Original Article

Lived Experiences of Nurses in the Care of Patients with COVID-19: A Study of Hermeneutic Phenomenology

Abstract

Background: Nurses are at the forefront of caring for patients with COVID-19 and face a life-threatening risk to perform their duties. The complexity of disease conditions such as emerging disease may interfere with good nursing care and holistic care. The aim of this study is to reveal the lived experiences of nurses in the care of patients with COVID-19. **Materials and Methods:** This qualitative study was conducted in Khoy, Iran from March 2020 to May 2020. Fourteen nurses underwent in-depth semi-structured interviews at COVID-19 Central Hospital. All interviews were recorded, transcribed, and analyzed. Diekelmann's hermeneutic phenomenological approach was used to analyze and interpret the data. MAXQDA software version 2007 was used to manage and organize the data. **Results:** After extensive analysis and reflection, four main themes emerged, including staying in an ethical dilemma, emotional turmoil, response to professional commitments, and seeking help. **Conclusions:** The results of this study provided basic information about the lived experiences of nurses in different dimensions. Nursing managers need to be aware of these needs and expectations and provide a variety of programs and strategies not only to support nurses but also to ensure the quality of patient care.

Keywords: COVID-19, hermeneutic, Iran, nurses, nursing care, patients, qualitative research

Introduction

The outbreak of the new coronavirus in China is the third leading cause of the epidemic of coronavirus in the 21st century. Unfortunately, the disease is now a pandemic and a threat to public health around the world, which is why the World Health Organization has declared a state of emergency.^[1] The number of people infected with this disease in the world has reached nearly 104 million by 2 February 2021 and the number of deaths due to this disease has reached nearly 2.5 million and in Iran, this number has been reported as 1,411,731 and 57,889 people, respectively.^[2]

Healthcare systems faced a dramatic increase in cases of COVID-19, and the shortage of hospital beds, ventilators, and general equipment on the one hand, and the increasing need for healthcare workers on the other, became a major challenge.^[3] Nurses have always been at the frontline of combat and control specific epidemics such as SARS, MERS, and influenza. The main responsibility of nurses in legal and moral terms is to take care of clients

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in clinical settings and in the community, and it is expected that they will provide good quality care to the patient. Good care includes protecting, maintaining, and preventing injury to the patient, and various factors such as the patient's characteristics, the nurse, and the environment can affect good care. Some of the effective factors in good care include communicating with the patient, spending enough time in the patient's bed, actively listening to the patient, and paying attention to the patient's dignity.^[4,5] The complexity of disease conditions such as emerging disease may interfere with good nursing care and holistic care. Nurses face a life-threatening risk because they are more likely to come into contact with patients. Nurses are particularly vulnerable to infection and can spread the infection among colleagues and family members. The high contagiousness of the disease and the high mortality rate, the lack of specific treatment for it, and the long hours of shifts and contact with the patient's family or people suspected of having the disease have posed a serious threat to the health of nurses.^[6]

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Reviews of studies in China, Nepal, and Spain show that during recent epidemics, nurses experienced and have been exposed to occupational hazards, high workloads, nosocomial infections, psychological distress, mortality, moral challenges, anxiety and depression, insomnia, insecurity, having to do work, and so on.^[7-9] The results of a study in Iran on nurses' perceptions of COVID-19 care showed that they were under severe stress due to the coronavirus and experienced lack of protective equipment, lack of supportive work environment, challenge of communication with patients' families, feelings of loneliness, initial fear, communication challenges, and physical and mental fatigue.^[10] Also, a study conducted in Iran-Yasuj showed that nurses work in inappropriate psychological, emotional, and professional conditions.^[11]

The phenomenological approach provides important information about human interactions and is used to explore the meaning and challenges of individuals' experiences. Therefore, the phenomenological approach can be helpful with guidance from Heidegger's philosophy, and based on this, one can achieve its specific knowledge by interpreting the experiences of people involved in a phenomenon. Therefore, the aim of the present study is to reveal and interpret the experiences of nurses in patient care for COVID-19.

