

Challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients: A qualitative study

Yaser Moradi PhD, Assistant Professor  | Rahim Baghaei PhD, Associate Professor |
Keyvan Hosseingholipour MSc, Lecturer | Farzin Mollazadeh MSc, Lecturer

Patient Safety Research Center, Clinical Research Institute, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran

Correspondence

Farzin Mollazadeh, Patient Safety Research Center, Clinical Research Institute, School of Nursing and Midwifery, Urmia University of Medical Sciences, Urmia, Iran.
Email: mollazadeh.f@umsu.ac.ir, farzin.nurse@gmail.com

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Abstract

Aim: To explore the challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients.

Background: The intensive care unit nurses, who are at the frontline of fighting against COVID-19 and defusing this crisis, are faced with various challenges throughout the provision of care for COVID-19 patients.

Methods: In this qualitative descriptive study, a total of 17 nurses working in intensive care units were selected using purposive sampling. Data were collected using semi-structured face-to-face interviews. After recording and transcribing interviews, the concepts were extracted using the content analysis method.

Findings: The nurses reported the four following challenges throughout the provision of care for COVID-19 patients: 'organization's inefficiency in supporting nurses', 'physical exhaustion', 'living with uncertainty' and 'psychological burden of the disease'.

Conclusion: The present study portrayed a clear understanding of the challenges faced by nurses working in intensive care units during the crisis of the COVID-19 pandemic based on their lived experiences.

Implications for Nursing Management: A profound understanding of these challenges in the current critical situation can help health care authorities adopt appropriate measures to resolve these challenges, provide health care facilities, support the health workforce, give accurate and evidence-based information and perform psychological interventions on how to handle the current crisis.

KEYWORDS

COVID-19, intensive care unit, nurse, qualitative study

1 | BACKGROUND

The COVID-19 epidemic is rapidly increasing throughout the world, with 216 countries affected until 9 September 2020. On 11 March 2020, the World Health Organization officially declared that the prevalence of COVID-19 has reached a global pandemic phase (WHO, 2020).

The novel coronavirus is a mysterious virus with an unknown nature, variable symptoms and complications. Some affected

individuals present no symptoms or only mild symptoms, while others suffer serious complications such as pneumonia, respiratory distress, hypoxaemia and even death (Chen, Hu, et al., 2020; Ji et al., 2020). According to the Worldometer's COVID-19 data, 1% of all patients with active COVID-19 (60,785) are in critical condition and need intensive care (Worldometers, 2020).

According to a report by the International Council of Nurses, during the first wave of the response to COVID-19 pandemic, the focus of health care systems was rather on increasing the capacity and potential

of intensive care units (ICUs), which led to increased working hours of intensive care providers and the use of different rotating-shift patterns (ICN, 2020). In addition, in similar crises such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), health care providers, especially nurses, were exposed to severe and debilitating stresses, whose sources included fear of infection, stigma, lack of human workforce and lack of trust (Lee et al., 2018; Maunder et al., 2003). By investigating health care providers who had working experience during the MERS epidemic in 2015, Lee et al. found that these individuals exhibited post-traumatic stress disorder during the epidemic and even over time (Lee et al., 2018). Similarly, this problem was also observed in the SARS epidemic in 2003, as health care providers were badly stressed by the unknown nature of the disease, its high contagiousness and their heavy workload (Maunder et al., 2003).

ICU nurses at the centre and frontline of defusing the crisis of the COVID-19 pandemic (Chen, Liang, et al., 2020) have a major role in the affected countries. The health status of health care workers can affect the provision of continuous and comprehensive patient care and have a significant effect on how to deal with public health crises and pandemics (Chang et al., 2020).

A variety of challenges impose severe psychological and physical strains on nurses throughout the provision of care for patients with COVID-19 in ICU (Park & Park, 2020; See et al., 2018).

