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Experiences of critical care nurses fighting against COVID-19: A qualitative phenomenological study

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Abstract

Aim: This study sought to describe the experiences of critical care nurses caring for patients infected by coronavirus disease 2019 (COVID-19).

Design: A qualitative phenomenological design was used.

Methods: We enrolled 15 nurses who provided care for patients infected by COVID-19 purposively and through snowballing, using a phenomenological approach in critical care units of Iran's public hospitals between May and June 2020. The semi-structured interviews were carried out either via face-to-face or telephone and were analyzed using the 7-step method of Colaizzi.

Results: The experiences of nurses caring for patients infected with COVID-19 were categorized into four challenges, including psychological (eight subthemes), organizational (six subthemes), social (six subthemes), and professional (five subthemes). In general, based on the current classification, there seems to be a mixture of positive and negative effects on the psychological, social, and professional challenges and the negative effect only on the organizational challenges.

Conclusions: Positive and negative emotions and experiences have coexisted for the critical care nurses since the COVID-19 outbreak. Emotional support and psychological counseling play an important role in maintaining nurses' optimal mental health during the COVID-19 crisis. Adequate protective equipment, financial and nonfinancial supports, effective communication, training and hiring of staff, and appropriate work shifts are also required to reduce nurses' negative experiences when providing care for the affected individuals.

KEYWORDS
challenges, COVID-19, critical care, experience, nurse, qualitative study

1 | INTRODUCTION

The coronavirus disease 2019 (COVID-19) epidemic, causing severe acute respiratory syndrome -coronavirus 2 (SARS-CoV-2), originated in Wuhan, China at the end of December 2019. Since then, the virus has been spreading to the whole nation of Iran and has become a major global concern.[1,2] It was named 2019-nCoV before being designated by the International Committee on Viral Classification on February 12, 2020. SARS-CoV-2 primarily induces its effects on the respiratory and digestive tracts.[3] Its symptoms include mild self-limited disease to severe pneumonia, acute respiratory distress syndrome, septic shock, and even systemic multiple organ failure syndromes.[4,5]

Following the meeting held by the World Health Organization (WHO) on January 30, 2020, the global outbreak of COVID-19 was declared as a public health emergency and of universal significance.[6]

On the 19th of February, in the city of Qom, 150 km south of Tehran's capital city, Iran announced two cases of death attributed to COVID-19.[7] This was the first officially diagnosed death report in the Middle East, West Asia, and North Africa for COVID-19.[8] Despite the disease's detection in a few weeks, there were inadequate efforts to control the pandemic. In Iran, the spreading of the virus was fast, and all 31 provinces were affected by March 5, 2020.

The combination of the COVID-19 outbreak and its consequences in Iran with the greatest new sanctions put on Iran by the United States has created a range of hurdles to the country's health sector.[9] This has contributed to a rise in the disease burden and the fatality rate.[9] According to statistics released by the Ministry of Health and Medical Education in Iran, the definite sum total cases in Iran had hit 526,490 by October 18, 2020,[10] while globally, there have been 39,442,444 cases were confirmed of COVID-19, including 1,106,181 deaths reported to WHO.[11]

Encountered with this difficult situation, healthcare professionals actively involved in the diagnosis and care of COVID-19 patients are at risk of experiencing psychological challenges and other signs of mental health issues. The ever-increasing number of confirmed and suspected cases, the immense workload, the shortage of personal protective devices, the broad media coverage, the lack of appropriate medications, and the sense of insufficient assistance could all add to the psychological pain of healthcare professionals.[12–14] The shortage of critical care nurses with qualifications and expertise is more critical than everything else in this crisis.[15]

Critical care patients undergo mechanical ventilation. Many of them will require specialized life support, like extracorporeal membrane oxygenation, constant renal replacement therapy, and prone ventilation.[16] Critical nurses face a great deal of workload, long-term exhaustion, the threat of infection, and concern with the mortality of the patients they care for. They also have to deal with anxiety and even misunderstanding among patients and their families. Complications are far more prevalent in the critical care units than in conventional care units due to the vital and urgent nature of the support for organs needed.[17]

Disorders in physical and mental health affect the performance of nurses in providing services. Numerous studies have shown that the prevalence of psychological disorders such as stress, depression, and anxiety in these employees is high, In many cases, performance issues are associated with risk factors in the workplace such as pain, suffering, and death of patients, the conflict between co-workers, hard work, sensitive working conditions, and other factors related to the physical environment such as working with devices and materials.[18–20] Nurses seem to be at risk of contracting illnesses that patients have, as nurses are charged with the treatment of the patients. Sometimes, diseases, such as COVID-19, can be contracted by even the healthiest of nurses.