Materials and Methods

The present study is a qualitative study with an interpretive phenomenological approach. It was conducted in Khoy, Iran from March 2020 to May 2020. Interpretive phenomenology is the process of extracting and revealing hidden experience.^[12] In proportion to the qualitative research, purposive sampling was used with maximum variation in terms of age, sex, work experience, and academic degree. In purposeful sampling, the researcher seeks those who have a rich experience of the phenomena under study and have the ability and desire to express it.^[13] Ayatollah Khoei Hospital was selected as the central hospital for COVID-19 patients. Fourteen nurses aged 22-43 years were selected from this hospital. The inclusion criteria were having COVID-19 patient care experience for at least one month and a desire to share experiences. Also, nurses were not having a history of COVID-19 or a recent infection during the study.

The data collection method was semi-structured interviewes. Interviews were conducted before the start of the nurses' shift and in different shifts In this way, the corresponding author first referred to the participants and stated the purpose of the research, and if they wished to participate in the research, an interview time was scheduled. None of the nurses refused the interview and continued to do so eagerly. Interviews with nurses were conducted in a private room at the hospital by the corresponding author, of course, with health precautions and consideration of social distance. Open-ended questions were designed as interview guides that had open-ended and interpretive answers, and follow-up questions were asked after interviewees' responses. Interviews were audio recorded with the written permission of the participants. The general question in all interviews was: 'Please describe or express how you feel about caring for a patient with COVID-19' and 'What is it like to care for these patients?' Then more exploratory questions were asked about their thoughts, feelings, and concerns. As the interview continued, the participants were asked more detailed questions about the factors influencing them (barriers or facilitators in care). The duration of the interviews ranged from 30 to 50 minutes. In total, 14 interviews with 14 nurses were conducted in this study. No new data or concept was obtained after analyzing the last (12th) interview. However, two more interviews were conducted to ensure data saturation. None of the interviews were repeated due to the completeness of the information obtained from the interviewees.

Diekelmann's hermeneutic phenomenological approach was used to analyze and interpret the data.^[14] The researchers sought to ensure that the meaning obtained was to interpret the participants' experience of the phenomenon by going back and forth between the parts and the whole data (hermeneutic cycle). All interviews were conducted by one person, but the interviews were reviewed by two researchers of this study. In this type of phenomenology, all the experiences gained by the research team are continuously reviewed and so the results of the study are a combination of researchers' opinions. Dickelman's seven-step method was used to analyze the data. First, all the interviews were read several times to get a general understanding of the phenomenon under study, and then the second stage of the analysis process began. During this stage, the obvious and hidden meanings in the descriptions provided by the participants were extracted. In the third stage, the coded texts were analyzed by the members of the research team to obtain a common understanding of the descriptions provided. In the fourth stage, the contradictions in the interpretations were resolved by referring to the text of the interviews and the participants. In the fifth stage, using the method of comparing and contrasting the texts, the themes were determined and described. In the sixth stage, the findings were discussed in the form of themes. In the seventh stage, the final design of the findings was presented in the form of main themes.

Guba and Lincoln's criteria were used to ensure rigor of the study. These criteria include credibility, dependability, confirmability, and transferability.^[15] The credibility of the data was obtained through the prolonged involvement of researchers (two authors) with raw data. Researchers have repeatedly listened to the text of the interviews and transcribed them to become familiar enough with the texts and get immersed in the data. The member check was also used to obtain credit. In other words, the text of the interviews was returned to the participants along with the themes that emerged, and the participants confirmed that the themes effectively extracted the meaning of their experiences from the care of a patient with COVID-19. To gain credibility, two experts in the field of qualitative research monitored the entire research process. The researcher also recorded all activities and decisions from the beginning in order to confirm the data, so that it can be provided to those who are interested. Transferability was also ensured through sampling with maximum variation.

Ethical considerations

All ethical considerations were observed in this research. Prior to collecting the data, a code of ethics (code: IR.KHOY.REC.1399.002) was obtained from the ethics committee of the Khoy University of Medical Sciences, Iran, and a written consent was obtained from all nurses to participate in the interview and audio recording. Participants were assured of the optional withdrawal from the study. It was also assured that their names and identities would be kept confidential and that the information would be used for research purposes only. Interviews with nurses were performed during non-shift hours of clinical work to ensure that patient care was not affected.

Results

Participants in the study were 14 nurses who were in the 22–43 age range (mean 28.4). Nine nurses were female and five were male. The average work experience was 6 years [Table 1]. After extensive analysis, four main themes emerged from this study. It was 'staying in an ethical dilemma,' 'emotional turmoil,' 'response to professional commitments,' and 'seeking help' [Table 2].