In Italy, nurses experienced a particular and yet irritating situation because of their inability to save patients and the likelihood of transmitting the disease to their family members, which could have affected patient care (Kaniadakis, 2020). Furthermore, nurses are at a greater risk of developing psychological problems such as anxiety, depression, insomnia and stress (Liu et al., 2020). They may also face a variety of challenges due to being in a stressful situation that they have never experienced before (Liu et al., 2019).

In a study by Sun et al., nurses caring for COVID-19 patients reported different psychological problems, including fatigue, discomfort and helplessness due to the heavy workload during the shifts (Sun et al., 2020). Despite the lack of studies examining the challenges faced by ICU nurses throughout the provision of care for COVID-19 patients based on their experiences, Shen et al. revealed that ICU nurses have to face several difficulties including working in an unfamiliar environment, lack of experience in caring for infectious patients, anxiety about being infected, heavy workload, extreme exhaustion and depression due to failure to treat critically ill patients (Shen et al., 2020). In a systematic review, Fernandez et al. reviewed the results of 13 qualitative studies on nurses' experiences during the COVID-19 pandemic and concluded that health care systems should respond appropriately to the challenges and perceived issues of the caregivers of COVID-19 patients. Otherwise, nurses are likely to experience significant physical and psychological problems, which can lead to burnout and shortage of the nursing workforce (Fernandez et al., 2020).

Therefore, efforts to meet these challenges appear necessary. However, before that, further studies are required to provide insight into these challenges and thus facilitate changes in the existing situation to improve nurses' working conditions, provide safe and quality care for patients and ultimately ensure patient safety. Given that

little information is available regarding the challenges faced by ICU nurses throughout the provision of care for COVID-19 patients, it is therefore important to conduct a study to understand the existing challenges based on the nurses' lived experiences. A profound understanding of these challenges in the current critical situation can help health care authorities adopt appropriate measures to overcome the limitations, meet the challenges faced by nurses and provide quality and safe patient care, so that essential actions can be taken to reduce both the length of hospital stay for critically ill patients and the mortality rate caused by COVID-19. Accordingly, the present qualitative study was conducted to explore and describe the challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients.

2 | METHODS

2.1 | Design

In the present study, a qualitative descriptive approach was used to explore the challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients.

This approach was selected because it provides first-hand facts associated with a phenomenon such as understanding knowledge and insight of health care professionals regarding a less understood event or phenomenon (Turale, 2020). Sandelowski considers this approach as the preferred choice for researchers who wish to provide a direct description of a phenomenon or an event (Sandelowski, 2010).

2.2 | Sample and recruitment

A total of 17 rotating-shift nurses working in medical ICUs of a coronavirus (COVID-19) centre, Urmia, Iran, were recruited using purposive sampling. The centre has three ICUs with 27 beds and equal occupancy rates, in which a number of 50 nurses were working. Since the coronavirus outbreak, all of the centre's beds have been dedicated to COVID-19 patients.

The inclusion criteria consisted of the following: ICU nurses with at least one year of critical care experience, having experience of caring for COVID-19 patients, having no history of COVID-19 and willingness to participate in the study and share their experiences.

2.3 | Data collection and procedures

Data were collected using semi-structured face-to-face interviews by a researcher and faculty member of the School of Nursing and Midwifery (YM). Participants were asked to describe their experiences concerning the main question of the study: *'What were the challenges you experienced as an ICU nurse in caring for COVID-19 patients?'*

Then, the interviewer continued the interview to examine their deeper experiences by asking more exploratory questions such as:

'What do you mean?', 'Please explain', 'Could you be more explicit?', 'Why?' and 'How?'

All interviews were conducted by observing the principles of personal protection and coordination with participants in classrooms available in clinical fields. The researcher tried to protect participants' privacy and give participants utmost comfort. With the participants' consent, the researcher recorded all conversations during the interviews. Each interview lasted for 30–45 min, and each participant was interviewed once. Interviews persisted until saturation of data.

It is noteworthy that data saturation occurred with 15 nurses, and two other interviews were conducted to guarantee the saturation.

