



# Evaluation of Nurses' Challenges during Coronavirus Outbreak: A Qualitative Study

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## Abstract

**Background:** During the crisis of communicable diseases, nurses play an important role in controlling the disease and treating patients; therefore, the obstacles and challenges facing these medical personnel should be reduced.

**Objectives:** The main goal of the present study was to evaluate the challenges faced by nurses during the Coronavirus Disease 2019 (COVID-19) pandemic.

**Methods:** This qualitative study was conducted using the content analysis approach in 2021-22 in the city ABC. The participants in this study were 30 people who were selected from 10 different hospitals and included nursing managers (n=10), supervisors (n=10), and nurses (n=10). Sampling was done purposefully and continued until the information saturation point. Semi-structured in-depth interview was used individually based on the interview guideline to collect data.

**Results:** The results showed that the challenges faced by nurses during the COVID-19 pandemic included 452 codes and 12 subcategories, which after the final classification of the data, 4 main challenge categories were obtained, which included human challenges (33 subcategories), financial challenges (15 subcategories), communication challenges (8 subcategories), and organizational challenges (27 subcategories).

**Conclusion:** Based on the results of the present study, it can be concluded that the challenges faced by nurses during the COVID-19 pandemic included human, financial, communication, and organizational obstacles. Recognizing the challenges can help formulate road maps and strategies for improving disaster preparedness and management in hospitals.

**Keywords:** Challenges, Coronavirus, Nurses, Nursing care, Outbreak, Qualitative study

## 1. Background

Coronavirus disease 2019 (COVID-19) is a respiratory disease that can be transmitted from person to person. The virus that causes COVID-19 was first identified in December 2019 during special research in Wuhan, China, and led to acute and very severe respiratory syndrome (1). Due to the high rate of spread and its consequences on an international scale, when the first infected person was observed in Canada in March 2020, the World Health Organization declared COVID-19 as a pandemic phenomenon. COVID-19 probably has an animal origin that has a high ability to be transmitted from human to human (2). Based on the published reports related to the first death of hospital personnel, it was found that the coronavirus is easily transmitted from patients with COVID-19 to healthcare personnel, and therefore, the self-care of medical personnel is very necessary (3).

Regarding the importance of the high risk of transmission of COVID-19 from patients to medical personnel, it can be said that on February 11, 2020, a report was published by the Center for Disease Control and Prevention in China, according to which, at that time, out of 44,672 confirmed cases with COVID-19, 1716 people were healthcare workers (4).

Healthcare workers during pandemic outbreaks

are expected to work long hours and under high pressure with insufficient resources and facilities, as well as accept inherent risks related to close interaction with patients (5). In addition, healthcare personnel, similar to the general public, face problems, such as being vulnerable to COVID-19, as well as rumors and misinformation, which lead to increased levels of anxiety. The aforementioned level of anxiety in medical personnel increases when that person observes the illness or death of colleagues (6).

In general, healthcare workers who are exposed to COVID-19 are also under severe psychological stress since at the beginning of the outbreak, the number of COVID-19 cases was increasing rapidly. This caused the fear of the general public, and therefore, all health-treatment centers were used as hospitalization places for confirmed or suspected patients with COVID-19 (7). Therefore, a large number of people visiting healthcare centers, especially hospitals, caused anxiety and stress among healthcare workers. A significant percentage of doctors and nurses working in Chinese hospitals during the COVID-19 pandemic suffered from depression (50.4%), anxiety (44.6%), insomnia (34%), and distress or agitation (71.5%) (8).

Medical staff in Wuhan, China, who worked in the internal ward of the hospital showed higher levels of obsessive-compulsive symptoms, anxiety,

interpersonal sensitivity, and lower levels of social support and resilience than the medical staff who worked in other departments (9). In addition, that study reported that caring for healthcare workers with COVID-19 (as patients) was emotionally and psychologically difficult for them. Moreover, stigmatization and interpersonal isolation were major concerns of medical staff (10).

Based on the research conducted on medical staff during the outbreak of H1N1 influenza in European countries, medical staff faced challenges including poor communication among medical staff, high volume of referrals, poor supervision, and lack of equipment in the intensive care unit (11). Among the many components of crisis management, the most important role is played by medical centers, especially hospitals. Providing plans for preparedness and strategies to deal with crises can have significant effects in reducing casualties caused by disasters (12, 13).