Theme 1: Staying in an ethical dilemma

Nurses said that they remained in an ethical dilemma—of caring or not caring. Sub-themes included feeling of powerlessness, being confused, and inadequate self-care.

Feeling of powerlessness

The nurses stated that in some cases, due to the poor prognosis of the disease, their care did not affect the patients' recovery and therefore experienced powerlessness. "I came to the patient's bedside. She's a young woman. She's awake. She experiences dyspnea. She's getting oxygen, but her Oxygen Saturation (SaO2) is 57.We take any care but it is not effective. You feel like you can't do anything" (Participant 5).

Being confused

The nurses said that COVID-19 is an emerging disease, the ways of transmission, treatment, and even prevention are not fully understood, and we are gradually learning about this disease, and within a few days the treatment and diagnostic protocols will be changed. This will confuse and scare us. We do not have thorough information about the disease. We also do not know how long the disease will last. "This disease does not have a specific drug. One day this and the other day that drug is recommended. I'm not sure if I provided the proper care" (Participant 6).

Inadequate self-care

Nurses stated that due to the heavy workload, cumbersome protective equipment, and the large number of patients, they are not able to take care of themselves in long shifts and this is immoral. "Sometimes we get hypoglycemia. During the shift, we can't eat anything. Wearing clothes makes our bodies sweat, we get dehydration. That is correct ? Is it moral?" (Participant 9).

Theme 2 Emotional turmoil

During the interview, the nurses tried to articulate the main theme with various expressions, which caused a great deal of emotional turmoil at the beginning of Corona's outbreak. Although this disorder has diminished over time, it has continued to affect their care. Emotional turmoil had components of feeling victimized, risk of being rejected by others, and risk of emotional separation from the family.

Feeling victimized

At the beginning of the disease phase, nurses felt victimized. They felt like they were on the edge of a precipice that had no way back, or they were on a battlefield with no weapons to fight, and since a number of healthcare workers had lost their lives, they felt that they will also fall victim to the disease. "Masks and protective equipments are scarce, we have entered into an unequal war with the virus. Some of our colleagues have lost their lives during this time, and this may have happened to me" (Participant 3).

Risk of being rejected by others

Another concern that nurses lived with was the risk of rejection by friends, acquaintances, and even colleagues in other wards. "*They treat us like lepers, they think we are infecting them*" (Participant 14).

Risk of emotional separation from the family

The nurses isolated themselves from the family to prevent the transmission of the disease and suffered emotional separation between themselves and the family."*When I* come home from work, I isolate myself at home. I don't eat with my family; I don't hug my baby" (Participant 11).

Theme 3: Response to professional commitments

The third theme was the theme of response to professional commitments. Professional commitment in nursing experience is an issue that shows that although caring for a patient with COVID-19 is challenging, nurses have shown professional commitment to their role and will spare no effort in helping the patients.

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Table 1: Demographic characteristics of participants					
Participants No	Sex	Age (years)	Education level	Clinical placement	Work experience
1	female	22	bachelor's degree	Medical	5
2	male	26	bachelor's degree	Medical	3
3	female	28	bachelor's degree	ICU	8
4	female	43	master's degree	Medical	13
5	female	30	master's degree	ICU	5
6	female	28	bachelor's degree	Medical	5
7	female	23	bachelor's degree	Medical	7
8	male	24	bachelor's degree	ICU	6
9	male	23	bachelor's degree	Medical	3
10	female	22	master's degree	Medical	8
11	male	33	master's degree	ICU	4
12	female	38	bachelor's degree	Medical	15
13	male	26	bachelor's degree	ICU	7
14	female	23	bachelor's degree	Medical	5

Sub-themes	Themes	
1.1 Feeling of powerlessness	1. Staying in an ethical dilemma	
1.2 Being confused		
1.3 Inadequate self-care		
2.1 Feeling victimized	2. Emotional turmoil	
2.2 Risk of being rejected by others		
2.3 Risk of emotional separation from the family		
3.1 Verbal care	3. Response to professional commitment	
3.2 Self-motivation		
3.3 Patient education		
4.1 Seek the support of health benefactors	4. Seeking help	
4.2 Seek the support of the authorities		

Verbal care

Nurses expressed that they communicated verbally with patients who were hospitalized and were anxious and afraid of death, and comforted them with a professional mission and took care of their psychological needs. "Patients who are conscious, I communicate with them and talk to them, they calm down very quickly. Talking to the patient is very important, hope is a miracle. When you tell her not to worry, you will be fine, we will help you, she is reassured and her recovery will be accelerated" (Participant 9).