2.4 | Ethical considerations

Prior to the beginning of the study and after obtaining approval of the Research Ethics Committee of Urmia University of Medical Sciences (Ethics No. IR.UMSU.REC.1399.021), the researcher introduced himself to the participants, explained the study objectives and methodology, obtained their written informed consent and assured them that the personal data would be regarded as strictly confidential.

2.5 | Data analysis

Data were analysed using content analysis based on Granheim & Lundman method (Graneheim & Lundman 2004). After each session, the recorded contents of interviews were carefully listened to several times, transcribed verbatim on paper and then typed in Microsoft Word®. Three of the authors classified and analysed data using MAX.Q DA-10 R250412. The semantic units were identified and encoded after careful review of the transcripts. At this stage, the initial codes were generated as explicit and implicit codes. Then, codes were merged and categorized according to similarities. Attempts were made to make the most homogeneity within categories and the most heterogeneity between categories.

2.6 | Trustworthiness

The trustworthiness of the qualitative results was assessed using credibility, confirmability, dependability and transferability (Speziale et al., 2011).

Credibility was achieved through ongoing engagement with the study subjects and data, prolonged engagement through frequent review of the interviews, corrective views of experts on the process of interviews, their data analysis, extraction of data, views expressed by some participants and those involved in a qualitative study on the interview texts and extracted codes and subcategories, and diversity of subjects by recruiting ICU nurses (as participants) from health centres providing care to COVID-19 patients.

Moreover, to ensure credibility and rigour of translated quotations, two bilingual researchers separately translated the Persian text into English. A native English translator, who had a PhD, was consulted to ensure proper translation of English terminologies into Persian.

Regarding the confirmability, all activities were accurately recorded including study stages and how data were collected. The study stages including data collection, data analysis and formation of themes were fully explained to enable scrutiny by readers. The study process was also made available to a number of study collaborators to confirm its rigour.

To assess dependability, another external auditing was used to assess similarities and differences between external auditors' understanding of the issues and the researcher's understanding.

For transferability, the researcher tried to fully explain the context in which the study was conducted by an accurate description of the participants, sampling method, and time and place of data collection so that the reader could have a positive view of data transferability.

3 | FINDINGS

A total of 17 ICU nurses participated in this study, whose demographic characteristics are presented in Table 1. Data analysis led to the extraction of four themes of 'Organization's inefficiency in supporting nurses', 'Physical exhaustion', 'Living with uncertainty' and 'Psychological burden of the disease' as challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients (Table 2).

3.1 | Theme 1: Organisation's inefficiency in supporting nurses

One of the concepts extracted according to the nurses' experiences was the organisation's inefficiency in supporting nurses. This theme included four subthemes of 'Poor organizational support', 'Excessive workload', 'Shortage of personal protective gear' and 'Discrimination in providing protective gear'.

3.1.1 | Subtheme: Poor organisational support

According to data analysis, insufficient support, failure to rewarding the personnel and no financial support of the hospital indicated poor organisational support for the ICU nurses.

We expect officials to come and visit us, motivate us, and boost our morale. Since the outbreak of Coronavirus, no university deputies or hospital managers have come to ask "What are you doing here? What kinds of problems are you facing?" This

Participant no.	Age (years)	Gender	Clinical work experience (years)	Educational level
P1	33	Male	7	Master's degree
P2	35	Female	9	Bachelor's degree
P3	40	Female	13	Bachelor's degree
P4	28	Male	4	Bachelor's degree
P5	30	Female	6	Bachelor's degree
P6	27	Female	2	Master's degree
P7	30	Male	5	Bachelor's degree
P8	33	Female	8	Bachelor's degree
P9	29	Female	5	Bachelor's degree
P10	35	Female	7	Bachelor's degree
P11	28	Male	3	Bachelor's degree
P12	36	Female	12	Bachelor's degree
P13	41	Female	17	Bachelor's degree
P14	31	Female	5	Master's degree
P15	29	Female	3	Bachelor's degree
P16	32	Male	6	Bachelor's degree
P17	43	Female	17	Bachelor's degree

TABLE 1 Demographic characteristics of the study participants

shows that the system is not much concerned about personnel.