Nurses make up a large proportion of the healthcare population and have higher contact with patients with COVID-19 than other medical personnel; therefore, nurses have a prominent role in crisis management. As a result, it is necessary to evaluate the challenges faced by nurses to manage health-related crises at the global level.

## 2. Objectives

According to the aforementioned points, the main goal of the present study was to evaluate the challenges faced by nurses during the COVID-19 pandemic.

## 3. Methods

### 3.1. Sampling

This qualitative study was conducted using the conventional content analysis approach in 2021-22 in the city ABC, China. Sampling in this study was done in a purposive method, and then, the theoretical sampling method was used to enrich the data and continued until data saturation. The participants in this study were 30 people who were selected from 10 different hospitals and included nursing managers (n=10), supervisors (n=10), and nurses (n=10). Inclusion criteria were work experience in the COVID-19 ward for at least one month, work experience of more than three years in the hospital, official recruitment, the absence of a tragic accident (e.g., the death of a first-degree relative during the study), and having a bachelor's or master's degrees in nursing or a doctorate.

On the other hand, those who did not have at least 3 years of work experience, the individuals who were absent in more than two sessions in meetings, the participants who had no work experience in the COVID-19 ward, those who were unwilling to

continue participating in the study, and the cases who had a tragic event (e.g., the death of a first-degree relative during the study) were excluded from the study.

### 3.2. Data collection

In order to collect data, a semi-structured in-depth interview was used individually based on the interview instructions. At the beginning of the research, the interview process and the purpose of the study were explained to the participants. After receiving the written consent and observing the ethical considerations including keeping the information confidential and the participants' right to withdraw from the research at any time, the interviews were conducted and recorded with a recorder. All interviews should be done face-to-face in a calm environment according to the opinion of the participants.

According to the conditions and interests of the interviewees, the duration of the interviews lasted between 45 and 60 minutes. The number of interviews continued until no new data was added to the previous data. In other words, information saturation was achieved. Considering the main purpose of the research, general questions were asked of the interviewees: "Can you explain your experiences in nursing management during the COVID-19 pandemic? Can you explain the challenges you faced in the nursing management sector during the COVID-19 pandemic?"

Then, more detailed questions were asked: "Can you explain more?" Other methods of data collection were field notes and non-structural observations that intended to analyze the resulting data.

### 3.3. Data analysis

The data obtained from qualitative content analysis were analyzed in accordance with the study of BM Lindgren, B Lundman, and UH Graneheim (14). After completing each interview, it was immediately written in the WORD file in the Microsoft Office Program. The researchers simultaneously performed data collection, coding, and analysis processes. To classify data, initially, the raw data were converted into semantic units. After that, at the primary coding stage, the raw data were divided into units that had similar meanings or qualities. Afterward, coding was done to distill and summarize the mass of information obtained from interviews and documents. Continuous comparison was made in all analysis processes and the difference between the original codes was diagnosed. In the following, similar codes were arranged and conceptualized in a similar class (15). To evaluate the quality of the findings from the criteria of accuracy in content analysis, the methodology presented in Ganapathy M (2016) was used (16). Finally, the findings of the study were reviewed and approved by two

researchers.

#### 4. Results

According to the obtained results, the majority of the nurses were female (n=20; 66.7%). Regarding the age of the nurses, 12 (40%), 10 (33.3%), and 8 (26.4%) nurses were in the age groups of 25-35, 36-45, and 46-55 years, respectively. In terms of education level, 18 (60%) and 12 (40%) nurses had bachelor's or master's degrees, respectively. The work experience of participants in terms of years showed that 4 (13.3%) nurses had work experience of fewer than 10 years, 15 (50%) nurses had a work experience between 10-20 years, and 11 (36.7%) nurses had the work experience of more than 20

years. Considering the organizational position of the cases, there were nurses (n=15; 50%), nursing managers (n=8; 26.7%), and supervisors (n=7, 23.3%) (Table 1). The results also showed that the mean±SD values of the respondents' age and work experience were 39.9±7.8 and 14.8±7.1 years, respectively. The challenges facing the nurses during the COVID-19 pandemic consisted of 452 codes and 12 subcategories, which were summarized into 4 main challenges after the data categorization. These challenges included "human challenges", "financial challenges", "organizational challenges", and "communication challenges", which are presented in Tables 2 to 5.

