai et al., 2020; Lee et al., 2018). Especially critical care nurses, emergency nurses and thoracic nurses experienced more intense symptoms such as psychological distress and mental health (Lai et al., 2020).

It has been reported that nurses, including those working in intensive care units, experience unpreparedness, social isolation, loneliness, conflict in professional roles, organizational expectations, obscurity, and fear of contamination (Muz & Erdoğan, 2021). This may affect the protection of health professionals and the provision of continuous and comprehensive patient care (Chen et al., 2020).

The number of Covid-19 patients continues to increase in many countries, and millions of nurses worldwide have been and will continue to be affected, both physically and psychologically. Because nurses in Turkey had little knowledge about their experiences during the Covid-19 pandemic. This study is aimed at determining what Covid-19 patients experience in intensive care units in the process of providing care.

MATERIALS AND METHODS

Design of study

An exploratory, qualitative method with a phenomenological design has been used (Polit & Beck, 2009). The Consolidated Criteria for Reporting Qualitative Research checklist was followed during the study (Tong et al., 2007).

Participants and recruitment

The study sample included nurses working in the Covid-19 intensive care unit of a tertiary training hospital. Purposive sampling method was used in the sample selection of the study. The sample size was determined to ensure data saturation. The first participants were known to the researchers and the other participants were reached using snowball sampling method. The criteria for inclusion were: a) volunteering to participate in the study, b) providing care in intensive care to patients with Covid-19. The sample size of the study was reached when the data were repeated and data saturation was reached. The study was completed with 20 nurses.

Participants were sent an e-mail to explain the purpose of the study and to obtain their oral and written consent. It was explained to all participants that participation is voluntary, WhatsApp web video calls and audio recordings will be made. The interview time was arranged with the nurses whose verbal and written consent was obtained.

Data collection

The data was collected between May and September 2020 using a semi-structured interview guide and introductory information form. The introductory information form contains questions about the age, gender and year of work of the nurses. The semi-structured interview guide consists of 2 basic open-ended questions developed by the authors after the literature has been scanned. The interviews were conducted by researchers who were trained in qualitative interviewing. The interviews were conducted via WhatsApp web video calls. Each participant was interviewed once. Each interview lasted an average of 40-60 minutes. Interviews were conducted in a quiet environment for both the participant and the researcher. During the interviews, "What have you experienced in the provision of health care since the day the Covid-19 pandemic alarm was issued, what were you affected by? "What are your feelings after these experiences?" After asking questions, they were asked to explain. They were encouraged to elaborate on the subject with questions such as "can you please provide more information on this subject?" All interviews were recorded, written word for word and checked for inaccuracy (Holloway & Galvin, 2016). The research team consists of a lecturer who has experience in intensive care nursing and trained in qualitative studies, an associate professor in public health nursing and a researcher who has training in qualitative studies, and a lecturer doctor with experience in emergency and disaster management.

Data analysis

The data were analyzed using the six-step thematic analysis method defined by Braun and Clark's (2006) (Braun & Clarke, 2006). No categories were defined beforehand as the study was based on an inductive methodology. The first stage consisted of transcribing the interviews, and the second stage consisted of determining the appropriate codes for the purpose of the study. In the third stage, sub-categories, categories and themes were created by grouping codes that express the same meaning. In the fourth stage, sub-themes and themes were revised and simplified. In the fifth stage, themes and sub-themes were defined by name. In the sixth stage, the results were converted into reports.

Validity and reliability

The reliability of the study was evaluated according to the criteria set by Guba and Lincoln (1985) (Lincoln & Guba, 1985). For reliability, data source triangulation was performed by comparing the views of nurses with different perspectives. Using peer inquiry, the two researchers discussed the codes they independently identified until they came to consensus and identified the most appropriate codes, categories and themes. Purposeful sampling method was used to ensure transferability. In addition, nurses were asked to explain in detail their experiences during the Covid-19 pandemic (Holloway & Galvin, 2016).