(P16, male nurse)

The bonus of one and a half years have not yet been paid overtime. A minuscule bonus was paid as a COVID-19-related perk a few days ago. It is embarrassing to tell anyone that we have been paid such a little amount for all the efforts we made in the Corona treatment center as a nurse.

(P1, male nurse)

3.1.2 | Subtheme: Excessive workload

No leave of absence, shortage of nursing workforce and heavy shifts indicated the excessive workload in nurses providing care for COVID-19 patients.

They don't stick to the shifts and we are working as before. Our shifts are tight and we are short of the workforce. They have promised to solve the shortage of workforce but to no avail as yet. We work every damn day.

(P5, female nurse)

The shifts we work are really killing, not tiresome, but killing. We have not been given leave, and we

have been told that we must be in the hospital during this crisis. They don't give us proper off time, either.

(P14, female nurse)

3.1.3 | Subtheme: Shortage of personal protective gear

The shortage of personal protective gear and discrimination in providing protective gear was identified as one of the important challenges faced by the ICU nurses providing care for COVID-19 patients.

They give us such overalls that tear up whenever you sit down or stand up!! These are either too large or too tight, and don't fully cover our heads, hands, and feet.

(P14, female nurse)

The masks we use have no label or brand name on them, so that we know what they are. There is a filter on it that is used up by mid-shift, and you can see the person's face through it.

(P7, male nurse)

They don't easily provide the [protective] gear for us.

(P13, female nurse)

TABLE 2 Themes, subthemes and codes obtained from data analysis

Themes	Subtheme	Code
Organisation's inefficiency in supporting nurses	Poor organisational support	Improper support Failure to rewarding the personnel No financial support of the hospital
	Excessive workload	No leave of absence Shortage of nursing workforce Heavy shifts
	Shortage of personal protective gear	Lack of proper personal protective gear Insufficient provision of protective gear
	Discrimination in providing protective gear	Doctor's dominance Discrimination in having protective gear
Physical exhaustion	Exhausting protective covers	Reduced ability when working with personal protective gear Reduced focus when working with personal protective gear Unbearable heaviness of personal protective gear Difficulty eating/drinking when wearing personal protective gear Inability to use the bathroom when wearing personal protective clothes
	Physical complications	Physical tiredness Spots Skin damage Hormonal disorders
Living with uncertainty	Unclear nature of the disease	Lack of knowledge on the prognosis Lack of specific medications Unknown transmission route Unknown clinical presentation Lack of a specific vaccine
	Fearing oneself and family being infected	Fear of getting infected with the disease Fear of transmitting the disease to family
	Desire to quit the job	Low tendency to attend the shift Regretting being a nurse Thinking about quitting
Psychological burden of the disease	Domestic distress	Lack of peace in life Cessation of personal life Limited contact with family members Family members being afraid of infection Family members' obsession
	Psychological turmoil	Fear Worry Restlessness Depression Confusion Anxiety Nervous moods Aggression

3.1.4 | Subtheme: Discrimination in providing protective gear

Comparing the protective gear given to doctors with those nurses received, they experienced major discrimination. The doctors' dominance and the discrimination in receiving protective gear were challenges that could have made nurses lose their motivation in providing quality patient care.

Doctors are dominant here. Doctors are given the best gear, but it isn't like that for nurses. A nurse is condemned to work with any equipment they are given.

(P17, female nurse)

Since the nursing office is afraid of doctors, they give them any kind of clothes, shields or protective gear they want, yet nurses who are more in contact with the patients are not given such gears.

(P7, male nurse)

3.2 | Theme 2: Physical exhaustion

Physical exhaustion was another challenge emphasized by nurses. This theme consisted of two subthemes of 'Exhausting protective covers' and 'Physical complications'.

3.2.1 | Subtheme: Exhausting protective covers

Nurses expressed the following as exhaustive challenges: reduced ability and focus when working with personal protective gear, unbearable heaviness of personal protective gear, difficulty eating/drinking and inability to use the bathroom due to protective gear.