**Table 1.** Demographic characteristics of the participants

Demographic characteristics		Frequency	
		Number	Percentage (%)
Gender	Male	10	33.3
	Female	20	66.7
Age group (year)	25-35	12	40
	36-45	10	33.3
	46-55	8	26.7
Level of education	B.Sc.	18	60
	M.Sc.	12	40
Work experience (year)	<10	4	13.3
	10-20	15	50
	>20	11	36.7
Organizational position	Nursing manager	8	26.7
	Nurse	15	50
	Supervisor	7	23.3

\*B.Sc.: Bachelor of Science, M.Sc.: Master of Science

**Table 2.** Human challenges facing nurses during the COVID-19 pandemic

Challenge type	Subcategory	Key codes
Human challenges	Support	Restrictions on compensating personnel services.
		Lack of financial support from upstream organizations.
		Insufficient support for personnel.
		Inadequate motivation for personnel.
		Disregard for staff dissatisfaction.
		Not paying special wages for COVID-19.
	Commitment	Unfair payments.
		The large number of managers in decision-making.
		Inadequate responsibility of managers.
	Culture	Frequent replacement of managers.
		Inadequate commitment of some personnel to their organization.
		Inappropriate culture of long-term planning.
Employee management	Management of patients at the hospital	Inadequate importance to the issue of crisis management by managers.
		The importance of prioritization to meet the essential needs of personnel and managers.
		Lack of manpower.
		The high number of contractual manpower.
		Contract cancellation of contractual manpower.
		Retirement of a high number of formal manpower.
	Employee management	Abandoning and escaping some formal manpower.
		Using new and inexperienced manpower.
		Personnel burnout.
		Anxiety and fear of employees of an unknown illness.
		Personnel fatigue.
		Creating work stress on personnel.
Management of patients at the hospital	Hard work conditions.	
	Falling ill of personnel with COVID-19.	
	Falling ill of personnel's family members with COVID-19.	
	Long and stressful work shifts.	
	The presence of underlying diseases in personnel.	
	Limitations on receiving work leave by personnel.	
		Limited admission of patients.
		Not having proper planning for the presence of patients in the hospital.

For the content analysis process, first, the interviews were read several times, and then, the semantic units were identified and coded. The number of obtained raw codes was 248 codes, and after the reduction process, their number reached 81 codes. Primary codes with similar semantic load were placed next to each other, and 14 subcategories were obtained, and in the process of conceptualization, 4 main categories were obtained, which were the study themes. The main categories obtained were human, financial, organizational, and communication challenges (Table 2).

4.1. Human challenges

The human challenges that existed during COVID-19 had the characteristics of support, commitment, culture, as well as employee, hospital, and patient management.

One of the contributor quotes about support is as follows:

*"...During the outbreak of COVID-19, unfortunately, the authorities did not pay attention to our statements and demands. That is, they practically did not support us at all. Our working conditions had become very difficult; they did not allocate helpers or provide financial support."*

The lack of two-way commitment of the organization towards the employees and also the employees towards the organization caused serious challenges for both sides and ultimately for the patients.

In this regard, a participant says:

*"...During the COVID-19 pandemic, there was a kind of fun among the personnel and managers, and everyone was thinking about himself. Managers could not make the right decisions and sometimes their wrong decisions caused complications for both the*

*organization and the patients."*

Organizational culture problems caused serious challenges for the organization and employees. The quote from one of the contributors is as follows:

*"...Our managers did not know how to plan for the future. That is, they did not believe in what to do for the next peak of the disease."*

Among other characteristics of human challenges, we can mention the inappropriate management of human resources, patients, and the hospital as a whole. In this regard, one of the participants says:

*"...The number of our shifts was very high and difficult due to the spread of COVID-19. We had a high workload, and a lot of pressure was imposed on us. The managers could not do anything for us, that is, they did not want to."*

*"...Also, regarding the patients, due to a large number of patients and their bad conditions, unfortunately, bad conditions were created, there were not enough beds, and the officials were helpless in the crisis situation."*

4.2. Financial challenges

During COVID-19, the financial challenges that affected the working conditions of nurses and the organization were the financial problems that led to the inability to support the employees and also provide medicine and equipment for the patients (Table 3). One of the participants' statements about the problems related to financial resources is as follows:

