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Experiences and challenges of nursing education in response to the COVID-19 pandemic: A qualitative study in Iran

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Abstract:

BACKGROUND: The preparedness of nurses in the COVID-19 pandemic, will be of great importance when it comes to the unknown future of the pandemic and other similar ones. Identifying their problems can lead to better planning, preparation, and management. This study aims to explore Iranian nurses' experience of their preparedness challenges to give an effective response to the pandemic.

MATERIALS AND METHODS: A qualitative content analysis approach using semi-structured interviews was employed to explore nurses' preparedness experiences. 28 nurses were interviewed, after transcription of the interviews, a content analysis using constant comparison was performed for data analysis based on Graneheim and Lundman approach.

RESULTS: The results of the study can be summarized in 6 main categories and 14 subcategories, such as the necessity of continuing educational workshops, the necessity of holding exercises in the same environment, the importance of familiarity with the pandemic, the importance of educating all those involved in providing services in the pandemic, the need for providing immersive education for the pandemic and the need for planning and practice concerning the pandemic.

CONCLUSION: When nurses receive more support, they can have their best performance. up-to-date training can prepare nurses more effectively, which will, in turn, make prepared nurses available, maximize their efficiency, and minimize their adverse mental consequences. Nurse managers may support nurses and increase hospital resilience in such emergencies. Nurses indicated some issues including managers' support, workplace culture, education, physical space, access to PPE, and willingness to provide the best care. These findings can be helpful in the management of the pandemic and preparing nurses as a large group of healthcare workers. Necessary training, along with the provision of adequate resources, should be programmed to support this effective group of health providers.

Keywords:

COVID-19, critical care nursing, education, emergency, Iran, nurse, preparedness

Introduction

The new coronavirus (COVID-19) was detected in Wuhan, China, in December 2019 and is causing the general flu. Symptoms of the virus can range from the common cold to fever, coughing, shortness of breath, and acute respiratory problems. Of all COVID-19 patients, 5 to 20 percent require hospitalization in the

intensive care unit (ICU) and the mortality rate among people with severe illness and acute respiratory distress syndrome is about 50%.^[1] According to the World Health Organization (WHO), the number of infected people worldwide has exceeded 10,590,000 cases, of which more than 5,798,000 have recovered and more than 514,20 cases have died.^[2] On February 19, 2020, Iran confirmed two patients inflicted with

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coronavirus. Up to March 16, 2020, Iran was the third country in terms of reported COVID-19 cases after China and Italy; Iran was the first country in the Middle East in terms of the number of COVID-19 patients.^[3] Finally, the WHO announced the COVID-19 outbreak as a pandemic on 11 March 2020.^[4]

The recent pandemic is a big crisis and a worldwide disaster. Previous warnings of a pandemic have been often ignored, despite the mounting evidence that countries have needed to be prepared for one. All over the world, life has unraveled faster than we could ever have imagined.^[5] Disasters are special situations that require the cooperation of all trained members of a health team because healthcare teams, especially nurses, are among the first who deal with these cases.^[6] Nurses play an active role in emergency management since they spend much of their time with patients. They must have the necessary expertise to deliver clinical care, lead a team, have creative problem-solving skills, be experienced in resource management, and have important communication skills in situations with rapid changes.^[7] In this recent pandemic, nurses are asked to care for others, sometimes even without access to personal protective equipment (PPE). Many nurses struggle to care for patients and, at the same time, to maintain their health and that of their families. Despite all these problems, nurses have been providing services to patients. They have a special role because they know not only the science of intensive care but also the art of care.^[8] Nurses' roles in the management of patients with COVID-19 include initial assessment, evaluation, triage, sample collection, care for patients with mild to moderate symptoms, care for critically ill patients, and even care for the deceased.^[9]