By strengthening themselves with correct nutrition, staying up to date with vaccines, and remaining physically healthy, it is essential for nurses to take care of them.[21] Overall, 64% of Iranian critical care nurses were thinking of leaving their job in the latest Iranian study; 81% stated the quality of working life was poor, and 82% of nurses reported their job to be extremely stressful.[22] Other studies have also shown that burnout and turnover in nurses have a significant relationship with factors such as stroke and stress.[23,24] The result of these events can be a reduction in the quality of service and patient dissatisfaction. Therefore, nurses must study this issue and provide continuous training when in intense crisis situations.

The literature indicated that nurses suffered from some of the most harmful psychological disorders, such as anxiety, fear, and labeling stress at the time of the spread of SARS and Ebola.[25] These, in turn, seriously affected the quality of their activities and services.[26] A cross-sectional study among medical personnel in China during the release of COVID-19 from February 10 to February 20, 2020, showed that about 164 (32.03%) out of 512 personnel had direct contact with the patient, and they were infected with COVID-19. Meanwhile, the prevalence of anxiety was about 12.5%.[1] Another study of clinicians, including doctors and nurses in Wuhan, China, during the onset of COVID-19 indicated that medical care workers experience high levels of symptoms of depression, anxiety, insomnia, and pain.[12]

Recent studies have highlighted the diagnosis, clinical characteristics and treatment,[3] and the disease prevalence.[27] Other studies have discussed the seriousness of psychological issues on medical personnel[28,29] and the importance of providing psychological help for them.[30] Few studies have been conducted regarding the experiences of critical care nurses caring for individuals infected by COVID-19 in Iran. In view of the above, our study explored the experiences of critical care nurses involved in caring for patients infected by COVID-19 through semi-structured face-to-face interviews. This study aimed to understand the core of the experience of challenges concerning nurses involved in caring for patients infected by COVID-19 in Iran. The study involved listening to descriptions of psychological, organizational, professional and social experiences, and analyzing cases, with the goal of providing information to develop ways to reduce the negative experiences of nurses in clinical practice. The following research question was explored: "What do nurses experience while caring for patients infected by COVID-19?"

2 | METHODS

2.1 | Design

A qualitative phenomenological study was conducted to explore the experiences nurses confronted in caring for patients infected by COVID-19 in critical care units of Iranian public hospitals that were designated for treatment and care patients with COVID-19. This approach focuses on the description of common experiences shared across a population. The current study was conducted and reported according to the Consolidated Criteria for Reporting Qualitative Research (COREQ) to guarantee the rigorous conduct and reporting

of crucial facets of the study, along with the research team, methodology, study background, results, analysis, and explanation.[31]

2.2 | Participants and recruitment

Participants were recruited for the study through the purposive and snowball sampling procedure. The inclusion criteria were (1) nurses who provided direct care for patients infected with COVID-19 at critical care units and (2) working for at least 1 month at the critical care units during the pandemic. The sample size was determined by data saturation, that is, at the point where no new topics from interviewees' experiences were generated. After 15 interviews, saturation was achieved, and data saturation was confirmed.

The selection process was developed through maximum variation sampling in terms of characteristics such as age, gender, work experience, educational status, and city. Finally, we interviewed 15 nurses from seven cities of Iran. Eight individuals already known to the interviewers and others were approached via snowball sampling.

2.3 | Ethical considerations

The Ethics Committee of Qazvin University of Medical Sciences reviewed, approved, appraised, and sanctioned the study protocol (ethics code: IR.QUMS.REC.1399.205) based on the fact that all interviews were to be recorded and transcribed on tape and that participants were allowed without discrimination to withdraw at any time. The interviewer (ZCH) clarified the study aims and noncompulsory nature of the study to the participants in advance and went through the informed consent form with the participants after they read it and asked if they had any questions. They were asked to sign the consent document and then given a copy once they were satisfied that all of their questions had been addressed. The consent form was signed electronically by phone interviewees. The authors ensured that all participants' information was handled with utmost anonymity and confidentiality through applying numbers as an alternative to names (i.e., P1, P2, etc.).