*"...Financial resources were extremely limited; there was no money to pay the demands of the employees or even to buy equipment and medicine for the patients, as a result, personal protective equipment could not be provided to the workers on time."*

Table 3. Financial challenges facing nurses during the COVID-19 pandemic

Challenge type	Subcategory	Key codes
Financial challenges	Financial resources	Limitation in financial resources. Failure to quickly meet financial needs and requests. Not providing financial resources on time. Reducing the financial income of hospitals. Insufficient equipment. Failure to provide equipment on time. Depreciation of systems and capital equipment.
	Equipment	Improper ventilation system of different departments of the hospital. Insufficient number of ventilators and breathing apparatus. Lengthening of the procurement process due to administrative bureaucracy. Poor support systems. Inadequate equipment supports to deal with COVID-19. Lack of drugs to treat COVID-19. Lack of beds for admitting patients with COVID-19.

4.3. Organizational challenges

The challenges that existed within the organization were related to the organization itself, rules and regulations, planning, training, and practical training to gain experience. In a way that extra-organizational factors were creating financial problems for hospitals, these factors caused

inappropriate budget allocation and mismanagement at the level of the Ministry of Health. Furthermore, the problems of organizational bureaucracy and the dominance of relationships instead of rules caused many problems for the organization. During this period, one of the problems within the organization was the inability to plan, or wrong and incomplete

plans, which, if a plan was made, it would take a long time to be implemented. Training of personnel and the existence of training programs to improve the level of knowledge and skills of personnel were either non-existent or if there were, they were not effective (Table 4).

In this regard, one of the participant's quotes is as follows:

*"...The hospital could not provide us with suitable personal protective equipment, or if we requested, they would provide defective equipment, and sometimes it took a long time for the head to order."*

Another contributor says about the challenges of employee training and experience:

*"...Unfortunately, when the colleagues got sick, the number of forces decreased and the number of our shifts increased. Then, the new recruits who came to work did not have enough experience, and the hospital's training officer could not train them, and these things caused complications for colleagues and*

*patients."*

#### 4.4. Communication challenges

Among the characteristics of communication challenges during the outbreak of COVID-19, we can mention the communication and coordination problems of managers and employees with each other, as well as the challenges of managing medical information. During this period, the managers did not have a close relationship with each other and with the employees, or they did not have communication and coordination with extra-organizational managers and other hospitals to exchange experiences and forces. In addition, during this period, there were challenges regarding the lack of use or the range of use of advanced computer and communication systems since online technology tools and medical information management systems were not prepared (Table 5).

**Table 4.** Organizational challenges facing nurses during the COVID-19 pandemic

Challenge type	Subcategory	Key codes
<b>Organizational challenges</b>	Organization	Improper budget allocation at the macro level. Inappropriate management at the macro level, especially at the level of the Ministry of Health. Salary difference between working time and retirement time.
	Laws and regulations	A lot of insistence on following the path of bureaucracy. Going through the time-consuming and long bureaucratic process. Occupying the organizational table with inefficient manpower. Working relationally instead of working legally. Lack of a comprehensive plan to deal with the crisis. Lack of purposeful planning. Not having a regular plan to deal with pandemic diseases.
	Planning	Weakness in planning. Inadequate implementation of developed plans. Long distance from a decision to implementation. Inadequate supervision in compliance with standards and criteria. Inadequate monitoring of program progress. The need to evaluate weaknesses and strengths in dealing with previous crises.
	Education	Inadequacy of training courses by nurses. The necessity of training new personnel. Insufficient knowledge of hospital managers and nursing managers. Weak education system. Non-targeted training of nurses. Lack of reliable scientific references on how to care for COVID-19 patients.
	Practical training to gain experience	Variability of health, care, and treatment protocols. Inadequate experience of new nurses. Inadequate skill and experience training. Insufficient experience of old nurses. Acting on personal experiences.

**Table 5.** Communication challenges facing nurses during the COVID-19 pandemic

Challenge type	Subcategory	Key codes
<b>Communication challenges</b>	Communication and coordination	Inadequate interaction of hospitals with each other during the crisis of pandemic diseases. Failure to share nursing forces between hospitals in crises. Inadequate interaction of hospital nursing managers with each other. Inappropriate extra-organizational coordination by nursing managers.
	Medical information management	Existence of security and protection issues. Restrictions on the use of new technologies. Absence of online systems in health care centers. Improper recording of executive processes in crisis management.