The heaviness of protective covers and gears reduces our abilities. It is very hard to focus on work with these clothes.

(P4, male nurse)

The clothes we wear make us very tired during the shift. Besides, with these on, we cannot eat or use the bathroom, especially during night shifts. Pardon me, many women have UTI, and some suffer from constipation because they have sluggish bowel.

(P12, female nurse)

3.2.2 | Subtheme: Physical complications

Based on the nurses' experiences, prolonged care of COVID-19 patients had led to some complications, including physical tiredness, spots, skin damage and hormonal disorders.

We are truly tired. In this ward, all female nurses are covered in spots because of stress, and some have hormonal disorders. Our skin is badly damaged under the mask and medical caps.

(P5, female nurse)

3.3 | Theme 3: Living with uncertainty

Living with uncertainty was another concept extracted from data analysis. This theme consisted of three subthemes of 'Unclear nature of the disease', 'Fearing oneself and family being infected', and 'Desire to quit the job'.

3.3.1 | Subtheme: Unclear nature of the disease

Based on the nurses' experiences, the unknown nature of the disease due to the lack of knowledge on the prognosis, lack of specific medications, unknown transmission route, unclear clinical presentation and lack of a specific vaccine was one of the causes of a vague and uncertain situation.

The biggest concern is the lack of knowledge about this disease, since there is no treatment for it and you don't know the prognosis. You know what is going to happen with many diseases. For instance, with the flu, you get well in 10 days, but you don't really know what happens with this disease. You don't know its clinical picture either. Are fever, cough, and shortness of breath the actual signs or not? You don't really know. We have had many of such patients with none of these signs. One patient said that he only had diarrhea. It's been four days that I've had diarrhea myself.

(P11, male nurse)

3.3.2 | Subtheme: Fearing oneself and family being infected

Fear of getting infected with the disease and transmitting it to the family had led to a kind of insecurity and ambiguity in the nurses' lives.

We fear that the more we are faced with Corona patients, the more likely it is to contract the disease. We are at high risk in the ICU. I'm sitting in the station and my patient is coughing right in front of me, and this is very risky for me.

(P6, female nurse)

We are worried about our loved ones, and fear that we might be accidentally infected and carry this

unknown disease home and pass on the disease to the spouse, children, father, and mother.

(P1, male nurse)

3.3.3 | Subtheme: Desire to quit the job

Low desire to attend the shift, regretting for being a nurse and thinking about quitting suggested the nurses' desire for quitting their jobs.

The situation is such that many colleagues don't want to come to their shifts.

(P11, male nurse)

It is not clear how long this situation could last and what is going to happen. We were all unhappy about being a nurse, and wish we had another job that would take us away from this setting.

(P8, female nurse)

3.4 | Theme 4: Psychological burden of the disease

Another challenge extracted from the nurses' experiences was the psychological burden of the disease. This theme consisted of two subthemes of 'Domestic distress' and 'Psychological turmoil'.

3.4.1 | Subtheme: Domestic distress

The prevalence of the disease and providing care for COVID-19 patients meant loss of peace in life, cessation of personal life, limited contact with family members, family members fearing transmission of infection and their obsession, all of which suggested a kind of domestic distress among the nurses.

Our lives have gone off-track, and we have no peace. Before the current pandemic, when we got home after the shift, we could at least cuddle our children. My wife and I would at least talk together, but not now! We cannot cuddle our children. Contacts are limited. We suspect and doubt anything and everything in our own home, which is the safest place in terms of Corona.

(P16, male nurse)

Our family are afraid that we might take the virus home and they could be infected. Their mentality is that we are all infected and could infect them all. It seems they fear us.

(P3, female nurse)

3.4.2 | Subtheme: Psychological turmoil

According to the nurses' experiences, the stress caused by COVID-19 was associated with the incidence of psychological turmoils such as fear, worry, restlessness, depression, confusion, anxiety, nervous moods and aggression.

The stress caused by this disease has made me a little more aggressive, as I sometimes even become hostile toward my family, especially my brother.