2.4 | Data collection

Data were collected via semi-structured, in-depth telephone and face-to-face interviews between May and June 2020. Seven participants preferred the face-to-face interview, while eight of them preferred the telephone interview. The face-to-face interviews were organized and handled in an isolated, quiet room without interruptions. The interviews were conducted in Persian by one of the authors. With participants' permission, the interviews were tape-recorded. The length of interviews ranged between 30 and 90 min, with an average of 50 min. The interview guide was designed based on relevant literature and experts' opinions.[32,33] Also, the authors

obtained information about participants' age, marital status, work experience, and type of units at the outset of the interview.

2.5 | Instrumentation

Data were gathered with open-ended questions. The researchers designed the interview guide in line with the existing literature.[32–34] The interview guide included the main question stating that: "Please, tell me about your experiences while taking care of patients infected with COVID-19". In addition to this, we asked the following open-ended follow-up questions to obtain further detailed experiences: (1)"How do you distinguish providing care concerning the epidemic and your regular job in the original department?"; (2)"How did you feel on the first day?"; (3)"What challenges did you encounter?"; (4) "How did you respond?"; (5) "What external support have you received so far?," and (6) and "What other types of supports do you think are necessary?". Probing questions like "Please tell me all about that," was used to deepen the discussion. Pilot interviews with two people were conducted before the start of the study interviews. The interview procedure and questions were updated in accordance with these pilot interviews.

Data gathering was carried out concurrently with the analysis of data. The audio recordings achieved from the interviews were immediately transcribed verbatim by one of the authors and reviewed by the other author for accuracy. The interviews, initial transcripts, and interpretation of the results were in Persian. The third author translated all quotes into English, and the first author back-translated to ensure context was preserved. The results were approved by all authors, and the highlighted quotations were selected.

2.6 | Data analysis

Data analysis was performed simultaneously with the interviews. The audio recordings achieved from the interviews were immediately transcribed verbatim by one of the authors and reviewed by the other author for accuracy. The interviews, initial transcripts, and interpretation of the results were in Persian. Third author translated all quotes into English, and the first author back-translated to ensure context was preserved. The results were approved by all authors, and the highlighted quotations were selected. Data were analyzed through Colaizzi's phenomenological analysis method including familiarization, identifying significant statements, formulating meanings, clustering themes, developing an exhaustive description, producing the fundamental structure, and seeking verification of the fundamental structure.[35] The analysis and coding of the data were achieved using MAXQDA 10 data qualitative analysis software.

In this study, strategies such as trustworthiness, credibility, transferability, dependability, and conformability of data were duly considered.[36] Credibility was achieved via in-depth interviews followed by checking and approving of the extracted codes. All authors independently analyzed the transcripts. The findings were then contrasted and

conversed until consensus on themes, subthemes, and codes were achieved. Transferability was accomplished by considering differences in the interviewees' characteristics and adequate quotes acquired through in-depth interviews. Dependability and conformability of the results were also ensured through reporting and recording of the study steps and processes.

3 | RESULTS

Nine male and six female nurses in ages 28–50 years with an average age of 39.53 ± 6.89 enrolled in this study. The work experience ranged from 2 to 35 years with an average of 17.69 ± 8.8. More information about the characteristics of the participants is specified in Table 1.

Finally, the experiences of critical care nurses caring for patients infected with COVID-19 in Iranian hospitals were categorized into four main themes, including psychological (eight subthemes), organizational (six subthemes), social (six subthemes), and professional (five subthemes). See Figure 1 for details regarding the subthemes and subthemes.

In general, based on the current classification, there seems to be a mixture of positive and negative experiences in the psychological and social challenges, and negative effects in the organizational and professional challenges. In general, the participants had more points about themselves and their organization. For this reason, most of the comments in these two dimensions have a negative aspect. Still, in psychological and social dimensions, because it has been indirectly related to the participants, the comments are mostly in the positive aspects and a little in the negative aspects.