Self-motivation

To meet the challenges, nurses sought to see this situation as an opportunity to serve their countrymen and their profession, and thus to motivate themselves. "*I keep flipping to be a good nurse, I think this is an opportunity for me to serve in this situation*" (Participant 7).

Patient education

The nurses in the present study, despite living with challenges, were also interested in empowering their patients. "I use every opportunity to educate the patient, I follow up with each patient even after discharge, I call

them. I remind them of their medicines, health, and so on" (Participant 8).

Theme 4: Seeking help

Nurses sought help from the general public, health benefactors, government, nursing associations, and managers with various statements. They also called on the authorities to always look at them as frontline of combat and not to forget them after the COVID-19 crisis, and to meet their financial and spiritual needs.

Seek the support of the health benefactors

The nurses asked the people, especially the health benefactors, to help the hospitals in providing the equipment needed by the patients, such as rare and expensive medicines, beds, and so on. "A *few days ago, a benefactor prepared a large number of IVIG for patients. We want this to continue*" (Participant 13).

Seek the support of the authorities

Nurses called on all officials inside and outside the system to provide material and spiritual support. "We want the authorities to always pay attention to us, not when they are in urgent need. We are told that you are at the frontline of combat and you are on the battlefield against the disease. Well, this is our usual job, now it has become a little harder. So always give us importance" (Participant 6).

Discussion

The findings of the present qualitative study enhanced our understanding of the critical care experience and provided us with unique information. Data analysis revealed four main themes and 11 sub-themes. The themes extracted in this research included staying in an ethical dilemma, emotional turmoil, response to professional commitments, and seeking help.

The first theme emerged in the study was staving in an ethical dilemma. They were at a dilemma between continuing to work in the face of experiencing powerlessness, confusion, and uncertainty about proper care due to the rapid change of guidelines, lack of self-care due to the circumstances, and they had an unfavourable experience. Nurses suffered from feeling of powerlessness. In consistence with this sub-theme, Chinese nurses perceived incompetence in rescuing patients with COVID-19 and performing professional responsibilities, leading to a reduction in their professional identity.^[16] Another ethical challenge for the nurses under study was the experience of confusion. Similarly, a systematic review of nurses' experiences in the respiratory disease epidemic showed that nurses were confused under difficult conditions and rapid changes in care guidelines.^[17] Of course, the severity of this sensitivity in different work environments and cultures can be different. In Iran, for cultural and religious reasons, moral sensitivity to providing proper care is high.^[18,19] One of the sub-themes of this study was the inadequate self-care. Nurses could not take care of themselves due to the new work conditions, heavy workload, and use of Personal Protective Equipment (PPE). Research also shows that protective equipment such as N95 respirators and wearing cumbersome clothing and equipment causes great discomfort and reduces the ability to work and ultimately, reduces contact with the patient.^[20-23] Lack of self-care and lack of self-compassion in healthcare workers is immoral.^[24]

The ethical challenges of health workers are seen in all epidemics and in all cultures. Nursing managers should teach their staff how to overcome the challenges in the form of a scenario. Accurate notification of guidelines and announcing minor changes to them can save nurses from confusion in care. Nursing managers should also provide nurses' self-care by shortening shift times.^[25]