Front-line healthcare providers are at risk of infection and contamination. Inadequate awareness, insufficient precautionary measures, increased patient overload, and burnout is among the important causes of contamination for healthcare providers. Infection with the COVID-19 virus is very common and deadly among healthcare providers. This infection, if occurs among healthcare personnel, can cause widespread transmission within the system, which can even lead to the collapse of the entire system.^[10] Therefore, according to the WHO's recommendations, all health workers should take proper precautions regarding contact and droplet.^[2] In the recent pandemic, due to the increase in the number of patients and overload of hospitals, many public wards have been changed to isolated wards for COVID-19 cases and healthcare providers without infectious disease skills have to provide services for these patients.^[11] Given the point that nurses are one of the first and largest healthcare providers during emergencies and that there is a need for prepared

nurses with the required qualifications, experience, knowledge, skills, independence, and self-confidence to provide proper nursing care during emergencies,^[7,12] it is very important to evaluate the experience of this group concerning their preparedness.^[13-15] In this regard, qualitative inquiries are the best way to understand social responses to such a pandemic. These methods allow for gaining an understanding of how people interpret health problems and illnesses, and how they perceive them.^[16-18] Interviews and observations can provide the ground for exploring different perspectives, meanings, and motivations.^[19] Therefore, researchers chose this approach to be able to obtain a clearer picture of the experience and problems the nurses had in the process of getting prepared for the pandemic.

This study aim did explore Iranian nurses' experience concerning their challenges in terms of being prepared to effectively respond to the COVID-19 pandemic. The findings of the study can be a basis for healthcare policymakers to have an educational plan for providing higher-quality services and better management of the pandemic.

Materials and Methods

Thematic Content analysis, which is an approach to analyzing qualitative data, was used to analyze the data in this study. using constant comparison was performed for data analysis based on Graneheim and Lundman approach. Content analysis is a method that uses concepts and subcategory reports to direct the researcher to achieve concise and complete definitions of the studied phenomenon.^[20,21]

Study design and setting

28 participants were interviewed during a period of 3 months (March 2021 to May 2021) to collect or generate data-rich information. The participants were nurses who had the experience of providing healthcare at the time of the pandemic as nurses or nurse managers. Their desire to participate in the study was assumed as a conclusion criterion despite the above criteria. The sampling method was purposive. To have maximum variety, we tried to select nurses who had served in various settings and also in various roles. The interviews lasted between 38 and 58 minutes. Most of the interviews were carried out at their workplace by keeping the physical distance rule or via telephone or Skype by mutual agreement and at the convenience of the participants. For data collection, the interview began with a semi-structured method, and with an open-ended question based on the main research question. As it continued, the interview gradually went on based on the data analysis, with the researcher asking deep questions about the nurses' experience with COVID-19 [Table 1].

Table 1: Participant characteristics

| Age (years) | Position in the COVID-19 pandemic | Working history (years) | Age (years) | Position in the COVID-19 pandemic | Working history (years) |
|-------------|-----------------------------------|-------------------------|-------------|-----------------------------------|-------------------------|
| 45 | Nurse, Nursing manager | 18 | 46 | Nurse, Nursing manager | 24 |
| 28 | Nurse | 2 | 29 | Nurse | 3 |
| 43 | Nurse, Nursing manager | 22 | 46 | Nurse, Nursing manager | 20 |
| 36 | Nurse | 7 | 25 | Nurse | 1 |
| 50 | Nurse | 22 | 24 | Nurse | 1 |
| 41 | Nurse | 10 | 26 | Nurse | 2 |
| 40 | Nurse | 13 | 40 | Nurse | 10 |
| 45 | Nurse, Nursing manager | 19 | 43 | Nurse, Nursing manager | 19 |
| 33 | Nurse | 10 | 28 | Nurse | 2 |
| 34 | Nurse | 11 | 47 | Nurse, Nursing manager | 20 |
| 29 | Nurse | 5 | 43 | Nurse, Nursing manager | 17 |
| 38 | Nurse | 15 | 24 | Nurse | 1 |
| 35 | Nurse | 11 | 27 | Nurse | 3 |
| 27 | Nurse | 2 | 26 | Nurse | 2 |