The query control method was used to ensure reliability. The themes were confirmed by the second researcher, who was not involved in the data collection and evaluation process. To improve validity, participants were asked to confirm after the data was summarized (Lincoln & Guba, 1985).

Ethical consideration

In order to carry out the study, the ethics committee dated April 15, 2020 and numbered 2020-6/41 was obtained from the Ethics Committee for Clinical Research at Uludağ University Faculty of Medicine.

RESULTS

Twenty (80% female, 20% male) intensive care nurses participated in the study. The nurses are a (minimum age of 22 and a maximum of 32 and have a bachelor's) degree. The working experience of the nurses ranged from 4.15±3.11 years. Demographic characteristics of nurses were given in Table 1.

As a result of the analysis, two main themes were developed. (1) psychological impact; (2) physical impact. Descriptions of all themes are presented in the following section.

Theme 1: psychological impact

This theme explains the psychological effects experienced by nurses caring for patients with Covid-19 in the intensive care unit, such as fear and anxiety, loneliness, stress and death.

Fear

Nurses were found to have different reasons for their fears. The nurse who experienced the first outbreak expressed her fear as follows;

"A Covid-19 intensive care team was established in our hospital before the cases started to be hospitalized. I was there for this team. I was so scared when I heard that. It's been a few years since I started nursing. It was the first time I'd encountered an epidemic (Nurse,2)." Nurses were adversely affected by the clinical course of the disease when caring for patients with Covid-19. While the nurses were expressing these feelings, they described it as a difficult situation to get out of. These feelings were expressed in different words by all participants.

"...Most of the patients were intubated and their condition was very bad. For this reason, their maintenance took a long time, the frequency of aspiration application was increasing. I was wondering if I was infected while I was caring for my patient (Nurse, 1)."

Nurses feared medical staff would be infected. They stated that they were afraid of being infected and transmitting the infection to their families.

"One day I could be infected too; I could infect my family without realizing it. I was so afraid of making my family sick, especially infecting my daughter (Nurse, 3)."

Loneliness

Nurses took isolation measures to avoid infecting their families. They indicate that this situation causes them to experience loneliness. They focused more on the lack of social support and the expressions of being away from family while expressing a sense of loneliness. Describing loneliness as a negative feeling, the nurses considered the health of their families as the positive side of this process. The nurses stated this as follows.

"I was living with my parents before the pandemic. I separated the houses in order not to carry the disease to them in the pandemic. I still live apart from my family and haven't seen them in 2 months. I feel so lonely and unhappy. I think I have to do this for their sake (Nurse, 4)."

Stress

Healthcare professionals, who have great responsibilities, are affected by the uncertainties in the care process. The nurse expressed that she was experiencing stress due to this influence with the following words.

"We have a great responsibility during the Covid-19 process. In fulfilling these responsibilities, was my care enough to combat the disease? The answers to such questions were unclear, which caused me stress (Nurse, 13)."

Table 1. The participants' demographic characteristics (n=20).

Variables	Mean±SD	Min.-Max.	n	%
Age (years)	25.70±2.57	(22-32)		
Working experience (years)	4.15±3.11	(1-10)		
Gender				
Female			6	80
Male			4	20
Total			20	100

Min= Minimum, Max= Maximum, SD= Standard Deviation.

Emotional exhaustion

Nurses said they experienced emotional exhaustion while caring for patients. Here's how one of the nurses described what happened.

"Covid-19 patients were coming out of intensive care either recovering or getting worse and dying. Nurses witnessed this situation from beginning to end. I started to empathize uncontrollably with every patient in the intensive care unit. This situation began to consume me emotionally (Nurse, 11)."

Feeling death

Nurses said they were affected by the deaths of the young patients they cared for.

"The death of my young patients affected me a lot. That's when I felt death so close to me. I was young, too (Nurse, 9)."

Nurses explained that they were afraid of dying, especially dying alone as follows.

"If I got sick and didn't get over it, I wouldn't have seen my family for the last time. I was afraid of succumbing to sickness and dying all alone (Nurse, 16)."