Participants with more work experience, older age, females, and married staff tended to point out more positive aspects of the disease and make more hopeful statements, while younger, less

TABLE 1 Participants' characteristics (N = 15)

ID	Age (years)	Gender	Marital status	Work experience (years)	Workplace unit
P1	43	Female	Married	18	ICU
P2	37	Female	Married	15	CCU
P3	36	Female	Married	14	ICU
P4	35	Female	Married	10	CCU
P5	40	Male	Married	18	ICU
P6	40	Female	Married	20	ICU
P7	47	Female	Married	22	ICU
P8	48	Female	Single	26	CCU
P9	47	Female	Married	23	ICU
P10	31	Female	Single	6	ICU
P11	33	Male	Single	7	CCU
P12	50	Male	Married	25	ICU
P13	28	Male	Single	2	CCU
P14	45	Male	Single	20	ICU
P15	33	Male	Married	5	ICU

Abbreviations: CCU, critical care unit; ICU, intensive care unit.

experienced males and single staff expressed more concerns and paid more attention to the negative points.

3.1 | Theme 1: Psychological challenges

All participants had reported at least one type of psychological challenge or another. Most of them reported positive and negative
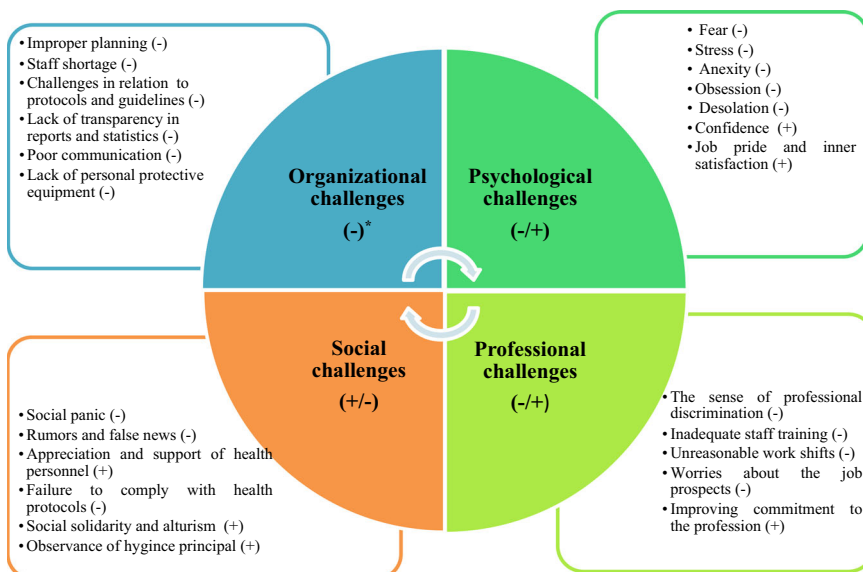

FIGURE 1 The experiences of critical care nurses caring for patients infected with coronavirus disease 2019 in Iranian hospitals * (−) implies negative experiences and (+) implies positive experiences of participants [Color figure can be viewed at wileyonlinelibrary.com]

Organizational challenges (-)*
• Improper planning (-)
• Staff shortage (-)
• Challenges in relation to protocols and guidelines (-)
• Lack of transparency in reports and statistics (-)
• Poor communication (-)
• Lack of personal protective equipment (-)

Psychological challenges (-/+)
• Fear (-)
• Stress (-)
• Anexity (-)
• Obsession (-)
• Desolation (-)
• Confidence (+)
• Job pride and inner satisfaction (+)

Social challenges (+/-)
• Social panic (-)
• Rumors and false news (-)
• Appreciation and support of health personnel (+)
• Failure to comply with health protocols (-)
• Social solidarity and alturism (+)
• Observance of hygince principal (+)

Professional challenges (-/+)
• The sense of professional discrimination (-)
• Inadequate staff training (-)
• Unreasonable work shifts (-)
• Worries about the job prospects (-)
• Improving commitment to the profession (+)

psychological challenges (positive experiences: confidence, a feeling of job pride, and inner satisfaction and negative experiences: fear, stress, anxiety, obsession, and desolation). They expressed a level of difficulty in their daily lives due to psychological challenges.

Negative quotes:

- "At the time of the outbreak and while caring for our patients, our greatest concern was the stress of getting infected by the virus." –P1
- "In the early days, we were really obsessed with using detergents and disinfecting surfaces." –P9
- "My concern was to spread the infection to the children and where to stay if I got infected. Where should the children stay and who should take care of them?" –P12

Positive quotes:

- "My brother posted a photo of me on his Instagram page, and this sense of pride encouraged me." –P8
- "I was inspired by the fact that my family was proud of me." –P6

3.2 | Theme 2: Organizational challenges

Many participants reported challenges regarding their organization, especially those affecting the hospitals. Improper planning, staff shortage, challenges in relation to protocols and guidelines, lack of transparency in data and statistics about the disease, poor communication, and lack of personal protective equipment were also mentioned as organizational challenges by participants.