(P15, female nurse)

Our colleague has been infected and hospitalized. I know him, he had no immune system disorder. Now that he gets sick in bed, I see that someone with a good immune system has been infected and hospitalized, and this stresses me.

(P1, male nurse)

4 | DISCUSSION

The present study examined the challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients using a qualitative descriptive approach. Four themes were extracted as challenges faced by ICU nurses, including 'Organization's inefficiency in supporting nurses', 'Physical exhaustion', 'Living with uncertainty' and 'psychological burden of the disease'.

The onset of this pandemic in many countries exposes nurses to various challenges such as inadequate resources, insufficient PPE, increased number of patients, lack of human workforce, health system's lack of preparedness (to cope with the pandemic) and a vicious cycle. These challenges cause nurses physical and mental strains and complex ethical issues (Chen, et al., 2020; Maben & Bridges, 2020; Turale et al., 2020).

ICU nurses described the organisation's inefficiency in supporting them as one of the important challenges during the novel coronavirus outbreak. The individuals' perceived organisational support and general feelings and beliefs are such that the organisation values the cooperation of its members and is concerned about their prosperity and future. However, the nurses' experiences suggested that the organisation did not make much effort to fulfil nurses' expectations of caring for COVID-19 patients. Poor organisational support, excessive workload, shortage of personal protective gear and discrimination in providing protective gear were the issues that confirm the above challenge. ICU nurses complained about the lack of personal protective gear such as medical masks, N95 respirators, protective gowns and shields, latex and disposable gloves, protective goggles and special protective gear.

Nurses heroically attempted to provide care and save human lives in fighting against COVID-19. Many of them worked long shifts for weeks with no days off. Most of them did not have proper PPE

and were exposed to the risk of infection with COVID-19, and unfortunately, some died from the disease (Catton, 2020).

The shortage of personal protective gear has been experienced in other similar epidemics due to increased demand, poor management, distribution of resources and the lack of crisis-oriented vision (Musau et al., 2015; Sun et al., 2020).

Nursing is highly important for community health and well-being everywhere and helps the economic prosperity of countries, since health and wealth are two sides of a coin, of which people are already aware. Politicians who praised nurses for their commitment and bravery during this pandemic should allocate sufficient financial resources to support them, ensure access to proper and sufficient PPE and meet their financial needs (Catton, 2020).

In addition, discriminatory and unfair behaviours towards nurses compared with doctors in receiving protective gear were described as a highly unpleasant experience when caring for COVID-19 patients. This is rooted in doctor-dominant policies in Iran. Baraz-Pordanjani et al. (2014) argues that the distribution of authority in Iran's health care system is disproportional and biased towards doctors (Baraz-Pordanjani et al., 2014). This inequality in the distribution of authority can suitably explain the presence of discrimination. Therefore, it is highly important to create an efficient supportive system for providing proper protective gear and suitably allocating human workforce to facilitate the nurses' adaptation to the existing situation and optimize their performance of anti-pandemic tasks.

Physical exhaustion was described as another challenge faced by ICU nurses. The unbearable heaviness of personal protective gear on the one hand and the shortage of personal protective equipment on the other hand made nurses refrain from eating, drinking and using the bathroom due to the inability to change the gear during their shifts. In a vicious cycle, this had caused further physical exhaustion due to complications such as dehydration, urinary tract infection and constipation. Furthermore, prolonged care for COVID-19 patients was associated with the incidence of complications such as physical tiredness, spots, skin damage, especially on facial skin due to constant use of respirators, and hormonal disorders. In a study by Kim, nurses described heavy perspiration due to unbearable body heat caused by personal protective gear and fog on protective goggles caused by respirators as the main causes of physical tiredness (Kim, 2018). In a study by San et al., nurses, providing care for COVID-19 patients, felt severe physical tiredness and discomfort due to the spread of the disease (Sun et al., 2020). The provision of quality personal protective gear can be effective in reducing physical harm and tiredness during long shifts (Im et al., 2018; Lam & Hung, 2013).