Theme 2: physical impact

The second theme is the theme in which intensive care nurses describe the physical effects of working with the changing working order and personal protective equipment in the Covid-19 pandemic.

Working conditions

Institutions have changed their working patterns to reduce contact with patients during the pandemic. One change was to reduce the number of nurses on duty. The nurses stated that they were physically exhausted.

"The hospital management left nurses with a gap of 3 days after their 24-hour shifts. This was good practice to reduce contact but with the number of nurses present the intermittent shifts became a nightmare. Since the number of patients I was looking at was high, I was giving care to patients without a break. I was very tired when I got home from the shift (Nurse, 7)."

A large number of participants said that additional Covid-19 intensive care units were established as the number of patients increased. It was stated by a participant that the establishment of additional units without eliminating the lack of nurses was a physical burden.

"...The opening of a new unit without nurse reinforcements caused us to be on shifts every other day. I have not been infected by patients during the period I worked. But working conditions drained my strength and I started to feel physically unwell (Nurse, 14)."

Working with personal protective equipment

Nurses said they use personal protective equipment to protect themselves from Covid-19 infection. The nurses described the physical effects they experienced due to the use of personal protective equipment as follows.

"...The overalls I was wearing reduced my mobility, extended the duration of the nursing practices I did, made it difficult for me to do easy work and exhausted me. The goggles I was wearing got fogged up and narrowed my field of vision and distance. This has increased my potential for making mistakes (Nurse, 19)."

Nurses described the risks of being infected while removing PPE.

"Putting on and taking off PPE was like two sides of the coin. Before patient care to wear PPE prevents me from becoming infected and could save my life. After the maintenance, I could be infected and sick with a mistake I would make while removing it. So our lives depended on our attention in putting on and taking off PPE (Nurse, 10)."

Majority of nurses said that PPE caused health problems such as allergies, scars, wounds and redness on skin.

"Redness occurred where personal protective equipment came into contact with my skin. Mask, glasses and visor created redness and pressure sores on my skin (Nurse, 8)."

Words of the nurse who sweated a lot while working with PPE.

"When I was working in protective clothing, sweat was pouring out of my back like water... I didn't get Covid-19, but I had pneumonia (Nurse, 15)."

DISCUSSION

This study examined the effects of nurses who care for Covid-19 patients due to their experiences in intensive care with a qualitative descriptive approach. In this study, two main themes were identified: psychological and physical effects of nurses serving patients with Covid-19 in intensive care unit.

In this study, nurses experienced fear for different reasons. The reasons for their fear were that they encountered a disease for the first time, caregiving with close contact, death of young patients, being infected and infecting others. In different studies, the reasons for nurses to experience fear; being a new disease (Kim, 2018), unfavorable course of the disease, high morbidity and mortality (Neto et al., 2020), inexperience (Fan et al., 2020), caregiving with close contact, getting and transmitting (Kang et al., 2018), transmission to colleagues and deaths (Koh et al., 2012). These data are in agreement with our study data. This study showed that stress is experienced when the outcomes of care services are not clearly evaluated. In another study, fear of being infected, restrictions, inadequate personal protective equipment have been a source of stress in nurses (Arnetz et al., 2020). The main factors affecting the stress of nurses were their anxiety levels, weekly working hours, and having children (Lin & Zheng, 2021). During the Covid-19 pandemic, nurses had emotional empathy with their patients in intensive care enough to feel burnt out. This emotional empathy has been shown to be a crucial factor in psychological exhaustion over time (Correia & Almeida, 2020). Our study supports this data. In this study, young dying patients made young nurses feel death. In a different study, it was determined that the anxiety of the nurse who saw the death of his patient increased and they did not feel ready to communicate with the deceased patient's relatives (Galehdar et al., 2020). The findings suggest that health workers need actions to reduce their psychological impact and protect their mental health during and after the outbreak. In this study, the change in the working order to shorten the contact time increased the number of patients that nurses care for. Our current findings are similar to the problems experienced due to insufficient personnel as stated in the studies in the literature (Fernandez et al., 2020). It is important for nurses to work with acceptable shift duration and frequency for the continuity of patient care quality, and these should be paid attention to in the fight against the epidemic (Liu et al., 2020). Workforce safety is a high priority in the fight against the epidemic. In this study, it was mentioned that the duration of patient care with PPE is prolonged, nursing interventions became difficult and caused fatigue. Similarly, it has been determined that the use of PPE leads to various difficulties such as prolonging the duration of care, delaying nursing procedures, and making communication difficult (Sun et al., 2020). Various studies have mentioned a lack of personal protective equipment (Moradi et al., 2021; Sun et al., 2020). In this study, nurses evaluated PPE as a source of risk that should be considered in order not to become infected during wearing and removing. Similarly, it has been found that removing the PPE increased the risk of infection. In addition, it has been determined that the