In this regard, one of the participants says:

*"...In our hospital, when there was a lack of staff, the head and matron of the hospital did not ask for help and staff from other hospitals of the university,*

*which were not the center for the hospitalization of COVID-19, and this increased our workload."*

Another consultant says about modern medical information systems:

*"...In hospitals in European countries, computer and tablet systems are used for patient records. In such a way that the nurse does not spend a lot of time writing the patient's file and registers things by ticking the system and can devote more time to taking care of the patients."*

## 5. Discussion

The results showed that the most important challenges faced by nurses during the COVID-19 pandemic included human, financial, communication, and organizational challenges. Human challenges included the subcategories of "support", "commitment", "culture", "staff management", and "patient management". In the "support" subcategory, the most important challenges included insufficient compensation for personnel services, lack of support from higher-level organizations, disregard for personnel dissatisfaction, and unfair salaries and wages. The above-mentioned obstacles cause more dissatisfaction and reduce nurses' motivation (17). In the "commitment" subcategory, the most important challenges included multiple managers in decision-making, insufficient responsibility of decision-making managers, frequent change of managers, and insufficient commitment of nurses and managers to the organization. The aforementioned factors make the personnel and managers discouraged from their organization and this causes their job security to be affected.

Being discouraged from working as well as not having job security reduces the level of commitment of personnel and managers to their organization (18). Nursing managers should always try to maintain the morale of their employees. Organizational support helps nurses to make ethical decisions and increase their commitments, all of these factors reduce their job stress (13).

Regarding the subcategory of "culture", various challenges were expressed by the respondents, which included the lack of long-term planning, insufficient attention of managers to crisis management, and lack of prioritization of essential needs by personnel and managers. According to the results, it can be said that it is necessary to provide special training to nurses and nursing managers in times of crisis, especially pandemic diseases (19).

Regarding the subcategory of "staff management", various challenges were presented, including the lack of manpower, the high number of contracted manpower, leaving the job by some personnel, the employment of untrained and inexperienced personnel, burnout of nurses, anxiety, and fear of unknown diseases that creates stress and anxiety in nurses, the possibility of nurses and their family members contracting COVID-19, and a long time in each working shift. Based on the findings of the present study, hiring the number of manpower in proportion to the number

of hospital beds and using methods to reduce anxiety and stress in nurses during the pandemic diseases are the most important actions that should be taken. The shortage of nurses leads to an increase in the duration of the work shift, and as a result, causes stress, anxiety, and burnout (20).

In addition, the results showed that the limited capacity of patient admission and lack of proper planning for the admission of patients in the hospital were the most important challenges related to the subcategory of "management of patients to the hospital". Due to the fact that most hospitals are not equipped and built for crisis conditions, it is very necessary to increase hospital facilities, especially inpatient beds (21).

The results showed that the financial challenges included the subcategories of "budget" and "equipment". In the "budget" subcategory, the most important challenges included the limitation of financial resources, the lack of timely and quick financial resources, as well as the decrease in the hospital's income. In addition, the inadequacy of hospital equipment, exhaustion and low efficiency of hospital equipment, and lack of medicine and hospital beds for patients with COVID-19 were the most important challenges related to the "equipment" subcategory. Accordingly, it is necessary to increase the equipment and medicines in the hospital, as well as renew the old and worn-out equipment in different hospital departments (22).

Organizational challenges included "organization", "laws and regulations", "planning", "training", and "practical training to gain experience". The most important challenges related to the "organization" subcategory included the inappropriate allocation of funds and inappropriate management in the Ministry of Health and Treatment, as well as the large difference in salaries between working time and retirement. An insistence to go through the long and time-consuming path of bureaucracy, occupying the organizational position with ineffective manpower, and non-compliance with work rules were among the most important challenges related to the subcategory of "laws and regulations". For the "planning" subcategory, there were various challenges, including the lack of a comprehensive plan to deal with the crisis, the lack of targeted planning, the lack of a codified plan to deal with pandemic diseases, weakness in planning, and the lack of proper implementation of the prepared plans. There was a lot of distance between the decision-making and implementation stages, insufficient supervision in compliance with standards and criteria, insufficient monitoring of the progress of programs, and the need to evaluate strengths and weaknesses in dealing with previous crises. Regarding the subcategory of "education", the findings of the present study showed that there were various challenges in this regard, including the