The second theme emerged in the study was living in emotional turmoil. This theme was about the intense psychological stress experienced by nurses. Sub-themes of emotional turmoil included *feeling victimized*, *risk of being rejected by others*, and *risk of emotional separation from the family*. The nurses in the present study felt victimized due to working in an unsafe environment, lack of protective equipment, hearing their colleagues infected, and dying. Previous studies on the care of patients with SARS-CoV and MERSE-CoV and recent studies in COVID-19 have also shown that nurses in the early weeks of the disease had negative psychological feelings such as fear, anxiety, and helplessness, lack of concentration and poor memory, and they used negative adaptation mechanisms such as avoiding patient care and tendency to leave work, and preferred to care for patients other than infectious patients.^[8,9] These unpleasant feelings not only affect the nurses themselves but also the quality of care and safety of the patients.^[26] Providing full protective equipment and compliance with protocols by the hospital can help reduce their feeling of victimized. Studies have shown that nurses' perceptions of the adequacy of infection control facilities in hospitals and PPE is related to their willingness to care for patients with SARS-CoV, MERSE-CoV, and COVID-19.[27-29] Healthcare workers need to be reassured that they will be tested regularly, even if they do not have any signs or symptoms; this increases self-confidence. The main concern of healthcare providers in COVID-19 is hear me, protect me, prepare me, support me, and care for me.^[20,30,31] Finally, the worries of caregivers should be reduced. The results of the study showed that participants suffered from the negative attitude of those around them due to the possibility of being disease carrier and weakening the emotional connection with the family due to quarantine. A recent study of COVID-19, SARS-CoV, and MERSE-CoV diseases showed that the social interactions of healthcare providers were affected during pandemics and epidemics, and that they experienced stress caused by stigma, and rejection by those around them.[32-34] A recent study in China showed that these challenges can be addressed through specific measures. Providing a rest room for nurses and providing all the facilities of daily life, the possibility of recording a video and sending it to the family, and providing counselors to hear the concerns of nurses were among these measures. Social support for healthcare providers is also needed to help them stay committed to their service.^[25,35,36] The experience of emotional separation from the family can also cause severe psychological trauma to nurses, especially in Iranian families where there is a lot of emotional dependence.

Another theme that emerged from the study was the response to professional commitments. Despite experiencing many challenges, nurses tended to commit to professional work with verbal care, self-motivation, and patient education. They also showed professional and compassionate nursing in these special circumstances. Participants in the present study stated that hospitalized patients had severe anxiety of death and lack of self-care knowledge. Nurses in these difficult work environment conditions, despite experiencing many ethical challenges, tried to take both professional measures and provide verbal care and education to patients. In fact, nurses showed their motivation and commitment to the profession, despite living in challenges. A review of the first four months of coronavirus outbreak found that nurses played a major role in reassuring, reducing uncertainty, and reducing misinformation and calming patients.^[37] Commitment to the profession is a key factor in maintaining patient safety and quality of care, and is a predictive factor in quitting or staying in the profession.^[37,38] The results of this study are consistent with some studies that nurses in the care of infected patients and MERSE-CoV feel grown and try to show high quality care with a greater sense of responsibility.^[39,40] Hospitals can reduce the impact of emerging diseases by increasing the knowledge of these individuals in other similar cases, and increasing the professional commitment of staff.^[41] Research has shown that nurses were better cared for in critical situations because of their professional duties, sense of responsibility to society, religious beliefs, and thinking of the patient as a member of their own family.^[3,42]

Another theme of the study was that nurses sought help from people, health benefactors, and officials. Nurses asked health benefactors for help in providing equipment and medicines. Corona imposed great economic pressure on nations and governments. This pressure was particularly high in Iran due to the pressure of economic sanctions.^[43] Therefore, the help of the charity campaign was very effective in eliminating the shortcomings. Nurses also expected officials inside and outside the organization to always emphasize their role in controlling epidemics. Korean nurses also felt frustrated after Morse's illness, saying that they were forgotten warriors who did useless work, and had not received a timely and appropriate reward for their efforts in a dangerous situation. They considered themselves comforted by the ideals of the profession, which is to provide assistance.[40] In fact, nurses need to be supported by the government, nursing associations, and policymakers both during and after the pandemic.

Caution in generalizability is one of the limitations of the results of all qualitative studies. The results of the present study may be applied in a setting similar to our context. Our participants were all nurses working in Khoy, Iran hospitals who were highly influenced by organizational culture and structure. Thus, it is suggested that similar studies be conducted in other regions with different organizational and individual characteristics.

Conclusions

The results of this study showed that Iranian nurses in caring for a patient with Covid 19 lived in a context of moral dilemma and emotional turmoil. Despite this situation, nurses fulfilled their professional obligations. They sought help from health benefactors and officials to meet the shortcomings. The results of this study provided basic information about the lived experiences of nurses in various dimensions. It is recommended that nursing managers provide conditions that make it easy for nurses to pass this stage. Providing PPE, teaching methods to overcome moral challenges, shortening shift times to prevent lack of self-care, and being appreciated by officials and the government at all times help control negative emotions and prevent them from feeling victimized. Also, due to the social and cultural context, the hospital should provide the necessary facilities such as video and virtual communication with the family to reduce the emotional trauma caused by quarantine.

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Conflicts of interest

Nothing to declare.