- "There was no mask in the early days of the disease. We saw that disinfectant solutions were not in the ward and could not be found. The supply of gloves was reduced. Equipment was scarce." –P2
- "The existing protocols were not well observed, and on the other hand, new protocols were issued every day, which sometimes contradicted the previous ones and made us doubt." –P10
- "In the early days, we tackled the shortage of manpower in many wards of hospitals providing services to COVID-19 patients. Some employees were scared, and they disappeared. Staff shifts were longer than before, and the workload was very high." –P15

3.3 | Theme 3: Social challenges

Challenges concerning the social domain were varied and ranged in positive and negative points. Participants also commented that these views include positive experiences such as increasing social solidarity and altruism, attention, appreciation, and observance of hygiene principles, and negative experiences such as

increasing social panic; growing rumors and false news; and failing to comply with health protocols.

Positive quotes:

- "People in the community thanked us, and their good prayers were encouraging and inspiring." –P3
- "Shortly after the onset of the disease, people's solidarity and public assistance increased. Feelings of altruism had increased among members of the community." –P6
- "Over time, healthcare professionals were highly praised. In the first days, we were under a lot of pressure, but little by little, we were supported by the people and the government, and the healthcare professionals were introduced as heroes in the society, and this motivated us." –P11

Negative quotes:
- "Early in the onset of the disease, there were many rumors, and one of our most important tasks when serving was to counter these rumors and provide appropriate evidence for patients." –P15
- "Fear was evident on the faces of the patients and their families. There were rumors that any patient who was hospitalized would definitely die." –P7

3.4 | Theme 4: Professional challenges

Participants reported advanced issues regarding their professional conditions. Despite all the supports, in some cases, discrimination against personnel was reported by the participants, such as inadequate salaries and benefits, leave, and type of contracts. Some participants felt that the training was not enough. Many other participants were worried about the future of their job. They also stated that their work shifts were inappropriate.

- "The working shift program is not suitable at all... I work for more than 72 hours and cannot sleep for 2 hours yet." –P11

Facing the worst highly unpredictable risky situations, one was possibly able to provide different excuses for absenteeism. However, participants felt that their commitment to the profession has improved since the COVID-19 outbreak.
- "I never intended to leave my job; instead I tried harder." –P11
- "I never thought about taking a leave of absence from work." –P6
- "The letter of cancellation of the leave came, and the state of readiness was announced. We did not cancel the contract in the public hospitals, and many contracts were even extended. However, this happened in private hospitals, and I heard that many intensive care unit personnel canceled contracts." –P5
- "There was no financial, equipment, or psychological support, and they even gave us a few extra shifts. For some staff, the corona fee (the fee paid to employees/staff working in the corona wards) has not yet been paid, and the payment figures have varied." –P14

4 | DISCUSSION

This study investigated the experiences of nurses working in critical care units in the period of COVID-19 epidemic applying a phenomenological approach. We provided the findings into four challenges: psychological, organizational, social, and professional.

The nurses caring for patients infected with COVID-19 experienced severe stress, fear, anxiety, obsession, and desolation, which was in line with the findings of other studies in different countries such as China[32,33] and Turkey.[34] A cross-sectional study in Wuhan, China revealed the nurses experienced several mental health challenges such as work burnout, anxiety, depression, and fear.[37] In this study, participants' concerns about family members were in line with the studies of Liu et al.[32] and Sun et al.,[33] particularly those concerned with vulnerable elders and youngsters in the family. The results of a study in Iran demonstrated that nurses involved with the care units and centers specified for patients with COVID-19 endure anxiety, stress, and fear.[38] A great deal of negative emotions such as hopelessness,[39] anxiety and depression symptom,[40] sleep difficulties or insomnia,[39] and work stress[41] have been reported by several studies as the direct outcome of the terrorizing epidemic COVID-19.

Rapid changes in the condition of the critically ill patients infected with COVID-19 patients with COVID-19, complications of multiple organ failure, no approved drugs or treatment may be the main cause of the negative psychological impact of COVID-19. On the other hand, COVID-19 patients need emotional support more than other patients, especially from the nursing staff. Therefore, comprehensive evaluation and monitoring of patients to prevent multiple potential complications, immediate diagnosis and reaction to worsening clinical condition, effective communication with healthcare professionals, and emotional support of patients are the main tasks of nurses during the outbreak of COVID-19.