Data collection and analysis

All the interviews were conducted by the first author and recorded by a voice recorder with the agreement of the participants. Data analysis was carried out simultaneously with the data collection phase. The analysis involved several steps. Initially, the recorded interviews were transcribed verbatim. In the second step, the transcripts were reviewed several times before coding to have some familiarity with the whole idea. Meaning units and coding were determined during the third step. In the next step, after reviewing the codes, they were classified (the codes were compared in terms of similarities and differences, and similar ones were combined). Then, different categories were developed based on their similarity and relevance. The other steps which were taken to analyze the data included reviewing categories and comparing them to ensure the strength of the codes, identifying themes with careful consideration, and, eventually, reporting the results.^[20,21]

Rigor and trustworthiness

Four criteria of creditability, transferability, dependability, and confirmability were used to provide the validity and reliability of the results.^[22] To ensure that the analysis disclosed nurses’ experiences, a member check was done during the data collection. Also, the researchers were continuously engaged with the data for more than 4 months to enhance its credibility of the data. The researchers accurately recorded and reported different processes of the research to make the follow-up process and further research easier for others. We tried to provide quotes from participants without changing the context. Moreover, sampling with maximum variation enhanced the suitability and transferability of the data. The results of the analyses, such as the codes and subcategories, were checked by some experts. The external check method was accomplished.

Ethical considerations

This study obtained permission from the “Iran National Science Foundation.” All the participants were aware of the research objectives and were assured that their personal information would remain confidential. The interviews were recorded with the consent of the participants. All the necessary explanations were given to the participants regarding the right to withdraw from the study at any time. Written consent was also taken from all the participants.

Results

The participants of the study consisted of 28 nurses who had experience in providing healthcare or had management experience in the COVID-19 pandemic. Their demographic characteristics are shown in Table 1. The main challenges which were identified based on the experiences and understanding of the nurses included: “The necessity of continuing educational workshops,” “The necessity of holding exercises in the same environment,” “The importance of familiarity with the environment of the COVID-19 pandemic,” “The importance of educating all those involved in providing services in the COVID-19 pandemic,” “The need for providing immersive education for the COVID-19 pandemic” and “The need for planning and practice concerning the COVID-19 pandemic” [Table 2]. These categories are explained below.

The necessity of continuing educational workshops

The necessity of continuing education workshops is an important factor in nurses’ preparedness to respond to the pandemic. These workshops should be held permanently. Nurses acknowledged that they were unprepared to provide care in the pandemic. The majority of the participants stated that, in addition to the unknown and frightening conditions of the pandemic,

Table 2: Examples of extracting codes, subcategories, and categories from raw data