An another challenge faced by ICU nurses was living with uncertainty, which confused them. The stress caused by the unknown nature of the disease, fear of being infected and the possibility of infecting others made nurses refrain from providing basic care and even thought to think about leaving their jobs. This finding agrees with that found by San et al. and Liu et al. (Liu et al., 2019; Sun et al., 2020). Knowing the risks of this highly contagious disease and caring for infected colleagues are the things that none of the personnel who experienced

SARS-CoV could ever forget (Siyu et al., 2020; Wu et al., 2009). Many studies have shown that the outbreak of an epidemic disease can place a psychological burden on nurses. Nurses providing care for COVID-19 patients in ICUs are under severe mental pressures that expose them to serious psychological harm (Park & Park, 2020; See et al., 2018). The incidence of behavioural problems such as irritability, anger and other maladaptive behaviours in nurses and their family's anxiety and concern, and generally reduced quality of interpersonal relationships in the family can lead to domestic distress.

Nurses caring for patients with contagious diseases are worried about their health status and concerned about infecting their families and friends, which doubles their worry (Lam & Hung, 2013). Nurses with old people in their families receiving immunosuppressive medications and those with children were most worried (Koh et al., 2012; Lam & Hung, 2013). Therefore, some nurses changed their place of residence, and some isolated themselves (Lam & Hung, 2013). Meanwhile, some nurses were psychologically supported by their family and people around and improved their emotional state by writing letters and diaries (Kang et al., 2018; Sun et al., 2020).

Hence, it is currently essential to carry out psychological interventions to increase mindfulness and resilience of nurses and their families (Dai et al., 2020; Wong et al., 2020).

5 | CONCLUSION

The present study portrayed a clear and comprehensive understanding of the challenges faced by ICU nurses during the crisis of the COVID-19 pandemic based on their lived experiences. The findings of the present study showed that ICU nurses face different challenges, including organisation's inefficiency in supporting nurses, physical exhaustion, living with uncertainty and the psychological burden of by the disease throughout the provision of care for COVID-19 patients.

The results can be used in the establishment and development of health care systems with the knowledge on the challenges nurses faced in dealing with pandemics. The development of evidence-based systems leads to the support and protection of the most valuable workforce of health care systems, namely nurses, and supporting nurses directly improves patient care and safety.

6 | LIMITATIONS

The present study explored only the experiences of Iranian ICU nurses. However, qualitative studies are not concerned with the generalizability of the results, it is recommended that similar studies in other contexts be conducted to make the results more generalizable. In addition, this was a short-term study, and prolonged engagement with the subjects can provide a valuable way to identify the present and future challenges.

7 | IMPLICATIONS FOR NURSING MANAGEMENT

Knowledge on the challenges faced by nurses in pandemics such as the current COVID-19 pandemic raises awareness in the health care systems regarding how to manage and cope with the current and similar future crises, and leads to the support and protection of the most valuable asset of the health care system, namely nurses through the development of evidence-based systems. Moreover, supporting nurses directly improves patient care and safety.

To provide safe and quality care during the pandemics, governments and health care systems must minimize physical and psychological burden on nurses by providing adequate personal protective equipment among members of the health care team, ensuring adequate workforce, modifying nurses' working hours, rewarding the personnel and paying attention to their concerns, providing accurate and evidence-based information and conducting psychological interventions on how to cope with the current crisis. This is because supporting nurses directly improves patient care and safety. Finally, using the results of the present study leads to the support and protection of nurses, improved patient safety and preparedness of health care systems for dealing with pandemics.

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CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

YM, RB, FM and KH contributed to study conception and design. YM and FM collected data. YM, RB, FM and KH analysed and interpreted the data. YM, RB and FM drafted the article. YM, RB, FM and KH critically revised the article.

ETHICAL APPROVAL

The Ethics Committee of Urmia University of Medical Sciences approved this study (Ethics No. IR.UMSU.REC.1399.021).

DATA AVAILABILITY STATEMENT

Author elects to not share data.

ORCID

Yaser Moradi  <https://orcid.org/0000-0001-9331-7573>

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