Therefore, the psychological status of nurses in the hospital during the COVID-19 outbreak needs more attention and psychological intervention. Nurses with stress and anxiety about COVID-19 should get psychological counseling. Thus, a psychologist's help and support in different wards of the hospital can reduce the stress and worries of nurses.

This study found that critical care nurses have experienced organizational challenges such as improper planning, lack of personal protective equipment, staff shortage, challenges concerning protocols and guidelines, lack of transparency in reports and statistics, and poor communication. Similar findings have been reported in a study conducted in Iran,[38] which showed that nurses had experienced contextual shortcomings, including lack of supportive equipment, personal protection equipment, facilities, trained personnel along with ill-suited plans, and conventions, and environmental conditions. In addition, similar challenges, including lack of a single treatment protocol, long shifts, lack of training for nurses, have been reported in a conducted study by Sharififar et al.[42] in Iran. Findings of Liu et al.[32] in China showed that healthcare providers in the period of the COVID-19 outbreak experienced insufficient personal protective equipment, unreasonable work schedules, excessive workload, and weak communication.

Along with the negative psychological impact of COVID-19, there are other positive emotions like confidence, feeling of inner satisfaction and job pride, mental rewards, and commitment to the profession was reported by the participants, which are consistent with the findings of studies in other countries. For example, Sun et al.[33] showed that positive emotions such as self-confidence, calmness, and happiness appear simultaneously with negative emotions. While the findings of the present study are in contrast with the results of two other studies,[28,30] there were only negative emotions such as stress during the outbreak. Similar to the results of the present study, Sadati et al.[43] identified sacrificial commitment as one of the main themes among Iranian nurses during the COVID-19 outbreak. It is worth pointing out that nurses' actions in Iran tend to go beyond professional commitment, as a fundamental responsibility focused on the norms of the social system to which they are intentionally or unintentionally committed. Many of these social values lie in Iran's religious morals, which provide a linkage between humanitarian concepts and religious ethics and are strengthened during social crises.

One of the positive experiences mentioned by most participants was support systems from family, colleagues, and the community. Variety of supports given by hospital, colleagues, family, friends, and the community for health care providers were identified in the study conducted by Liu et al.[32] According to Sun et al.'s[33] study in China, the multidimensional support provided by the government, social networks, team members, family members, and patients was attributed to positive emotions.

Physical and mental rewards given by nurses and caregivers are also among significant factors concerning support issues.[44] It has been indicated that positive emotions make a major contribution to improving and adjusting psychological traumas.[45] A cross-sectional study in China found that the front-line nurses' burnout, anxiety, depression, and fear were negatively correlated with social support.[4] A systematic review study has been revealed insufficient social support was one of the risk factors for developing negative psychological consequences among healthcare professionals, and providers in all sorts of disasters.[46] Therefore, social support for nurses is vital during epidemics.[28] Taking psychological intervention for nurses and other healthcare professionals in an epidemic, such as strengthening multidimensional social support, guiding positive coping styles, and stimulating positive emotions, is required to promote the psychological health of providers.

4.1 | Limitations

This study reviews the experiences of critical care nurses as care providers to patients with COVID-19 in Iran. Using a diverse sample from all over the country was the strength of the study; however, a few limitations must be highlighted. First, in a qualitative study with a limited sample size, only nurses' experiences were examined, so the

experiences of other hospital staff and managers need to be further explored. It seems that reviewing the long-term experiences of the subjects may provide valuable findings.

5 | CONCLUSIONS

The present study sought to explore thoroughly and extensively, using a phenomenological approach, the experiences of critical care nurses during the COVID-19 epidemic. Findings of the present study show that during the COVID-19 epidemic, positive, and negative emotions were experienced due to psychological, organizational, social, and professional challenges. Hospital managers should institute strategies and interventions to reduce the psychological problems of critical care nurses. Healthcare personnel needs emotional and psychological support and professional psychological counseling, but they should also be continuously monitored. Adequate protective equipment, financial and nonfinancial supports, effective communication, training and hiring of more staff, and appropriate work shifts are also essential to reduce staff's negative experiences providing care to COVID-19 infected patients.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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