inappropriate size, design and use, quality and effectiveness of PPE contribute to this risk (Fan et al., 2020). These findings highlight the importance of equipment that is ergonomic, adequate, and marked to remind the put-on-off sequence. In this study, it was observed that Personal Protective equipment caused skin lesions such as allergies, scars, wounds, redness, and health problems such as sweating, pneumonia, and fluid loss. Similarly, Moradi et al. (2020) their study, showed that the physical weight of the personal protective equipment and the inability to change it, caused difficulties in eating, drinking and sink needs, and led to complications such as constipation, dehydration, urinary tract (Moradi et al., 2021). The present study involves certain limitations that must be considered. This study was conducted only with nurses working in one hospital's intensive care unit; therefore, the results cannot be generalized.

CONCLUSIONS

This study focuses on the impacts that intensive care nurses face based on their experiences during the Covid-19 pandemic. The findings of this study showed that intensive care nurses faced many physical and psychological effects. Health managers should be given financial support to establish a safe working environment and provide psychological support in order to minimize the physical and psychological effects for intensive care nurses, as well as increasing the number of nurses. Reducing nurses' anxiety and stress by informing them about the pandemic and patient care is important for them to provide quality care. In order not to decrease the quality of care provided by nurses during the pandemic, a cooperation triangle consisting of individuals, healthcare professionals and the government should be formed to ensure that health services are not interrupted through educating the public and raising public awareness.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Author Contributions

Plan, design: EU; **Material, methods and data collection:** EU, MOA, AÖ; **Data analysis and comments:** EU, MOA, AÖ; **Writing and corrections:** EU, MOA, AÖ.

REFERENCES

- Arnetz, J. E., Goetz, C. M., Arnetz, B. B., & Arble, E. (2020). Nurse reports of stressful situations during the Covid-19 pandemic: qualitative analysis of survey responses. *International Journal of Environmental Research and Public Health*, 17(21), 8126.