inadequacy of training courses for nurses, the need to train new nurses, insufficient knowledge of hospital managers and nursing managers, lack of guidance in training nurses, the lack of reliable scientific references about how to care for COVID-19 patients, as well as the variability of COVID-19 prevention protocols and the care of COVID-19 patients. In addition, the insufficient experience of new and old nurses, insufficient skill and experience training, and acting based on personal experiences were the most important challenges of the subcategories of "practical training to gain experience". Based on the aforementioned results, providing appropriate planning and strategy for crisis conditions, especially during pandemic diseases, is one of the most important measures that must be taken by hospital managers and nursing managers. (23, 24).

Some subcategories included "communication and coordination" and "medical information management" as communication challenges. Regarding the subcategory of "communication and coordination", various challenges were expressed by the respondents, the most important of which include the insufficient interaction of hospitals with each other during the crisis of pandemic diseases, the lack of sharing of nurses between hospitals in crisis conditions, the insufficient interaction of nursing managers with each other, and inappropriate extra-organizational coordination by nursing managers. In addition, the findings showed that some obstacles, such as the existence of security and protection issues, the limitation of the use of new technologies, the absence of online systems, as well as the improper registration of crisis management executive processes were the most important challenges related to the subcategory of "medical information management". According to the findings of the present study, it is necessary for hospitals to coordinate with each other in order to increase the ability to manage crises and use online systems and new technologies (25, 26).

Lee (2016) through interviews with experts in the field of crisis and disaster management in Nepal, found that the weakness in leadership and guidance of various organizations in crisis conditions was one of the most important challenges faced by managers during the crisis (27).

The results of a study by S Hamouche (2021) showed that giving disaster management instructions to all the personnel of a particular organization is not an easy task, and financial payments to personnel in times of crisis are challenging. In addition, the employment of personnel during the shutdown resulting from crisis conditions is an important management challenge in dealing with the crisis (28). The study by Mascha et al. (2020) showed that the lack of specialists, as well as medical and care staff, especially nurses, is one of the main challenges in

effectively dealing with the COVID-19 crisis (29). The lack of the number of nurses in proportion to the number of patients leads to the increase in mandatory working hours and the cancellation of many personal and recreational programs for nurses (30).

Sun et al. (2020) reported that with the increase in the working hours of the personnel and the lengthening of their work shifts in the hospital, as well as the closure of infant and child care centers, nurses are facing various problems and issues in taking care of their children and other family members (31). The study by Labaf et al. (2021) showed that the lack of preparation to face the epidemic crisis of diseases, the lack of control of the amount of consumption, as well as the lack of evaluation of the authenticity and standard of personal protective equipment and medicine, the lack of organization of volunteers as nurses or other medical personnel, the existence of problems in the salaries and wages payment system, lack of adequate financial resources, and the fear of healthcare personnel from contracting COVID-19 were among the most important challenges facing nurses during the COVID-19 pandemic crisis in Iran (32). The results of all the aforementioned studies are consistent with the findings of the present study and indicate that the challenges facing nurses and nursing managers worldwide are almost similar.

Considering that COVID-19 and other diseases are health threats to the whole world, it is necessary to improve the level of knowledge and use effective strategies to manage (33).

### 5.1. Limitations of the study

This study had several limitations. Some samples did not want to participate in the study due to working conditions and time constraints. Moreover, due to the presence of the interviewer in the hospital and the restrictions imposed due to the outbreak of COVID-19, it was difficult to coordinate and conduct interviews. The registration of participants by qualitative method limited the generalizability of the results. Work fatigue may have a negative effect on nurses' participation. However, the research team sought to reduce these limitations by following them continuously and conducting several interviews during their free time.

## 6. Conclusion

Based on the results of the present study, it can be concluded that the challenges faced by nurses during the COVID-19 pandemic included human, financial, communication, and organizational obstacles. Recognizing the challenges can be helpful in formulating road maps and strategies for improving disaster preparedness and management in hospitals. In addition, understanding the challenges of the

COVID-19 pandemic can be useful in increasing preparedness in the face of future crises. Therefore, it is necessary to take appropriate measures in order to reduce challenges and limitations according to available resources and facilities. According to the limitations of the study, in the next studies, sampling should be done in different medical centers, and for more generalization of the results, a larger sample size should be used.

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## Footnotes

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