References

- Song F, Shi N, Shan F, Zhang Z, Shen J, Lu H, *et al.* Emerging 2019 novel coronavirus (2019-nCoV) pneumonia. Radiology 2020;2951:210-7.
- WHO. Coronavirus disease 2019 (COVID 19): Situation report, 88 World Health Organization. [cited 2020 April 17]. Available from: https://www.who.int.
- Limbu S, Kongsuwan W, Yodchai K. Lived experiences of intensive care nurses in caring for critically ill patients. Nurs Crit Care 2019;241:9-14.
- Preti E, Di Mattei V, Perego G, Ferrari F, Mazzetti M, Taranto P, et al. The psychological impact of epidemic and pandemic outbreaks on healthcare workers: Rapid review of the evidence. Curr Psychiatry Rep 2020;228:43.
- Abolfotouh MA, AlQarni AA, Al-Ghamdi SM, Salam M, Al-Assiri MH, Balkhy HH. An assessment of the level of concern among hospital-based health-care workers regarding MERS outbreaks in Saudi Arabia. BMC Infect Dis 2017;17:4.
- Jia Y, Chen O, Xiao Z, Xiao J, Bian J, Jia H. Nurses' ethical challenges caring for people with COVID-19: A qualitative study. Nurs Ethics 2021;28:33-45.
- Legido-Quigley H, Mateos-García JT, Campos VR, Gea-Sánchez M, Muntaner C, McKee M. The resilience of the Spanish health system against the COVID-19 pandemic. Lancet Public Health 2020;55:e251-2.
- Khanal P, Devkota N, Dahal M, Paudel K, Joshi D. Mental health impacts among health workers during COVID-19 in a low resource setting: A cross-sectional survey from Nepal. Global Health 2020;16:89.
- Wang X, Jiang X, Huang Q, Wang H, Gurarie D, Ndeffo Mbah M, et al. Risk factors of SARS CoV 2 infection in healthcare workers: A retrospective study of a nosocomial outbreak. Sleep Med X 2020;2:1-8.
- Irandoost SF, Lebni JY, Safari H, Khoram F, Ahmadi S, Soofizad G, et al. Explaining the experiences, challenges and adaptation strategies of nurses in caring for patients with COVID 19: A

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qualitative study in Iran. Research Square 2020. DOI: https://doi.org/10.21203/rs.3.rs 100575/v1.

- Karimi Z, Fereidouni Z, Behnammoghadam M, Alimohammadi N, Mousavizadeh A, Salehi T, *et al.* The lived experience of nurses caring for patients with COVID-19 in Iran: A phenomenological study. Risk Manag Healthc Policy 2020;13:1271-8.
- Smith JA, Osborn M. Interpretative phenomenological analysis as a useful methodology for research on the lived experience of pain. Br J Pain 2015;9:41-2.
- Campbell S, Greenwood M, Prior S, Shearer T, Walkem K, Young S, Bywaters D, Walker K. Purposive sampling: complex or simple? Research case examples. J Res in Nurs 2020 25:652-61.
- 14. Oerther S. Analysis methods in hermeneutic phenomenological research: Interpretive profiles. Front Nurs 2020;7:293-8.
- 15. Morse JM. Critical analysis of strategies for determining rigor in qualitative inquiry. Qual Health Res 2015;259:1212-22.
- Sheng Q, Zhang X, Wang X, Cai C. The influence of experiences of involvement in the COVID-19 rescue task on the professional identity among Chinese nurses: A qualitative study. J Nurs Manag 2020;28:1662-9.
- Fernandez R, Lord H, Halcomb E, Moxham L, Middleton R, Alananzeh I, *et al.* Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. Int J Nurs Stud 2020;111:103637.
- Borhani F, Abbaszadeh A, Mohamadi E, Ghasemi E, Hoseinabad-Farahani MJ. Moral sensitivity and moral distress in Iranian critical care nurses. Nurs Ethics 2017;24:474-82.
- Heydari A, Khorashadizadeh F, Nabavi FH, Mazlom SR, Ebrahimi M. Spiritual health in nursing from the viewpoint of Islam. Iran Red Crescent Med J 2016;18:e24288.
- Huh S. How to train health personnel to protect themselves from SARS-CoV-2 (novel coronavirus) infection when caring for a patient or suspected case. J Educ Eval Health Prof 2020;17:10.
- Huang L, Lin G, Tang L, Yu L, Zhou Z. Special attention to nurses' protection during the COVID 19 epidemic. Crit Care 2020;24:1-3.
- Singer PA, Benatar SR, Bernstein M, Daar AS, Dickens BM, MacRae SK, *et al.* Ethics and SARS: Lessons from Toronto. BMJ 2003;327:1342-4.
- Wong JE, Leo YS, Tan CC. COVID-19 in Singapore-current experience: Critical global issues that require attention and action. JAMA 2020;323:1243-4.
- 24. Egan H, Keyte R, McGowan K, Peters L, Lemon N, Parsons S, et al. 'You before me': A qualitative study of health care professionals' and students' understanding and experiences of compassion in the workplace, self-compassion, self-care and health behaviours. Health Prof Educ 2019;5:225-36.
- Choi J-S, Kim J-S. Factors influencing emergency nurses' ethical problems during the outbreak of MERS-CoV. Nurs Ethics 2018;25:335-45.
- Zhang Y, Wei L, Li H, Pan Y, Wang J, Li Q, et al. The Psychological Change Process of Frontline Nurses Caring for Patients with COVID-19 during Its Outbreak. Issues Ment Health Nurs 2020;41:525-30.
- 27. Xie J, Tong Z, Guan X, Du B, Qiu H, Slutsky AS. Critical