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2): 77-101.
- Cadge, W., Lewis, M., Bandini, J., Shostak, S., Donahue, V., Trachtenberg, S., et al. (2021). Intensive care unit nurses living through COVID-19: A qualitative study. *Journal of Nursing Management*. Advance online publication. <https://doi.org/10.1111/jonm.13353>
- Chen, Q., Liang, M., Yamin, L., Jincai, G., Dongxue, F., Ling, W., et al. (2020). Correspondence Mental health care for medical staff in China during the Covid-19. *The Lancet Psychiatry*, 7(4), 19–20. [https://doi.org/10.1016/S2215-0366\(20\)30078-X](https://doi.org/10.1016/S2215-0366(20)30078-X)
- Correia, I., & Almeida, A. E. (2020). Organizational justice, professional identification, empathy, and meaningful work during Covid-19 pandemic: Are they burnout protectors in physicians and nurses? *Frontiers in Psychology*, 11, 3545.
- Fan, J., Hu, K., Li, X., Jiang, Y., Zhou, X., Gou, X., & Li, X. (2020). A qualitative study of the vocational and psychological perceptions and issues of transdisciplinary nurses during the Covid-19 outbreak. *Aging (Albany NY)*, 12(13), 12479.
- Fernandez, R., Lord, H., Halcomb, E., Moxham, L., Middleton, R., Alananzeh, I., et al. (2020). Implications for Covid-19 : a systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *International Journal of Nursing Studies*, 111, 103637.
- Galehdar, N., Kamran, A., Toulabi, T., & Heydari, H. (2020). Exploring nurses' experiences of psychological distress during care of patients with Covid-19: A qualitative study. *BMC Psychiatry*, 20(1), 1-9.
- Halacli, B., Kaya, A., & Iskit, A. T. (2020). Critically ill Covid-19 patient. *Turkish Journal of Medical Sciences*, 50(SI-1), 585-591.
- Holloway, I., & Galvin, K. (2016). *Qualitative research in nursing and healthcare*. John Wiley & Sons.
- Kang, H. S., Son, Y. D., Chae, S. M., & Corte, C. (2018). Working experiences of nurses during the Middle East respiratory syndrome outbreak. *International Journal of Nursing Practice*, 24(5), e12664. <https://doi.org/10.1111/ijn.12664>
- Kim, Y. (2018). Nurses' experiences of care for patients with Middle East respiratory syndrome-coronavirus in South Korea. *American Journal of Infection Control*, 46(7): 781-787.
- Koh, Y., Hegney, D., & Drury, V. (2012). Nurses' perceptions of risk from emerging respiratory infectious diseases: A Singapore study. *International Journal of Nursing Practice*, 18(2), 195–204.
- Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., et al. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, 3(3), e203976-e203976.
- Lee, S. M., Kang, W. S., Cho, A.-R., Kim, T., & Park, J. K. (2018). Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Comprehensive Psychiatry*, 87, 123–127.
- Lin, Q., & Zheng, Y. (2021). Nurses' Emotional Stress Levels When Caring for Covid-19 Patients in an Intensive Care Unit. *Alternative Therapies in Health and Medicine*, AT6442. Advance online publication.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications, Inc.
- Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., et al. (2020). The experiences of health-care providers during the Covid-19 crisis in China: a qualitative study. *The Lancet Global Health*, 8(6), e790-e798.
- Moradi, Y., Baghaei, R., Hosseingholipour, K., & Mollazadeh, F. (2021). Challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients: A qualitative study. *Journal of Nursing Management*, doi.org/10.1111/jonm.13254
- Muz, G., & Erdoğan Yüce, G. (2021). Experiences of nurses caring for patients with COVID-19 in Turkey: A phenomenological enquiry. *Journal of Nursing Management*. Advance online publication. doi.org/10.1111/jonm.13240
- Neto, M. L. R., Almeida, H. G., Esmeraldo, J. D. A., Nobre, C. B., Pinheiro, W. R., de Oliveira, C. R. T., et al. (2020). When health professionals look death in the eye: the mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Research*, 288, 112972.
- Polit, D. F., & Beck, C. T. (2009). *Essentials of nursing research: Appraising evidence for nursing practice*. Lippincott Williams & Wilkins.
- Singhal T (2020). A review of coronavirus disease-2019 (Covid-19). *The Indian Journal of Pediatrics*, 87(4): 281-286. <https://doi.org/10.1007/s12098-020-03263-6>
- Sun, N., Wei, L., Shi, S., Jiao, D., Song, R., Ma, L., et al. (2020). A qualitative study on the psychological experience of caregivers of Covid-19 patients. *American Journal of Infection Control*, 48(6), 592–598. <https://doi.org/10.1016/j.ajic.2020.03.018>
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349-357.
- World Health Organization (2020). WHO Coronavirus dashboard. www.who.maps.arcgis.com/apps/opsdashboar/index.html#/a19d5d1f86ee4d99b013eed5f637232d. Accessed September 3, 2021.
- Worldmeters (2020). Covid-19 coronavirus outbreak. Retrieved from <https://www.worldometers.info/coronavirus>. Accessed 19 September 2021