| Meaning unit | Code | Subcategory | Category |
|--|---|---|---|
| Training individuals to encounter such a complex crisis, as the COVID-19 pandemic, is difficult and the training courses must be repeated. Such training should be done not just once, but rather at regular intervals. (p1) | The need to hold emergency and pandemic preparation workshops | The importance of holding pandemic preparation workshops | The necessity of continuing educational workshops |
| | Holding workshops for possible events | The need for continuity of training | |
| | The importance of continuous training of nurses | | |
| | The need to hold workshops for preparation | | |
| After tasks became clear, I should train with you on your tasks. I should tell you, ma'am; Go into the triage room and I will send 100 labels for you and I should tell you to triage these 100 labels in 10 minutes. I should give you the necessary program, training, practice, and resources. I should tell you that you need a guard for the door and a suitable space to do triage and an exit here; I will provide these three for you. You should exercise all of these with PPE. (p5) | The need to repeat the training | | The necessity of holding exercises in the same environment |
| | The importance of nursing practice in similar settings | The need to perform maneuvers to prepare for possible pandemics | |
| | The need to prepare for stress-free situations | The importance of experiencing scenes similar to real pandemics | |
| | Lack of training of young nurses due to lack of training in similar situations | The need to create the experience of similar environments for the preparation of nurses | |
| | The need to receive training on the environment and incident simulation | | |
| It is very important to know in what environment we are going to provide care. For example, in the ICU, special protection is required when providing routine intensive care and airborne precaution, especially when we are performing procedures that create aerosols. the care setting is very important. Well, it is the area that requires special attention. (p15) | The need to practice in a simulated environment to create a mentality of the accident environment | | The importance of familiarity with the environment of the COVID-19 pandemic |
| | The importance of training nurses for the pandemic environment | The importance of preparing for a pandemic environment | |
| | The need for the nurse to be familiar with the unique pandemic environment | The necessity of familiarity with the pandemic environment | |
| Training all individuals is important. Nurses do not work in a vacuum; for instance, even transport systems are very important, including ambulances and vehicles that are there. Training these drivers is, in itself, one of the important issues in this field. (p7) | The importance of preparing for a stressful pandemic environment | | The importance of educating all those involved in providing services in the COVID-19 pandemic |
| | Train ambulance drivers for pandemics | Preparation of non-specialist personnel for pandemics | |
| | The need to train and practice the nurse and other team members | The need to train all members of the treatment and non-treatment team | |
| I have to consider everything at the same time. Well, there is a lot of work pressure on us. we have to work long hours because many of our colleagues get sick and cannot work. Sometimes, due to lack of PPE, I cannot go to the bathroom for a whole shift because if I take off my clothes, I have no other clothes to wear. also, we should be able to take care of our family, but before that, we must stay healthy. (p21) | The need for security guard training | | The need for providing immersive education for the COVID-19 pandemic |
| | The need to train service personnel | | |
| | The need for training to master all levels and gain the trust of others | The need for training in all areas necessary to provide services | |
| | The need for special training for nurses | The need for nurses to be prepared in the skills of providing medical services | |
| | The need to strengthen nurses to do group work | The need for risk analysis training | |
| | The need to train and acquire the nurse's psychomotor skills over time | | |
| | The need for risk analysis training before a pandemic occurs | | |

Contd...

Table 2: Contd...

| Meaning unit | Code | Subcategory | Category |
|--|--|---|---|
| We do not know how long this pandemic is going to last. Every day, new news comes that contradicts yesterday's news. The more time passes, the more we realize that we know nothing about this disease. Situation management is only possible with planning and practice. With this planning and practice, we must all go to the war against this pandemic and learn from what has happened; next time, be ready for future epidemics. (p28) | The need to do triage frequently to prepare for a pandemic | | |
| | The need to examine the threats, the necessary interventions, and the facilities required for them | | |
| | The need to continue preparation exercises followed by planning | The need for the continuous exercise of nurses after training | The need for planning and practice concerning the COVID-19 pandemic |
| | The need for practice to anticipate the need for program modification | The need for planning and practice for possible pandemics | |

some of them were not even prepared for the basics of personal protective measures or infection control. A participant (7) in this regard mentioned:

"...Although there have been epidemics in the past, and it has been probable for similar diseases to erupt again, I really did not consider myself ready for such a situation. I even feel that many of my colleagues were not ready, too. We did not receive such training, but even if we had received it at university, it still needs to continue. These things must be continuous and cannot be intermittent..."

Given that readiness is a continuous process and has no endpoint, continuous training to be prepared to provide a proper and effective response to such situations must happen in advance and be repeated continuously. The recent pandemic caused many problems, there should be training; the training should be continuous, based on regular planning, and updated regularly. Participant (1) described:

"...Training individuals to encounter such a complex crisis, like the COVID-19 pandemic, is difficult and the training courses must be repeated. Such training should be done not just once, but rather at regular intervals..."

