



# Nursing Challenges during COVID-19 Pandemic: Lesson Learned for the Future Crisis

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## Abstract

**Introduction:** Health systems have been exposed to innumerable challenges by COVID-19. The present study aimed to detect nursing challenges during the COVID-19 pandemic.

**Methods:** This qualitative study was conducted in 2021; 26 subjects were selected using the purposive sampling method and interviewed. Data saturation was reached after analyzing the data collected from 26 semi-structured interviews. The collected data were analyzed using the content analysis approach with MAXQDA software version 10.

**Results:** Three main themes and some subthemes were extracted: “Managerial challenges,” “Educational challenges,” and “Individual challenges.” Some managerial challenges encompassed the following subthemes: lack of adequate workforce and equipment, non-timely payment of claims, and employment of non-specialist personnel instead of nurses. Educational challenges encompassed the following subthemes: virtual training, lack of training, lack of training on commitment to the profession, lack of training to work in particular wards and training in dealing with critical patients. Furthermore, some individual’s challenges contained the following subthemes: decreased job motivation, fear of illness, stress, and anxiety.

**Conclusion:** An analysis of the themes and subthemes in this study indicated that there were managerial, educational, and individual nursing challenges during the COVID-19 pandemic. It is, therefore, recommended that policymakers and senior managers of the health system formulate and implement programs at the micro- and macro-levels to address the detected challenges.

**Keywords:** Nurses, Pandemics, COVID-19, Qualitative research

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## Introduction

Coronavirus disease (COVID-19) is an acute respiratory infection caused by a specific virus called SARS-COV-2 (1). The whole world is now involved in the fight against this virus (2); however, its control and treatment methods are limited due to the unknown nature of this virus (3). Such incidents and crises are one of the main challenges in different countries, and what is essential during their emergence is how senior managers, experts, and the public deal with them as this issue would determine the future state of the crisis (1). Despite the introduction of different types of vaccines and the widespread vaccination in many countries, the public’s infection prevention and control and the observance of hygienic principles are unavoidable as long as the complete eradication of the COVID-19 pandemic is observed (4).

As the front-line forces against COVID-19, the

medical staff are at risk of exposure to this virus (5). Among the medical staff, nurses are one of the occupational groups in direct contact with COVID-19 patients as they are in contact with these patients from admission to discharge (6). Nursing is intertwined with clinical knowledge and skills to meet the patients’ needs (7), with nurses forming the largest group in the health care system, whose operations account for many care outcomes (8). Nurses’ exposure to COVID-19 in the workplace has caused many challenges and problems for them (9). Sun et al. (2020) reported that nurses face significant psychological challenges such as discomfort, helplessness, fear, and anxiety during the COVID-19 pandemic (10). In their study, Geremia et al. (2020) detected the challenges of managing nursing services during the COVID-19 epidemic and reported that epidemiological factors, working conditions, and care management in a pandemic affected the nurses’

performance (11). Goes et al. (2020) also emphasized some other nursing challenges during the COVID-19 pandemic, including lack of protective equipment, training, diagnostic tests, and knowledge/information concerning the disease (12).

Further management and planning are required for the nurses' exposure to a wave of patients referring to hospitals for COVID-19; hence, nursing challenges must be examined and recognized to establish a safe care system to respond to pandemics such as COVID-19 effectively. Moreover, some strategies need to be developed to support the desired quality of nursing services to reduce the negative consequences of the crisis and promote the efficiency of the health system. Accordingly, this study aimed to explain the nursing challenges during the COVID-19 pandemic.

## Methods

### *Research Design and Participants*

This exploratory study used the inductive logic and was conducted qualitatively in 2021. The research setting consisted of state hospitals affiliated with Iran's Ministry of Health and Medical Education, treatment centers concerned with COVID-19 disease. The study population encompassed hospital heads, internal managers, nursing managers, supervisors, and authorities of different wards of the mentioned hospitals. The non-random sampling method was considered to detect knowledgeable individuals involved in COVID-19 disease management. In this study, the snowball sampling method was used to interview some other individuals, if needed.

### *Procedure*

In the present study, semi-structured interviews were performed virtually via Skype software (Online) to observe hygienic principles and prevent the possible transmission of COVID-19 diseases to collect the data. After obtaining verbal consent at the start of the interview session, the interviews were recorded. At the beginning of the interviews, questions were asked about how nursing services were provided during the COVID-19 crisis. The interviews then continued based on the objectives of the research.

The study obtained trustworthiness, rigor, and credibility using continuous research and reviews (conducting interviews as long as the main themes emerged) and data reviews and analyses using peer and member checks.