care crisis and some recommendations during the COVID-19 epidemic in China. Intensive Care Med 2020;46:837-40.

- Murthy S, Gomersall CD, Fowler RA. Care for critically ill patients with COVID-19. JAMA 2020;323:1499-500.
- 29. Choi KR, Skrine Jeffers K, Cynthia Logsdon M. Nursing and the novel coronavirus: Risks and responsibilities in a global outbreak. J Adv Nurs 2020;76:1486-7.
- Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. JAMA 2020;323:2133-4.
- Rowan NJ, Laffey JG. Challenges and solutions for addressing critical shortage of supply chain for personal and protective equipment (PPE) arising from Coronavirus disease (COVID19) pandemic–Case study from the Republic of Ireland. Sci Total Environ 2020;725:138532.
- Huang L, Xu F, Liu H. Emotional responses and coping strategies of nurses and nursing college students during COVID-19 outbreak. medRxiv. 2020. doi: https://doi.org/10.1101/2020.030. 05.20031898.
- Park J-S, Lee E-H, Park N-R, Choi YH. Mental health of nurses working at a government-designated hospital during a MERS-CoV outbreak: A cross-sectional study. Arch Psychiatr Nurs 2018;32:2-6.
- Khalid I, Khalid TJ, Qabajah MR, Barnard AG, Qushmaq IA. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. Clin Med Res 2016;14:7-14.
- Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental health care for medical staff in China during the COVID-19 outbreak. Lancet Psychiatry 2020;7:e15-6.
- Sodeify R, Habibpour Z. Nurses' perceptions of co-worker support in the workplace: Qualitative research. Enferm Clin (Engl Ed) 2020;S1130-8621(20)30305-3. doi: 10.1016/j. enfcli. 2020.04.005. Online ahead of print.
- 37. Gizaw AB, Kebede DB, Hanfore LK, Belachew YB. Level of professional commitment and associated factors among nurses working in Jimma Zone public hospitals; Jimma South West Ethiopia. Palliat Med Care 2016;5:1-9.
- Al Hamdan Z, Dalky H, Al Ramadneh J. Nurses' professional commitment and its effect on patient safety. Glob J Health Sci 2018;10:111-9.
- Lam KK, Hung SYM. Perceptions of emergency nurses during the human swine influenza outbreak: A qualitative study. Int Emerg Nurs 2013;21:240-6.
- 40. Yujeong Kim R. Nurses' experiences of care for patients with Middle East respiratory syndrome-coronavirus in South Korea. Am J Infect Control 2018;46:781-7.
- Chen SL, Chang SM, Lin HS, Chen CH. Post-SARS knowledge sharing and professional commitment in the nursing profession. J Clin Nurs 2009;18:1738-45.
- 42. Jones S, Sam B, Bull F, Pieh SB, Lambert J, Mgawadere F, *et al.* 'Even when you are afraid, you stay': Provision of maternity care during the Ebola virus epidemic: A qualitative study. Midwifery 2017;52:19-26.
- 43. Takian A, Raoofi A, Kazempour-Ardebili S. COVID-19 battle during the toughest sanctions against Iran. Lancet 2020;395:1035-6.