The necessity of holding exercises in the same environment

According to the experiences of nurses, preparedness training for an effective response to the pandemic should be practical and one of the ways to increase the effectiveness of this training is to provide it in a real or similar environment. If these trainings are presented only theoretically in the university or workshops, they will not have enough effect. However, if they are held in a real environment or a simulated one, and practiced efficiently, the gaps and weaknesses in the training program can also be identified, corrected, and revised. A response based on a revised and modified schedule is

a more effective one and nurses trained based on a more effective schedule will be more prepared, will provide better quality services, and will face fewer challenges. Participant (5) mentioned:

"...After tasks became clear, I should train with you on your tasks. I should tell you, ma'am; Go into the triage room and I will send 100 labels for you and I should tell you to triage these 100 labels in 10 minutes. I should give you the necessary program, training, practice, and resources. I should tell you that you need a guard for the door and a suitable space to do triage and an exit here; I will provide these three for you. You should exercise all of these with PPE..."

The importance of familiarity with the environment of the COVID-19 pandemic

Nurses must be completely familiar with such environments, which are very different from the usual scenarios. According to the interviews, nurses experienced conflicting emotions, which were more negative in the early stages and were accompanied by frustration, uncertainty, and despair. Hard-working conditions, long shifts, fear, and anxiety about getting infected with the virus and transferring the virus to their family members had always been with them. The unclear nature of the disease exacerbated all the above-mentioned issues. The nurses also felt insecure and did not know how to follow some local guidelines that were sometimes ambiguous. Even worse, they felt desperate about the guidelines and rules that were constantly changing. Moreover, some features of providing care in this pandemic caused more challenges, pressure, and fatigue, such as the need for using PPE and additional cleaning. One of the nurses (15) who provided care in the ICU described:

"...It is very important to know in what environment we are going to provide care. For example, in the ICU, special protection is required when providing routine intensive care

and airborne precaution, especially when we are performing procedures that create aerosols. the care setting is very important. Well, it is the area that requires special attention....”

Other issues were the ethical and emotional challenges when choosing a patient to be connected to the ventilator, observing the death of patients alone and away from their families, observing the infection of colleagues and, sometimes, their death, and observing sudden deaths of young patients who were able to speak for up to an hour before death, and seeing differences in clinical signs and prognosis in different cases of COVID-19; these were all unique features of the pandemic which were mentioned by the participants. Therefore, familiarity with this atmosphere is so essential that requires special attention and training. Participant (11) mentioned:

“...When I was providing care in the COVID-19 pandemic, everything was so different for me from the normal setting in a way that I continuously thought I needed to be trained beforehand. You cannot visualize the setting, no matter how much you think you are prepared for that. That setting is not an emergency environment. That setting is not a normal work setting...”

The importance of educating all those involved in providing services in the COVID-19 pandemic

Healthcare providers work as a team; therefore, it is not possible to expect only one of them to be trained and educated. It is necessary that all people who play a role in the healthcare delivery process, even if in small roles, receive special training on COVID-19. Therefore, education should be done in the form of multidisciplinary exercises and drills. participants mentioned that it is important to train all the staff. Ordinary services personnel, patient transport personnel, kitchen staff, support staff, and security personnel should be trained in the field of infection control, wearing PPE, and prevention of the spread of the virus. Interprofessional training and collaborative activities between health professionals are needed to combat the pandemic. Participant (7) described:

“...Training all individuals is important. Nurses do not work in a vacuum; for instance, even transport systems are very important, including ambulances and vehicles that are there. Training these drivers is, in itself, one of the important issues in this field...”