### *Data Analysis*

The thematic analysis method was used to analyze the data. Content analysis is a technique to detect,

analyze, and report patterns in qualitative data. This method analyzes the textual data and converts scattered and diverse data into rich and detailed data (13). The theme is a repetitive and distinctive feature in the text and reveals a particular understanding and experience to researchers regarding research questions (14). In this study, to analyze the data, after listening to each interview several times and reading the contents of the interviews line by line, we detected the main phrases included in the content of the collected data, and the appropriate concepts (i.e., open coding) were then determined. They were simultaneously placed in similar categories based on the existing similarities and differences and continuous comparisons of the open codes. The open codes were categorized based on their similarities and formed subcategories. Finally, the main themes were determined by merging the categories. MAXQDA software version 2010 was used to increase the speed, accuracy, and ease of data coding.

To ensure the reliability of the findings and confirm the validity of the research data, an effective and trust-based relationship was established with the participants. Each interview was analyzed and submitted to the research participants to confirm the data to detect their opinions. To ensure authenticity, the researcher spared his efforts not to include his presumptions in the process of data collection and analysis as much as possible. Moreover, to ensure the transferability of the findings and confirm the validity of the research data, an effective and trust-oriented relationship was established with the participants by clearly stating the research objectives and ensuring information confidentiality. Furthermore, the research objectives were explained to the participants, and they were ensured of the confidentiality of their personal information, their right to withdraw from the research, and the safe place of the interview transcripts. The Ethics Committee of the Shiraz University of Medical Sciences (Code: IR-SUMS-REC-1399-505) approved the study.

## Results

This study included 26 individuals, consisting of six hospital managers and heads, 14 nursing managers, four supervisors, and two ward officials of COVID-19 hospitals in Iran. The participants' mean age was  $43.46 \pm 5.27$  years, and the majority (92.32%) were 40-50 years old. The participants' mean of work experience was  $11.54 \pm 4.32$  years, and 80.77% of the participants had 10-20 years of work experience. Notably, most participants were male (69.23%) with a master's degree (65.39%). Table 1 presents the participants' demographic characteristics.

**Table 1:** Frequency distribution of the study participants

Variables	Category	Number	Percentage
Age (Year)	<40	1	3.84
	40-50	24	92.32
	>50	1	3.84
Total	-----	26	100
Gender	Male	18	69.23
	Female	8	30.77
Total	-----	26	100
Marital Status	Single	0	0
	Married	26	100
Total	-----	26	100
Work experience	<10	3	11.54
	10-20	21	80.77
	>20	2	7.69
Total	-----	26	100
Level of Education	BSc	4	15.38
	MSc	17	65.39
	PhD	5	19.23
Total	-----	26	100

The analysis of the interview data resulted in the extraction of the following three main themes and eight sub-themes indicating nursing challenges during the coronavirus crisis (COVID-19): “managerial challenges,” “educational challenges,” and “individual challenges” (Table 2).

### Managerial Challenges

Lack of nursing staff was one of the challenges in this category as one of the participants stated:

*“In the early days of COVID-19, some nurses left their jobs for various reasons, and hospitals faced a shortage of nursing staff. Nowadays, despite the efforts made to provide nursing staff, the shortage of nurses is still a serious concern”*[P<sub>6</sub>].

Regarding the use of non-specialist personnel instead of nurses to provide nursing services to COVID-19 patients and the employment of some nurses in non-specialist and irrelevant positions, the participants believed:

*“Due to the decreased workload of some hospital wards (e.g., operating rooms) during this pandemic, hospital managers use their personnel to complete their shifts and working hours and ask them to provide nursing services. Using operating room technicians as nurses in some hospitals has now become a norm”*[P<sub>11</sub>].

Another participant also mentioned:

*“The shortage of nurses made the authorities use all nursing capacities in some hospitals in the current COVID-19 crisis. A nurse who has worked in the internal medicine ward for many years and has specialized in this ward has to provide several shifts in*

*a special ward, for which she received no necessary and sufficient training”*[P<sub>3</sub>].

Lack of timely payment of receivables, minimal compensation of arrears, and lack of matching between the nurses’ payments and workloads were other challenges in this category. One of the participants noted:

*“In this crisis, neither the salaries and benefits paid to nurses are commensurate with the difficulty and workload posed on this occupational group and need to be modified, nor arrears for performance-based awards and overtime work are still paid in some hospitals”* [P<sub>8</sub>].