The need for providing immersive education for the COVID-19 pandemic

Nurses pointed out the high burnout in the pandemic. The special circumstances of the pandemic necessitated comprehensive education. The education cannot include only the principles of care, diagnostic sample preparation, prevention of disease, and infection

control. Rather, we need to consider other issues in our education. One of these issues is the need to pay attention to maintaining the mental health of nurses, because, otherwise, we may lose our professional staff over time. Teaching ways to increase resilience should be provided and repeated for the nurses. This education can be done easily. For instance, taking care of good nutrition, having adequate rest as much as possible, creating short breaks between shifts, having time to go out of the ward, taking a deep breath, meditating, or praying can all help nurses maintain their mental health and reduce their fatigue. Fatigue itself can increase the likelihood of errors and mistakes, and it would be dangerous to their health. Supporting nurses with such training can easily increase their psychological security and their support for each other. Participant (21) mentioned:

“...I have to consider everything at the same time. Well, there is a lot of work pressure on us. we have to work long hours because many of our colleagues get sick and cannot work. Sometimes, due to a lack of PPE, I cannot go to the bathroom for a whole shift because if I take off my clothes, I have no other clothes to wear. also, we should be able to take care of our family, but before that, we must stay healthy. Every time I go home, I'm afraid to hug my baby, I'm afraid to infect him. All this causes us to endure a lot of pressure...”

The need for planning and practice concerning the COVID-19 pandemic

Regular planning allows people to know what is expected from them and which services they should prepare at the time of a pandemic like COVID-19. The nurses stated that to manage the situation, it is necessary to plan and practice the principles of prevention, infection control, and teamwork skills. Concerning this pandemic in recent months, nurses said they had become more realistic over time. Almost all of them mentioned that preparation and having a specific plan were their most important needs. They stated this preparedness as the knowledge, skills, abilities, and all-around functionality necessary to respond to and manage critical conditions. Acquiring knowledge of pandemic management, response planning strategies, response behavioral exercises, evaluation of the level of knowledge, and content of the response plan, clinical management of patients, training, and retraining of infection control principles as well as proper use of PPE were among the issues that were considered to be essential. One of the participants (28) described:

“...We do not know how long this pandemic is going to last. Every day, new news comes that contradicts yesterday's news. The more time passes, the more we realize that we know nothing about this disease. Situation management is only possible with planning and practice. With this planning and practice, we must all go to the war against this pandemic and learn from what has happened; next time, be ready for future epidemics...”

Discussion

The necessity of holding continuous training workshops shows that nurses need to be constantly trained so that they are always prepared for a disaster like the COVID-19 pandemic. The results of McNeill *et al.*'s^[23] study showed significant weaknesses in nurses' professional preparation skills. They reported nurses across the United States lacked immediate professional training and not only did they lack adequate professional training, but nurses' training needed to be improved to meet the needs of the population in an emergency. Nurses' preparedness in emergencies and disasters is an everlasting process with no endpoint. Regarding nurses' key role in responding to disasters, preparedness for these situations provides nurses with the capabilities and skills needed for defending sufferers, their families, and themselves.^[7,24]

Continuing training for nurses as one of the most important factors affecting nurses' competencies in response to disasters.^[25,26] The necessity of holding exercises in the same environment was another challenge. One of the measures that can be applied to expand disaster preparedness in nursing students is to conduct basic training on disaster management and disaster simulation.^[25,27-29] Farhadloo *et al.*^[30] discussed educating with the simulation method on the mockup model is efficient in nurses' preparedness for triage skills during emergencies. Simulated response behaviors identify the gaps between programs and real situations and indicate the parts needing a change.^[7]

The importance of familiarity with the environment of the COVID-19 pandemic is another challenge for nurses' preparedness. Sun *et al.*^[31] showed that nurses experienced many feelings such as negative feelings, which involved tiredness and helplessness resulting from working under high pressure, fear, anxiety, and concern for family members. Houghton *et al.*^[32] emphasized healthcare workers felt uncertain about guidelines and they could feel speechless regarding local guidelines that were continuously changing. They believed training on PPE, infection protection, and IPC guidelines should be increased and must be mandatory. Yale *et al.*^[10] stated, that for healthcare workers in ICU, some additional advanced protection is essential in addition to routine intensive care. They discussed some extra precautions that should be provided, especially during aerosol-generating procedures although additional PPE can rise the danger of sharp injuries and increase the trouble of donning and doffing.

The importance of educating all those involved in providing services in the COVID-19 pandemic was another important challenge. Aldridge^[33] noted the

level of knowledge and awareness of all staff should be continuously monitored and training related to policies, procedures, and protocols of the relevant hospital should be provided to them. Houghton *et al.*^[32] found out that healthcare workers pointed out that all staff must be considered when implementing IPC guidelines, including cleaning staff, porters, kitchen staff, and other support staff. Prihatiningsih *et al.*^[34] reported interprofessional education and cooperative practices are required for health professionals to battle natural disasters.

Another challenge was the need for providing immersive education for the COVID-19 pandemic. Brucker^[8] mentioned the special atmosphere, in which the nurses provided healthcare during the COVID-19 pandemic. She mentioned some factors like mental health and resilience as highly important in such situations, recommending several applicable interventions many of which were in the findings of the present study as well. Bukhari^[35] described some factors as valuable for public and front-line health workers in this pandemic. He recommended personal protective measures (handwashing, face masks, respiratory etiquette, surface, and object cleansing), social distancing, and travel measures. He also underscored having a balanced diet, vitamin supplements, and appropriate night's sleep as the factors which can increase the health of the immunity system. Chersich *et al.*^[36] noted medical staff caring for COVID-19 patients encounter mental stress, physical exhaustion, separation from families, stigma, and pain of losing patience and colleagues.

The need for planning and practice concerning the COVID-19 pandemic was another challenge. Glasper^[37] discussed many of the nurses currently providing special care to COVID-19 patients are uncritical care nurses. During the pandemic, the demand for intensive care nursing capacity will increase exponentially over time, but nurses will not have enough time to undergo traditional training. He believed alternative ways must be planned to build the necessary skills and capacity of nurses. Team efficiency, strong and reliable relationships, expertise, and the support and skills of all team members can be very effective in his opinion. In Korea, Park^[38] reported, that there are some changes to individuals' use of PPE recommendations that suggest options for choosing PPE for respiratory and body protection. Understanding the standards is the key to choosing the right PPE that requires proper training and education. The WHO recommended that health workers' training and retraining and clinical management are essential for COVID-19 in particular. There is a need to plan to increase the capacity of healthcare by providing respiratory support, PPE, and IPC resources.^[39] Furthermore, the Centers for Disease Control and Prevention^[40] advised several points related

to this pandemic like training programs to expand the education of healthcare providers as well as job-specific training plans and materials for healthcare providers.

Limitations and Recommendations

Because of some social distancing rules, some of the interviews were performed by phone (6 interviews). It was difficult to conduct telephone interviews and communicate well with participants, and non-verbal cues were lost in these cases. However, the researchers tried to compensate for this limitation by conducting face-to-face interviews as much as possible. It seems future studies need to explore other aspects of nursing responses and also other healthcare providers.

Conclusion

Nurses are expected to provide healthcare for COVID-19 patients in unknown processes and conditions which are dangerous and chaotic. The results showed that nurses might learn lessons from the previous epidemics to become resilient. Particularly, nurse managers may support nurses and increase hospital resilience in such emergencies. When nurses receive more support, they can do their best. In addition, continuous and up-to-date training can prepare nurses more effectively, which will, in turn, make prepared nurses available, maximize the efficiency of this group and minimize their adverse mental consequences. Nurses indicated some issues including managers' support, workplace culture, education, physical space, access to PPE, and willingness to provide the best care. These findings can be helpful in the management of the pandemic and preparing nurses as a large group of healthcare workers. Necessary training, along with the provision of adequate PPE and human resources, should be programmed to support this effective group of health providers.

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Conflicts of interest

There are no conflicts of interest.

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