Another participant referred to the lack of necessary equipment to provide nursing services and stated:

*“One of the nursing challenges across the country is the lack of equipment and consumables. Although some measures have been taken, the provided equipment do not meet the needs due to the sharp increase in the number of patients with coronary artery disease.”*[P<sub>14</sub>]

Other managerial challenges were the lack of a specific COVID-19 protocol for nursing services and the frequent changes in COVID-19 treatment guidelines. In this regard, one of the interviewees believed:

*“There is no comprehensive, integrated, and specific protocol for nursing services to be considered for judgment and action, and those inconsistent guidelines communicated irregularly are constantly changing. Of course, due to the changes in the epidemic,*

**Table 2:** Nursing challenges during coronavirus crisis (COVID-19)

Themes	Sub-themes	Categories	
Managerial Challenges	Staff recruitment and employment	Lack of nursing staff lack of regular employment program, attracting and retaining nurses	
		Employing some nurses in non-specialist and irrelevant positions	
		Employing non-specialist staff (e.g., anesthesiologists, emergency technicians, etc.) instead of nurses to provide nursing services to COVID-19 patients	
	Financial and economic	Failure to pay claims on time	
		Minimal compensation for arrears and no matching between nurses' payments and workload	
	Work processes and methods	Lack of appropriate equipment to provide optimal nursing services	
		Lack of a specific protocol on nursing services for COVID-19	
		Frequent changes in COVID-19 treatment instructions	
		Using old techniques for division of labor	
		Lack of adequate workspace and environment	
Educational Challenges	Quantity of education	Virtual training	
		Lack of necessary training on how to deal with crisis	
		Insufficient training to work in special wards	
	Quality of education	lack of training on a high commitment to the profession	
		lack of training on dealing with critically ill patients	
		Lack of applied knowledge in dealing with the real cases of patients	
	Individual challenges	Psychological	Fear of infection for yourself and your family
			Stress, anxiety, depression, and job stress
			Being away from family and children for a long time
		Job consequences	Decreased job motivation
Job burnout and chronic fatigue			
High workload and long working shifts			
Impossibility of using all kinds of work leave			
Impossibility of telecommuting due to the nature of tasks			
Nursing experience		Underlying diseases in some nurses and the risk of COVID-19	
		Lack of sufficient information about COVID-19	
		Nurses' inadequate experience in new roles	
		New nurses' lack of necessary skills	
		Nurses' lack of knowledge about proper medication	
		Failure to fully observe some sterile instructions and nursing standards	
		Some patient companions' violence	
Persistent use of personal protective equipment			

a change in the instructions is also expected, and its main body should be maintained. This does not mean communicating one instruction per month.”[P<sub>16</sub>]

Another managerial challenge was using old techniques for the division of labour. In this regard, one participant acknowledged,

“In some hospitals, nurses' work schedules and shifts sometimes do not follow a certain standard as such nurses are in charge of most activities. It has been observed that some nurses have seven shifts during the week and some others have three shifts!”[P<sub>4</sub>].

The inadequate workspace was a challenge put forth by the participants. In this regard, one participant noted,

“Coronavirus has posed a serious problem in providing a suitable workspace for nurses. Certainly, working in such an environment with the high risk of

disease during the COVID-19 epidemic imposes a high physical and psychological burden on nurses.”[P<sub>3</sub>]

Finally, hospital crisis management teams' poor crisis management was another managerial challenge. An interviewee mentioned,

“After passing two years of the COVID-19 pandemic, the members of the coronavirus crisis management team in some hospitals are still on trial and error! Improper implementation of crisis management knowledge in managing this epidemic is one of the main reasons for the persistent presence of this virus across the country.”[P<sub>15</sub>]

Another participant noted,

“In crisis management, it is not enough to issue notices and circulars and manage critical situations, something that is sometimes seen in reference hospitals! [P<sub>23</sub>].

### Educational Challenges

Virtual training was one of the educational challenges acknowledged by the participants. A participant noted,

*“Virtual training of nurses has been accompanied by the decreased quality of education due to reasons such as Internet restrictions, nurses’ unsolved problems and questions, and management of nurses in the virtual classroom” [P<sub>14</sub>].*

Another participant also stated:

*“One of the problems with virtual training is teachers’ lack of experience in e-learning. Many teachers do not have a background in virtual education, and this has created major challenges, especially in providing necessary training for nurses” [P<sub>9</sub>].*

As the interviewees acknowledged, the other challenges for nurses during the COVID-19 pandemic were lack of necessary training on how to deal with the crisis, lack of training on a high commitment to the profession, work in particular wards, on dealing with critically ill patients, and lack of applied knowledge in dealing with the actual cases of patients. A participant declared,

*“The coronavirus epidemic was an unpredicted crisis, for which our hospitals were not prepared enough to deal with! The medical staff, including nurses, had not received the training required to deal with the critical conditions of epidemics, and the outbreak of coronavirus in our health system posed serious problems in this sector.” [P<sub>19</sub>].*

Another participant believed,

*“Many patients, especially during the peak of the disease, suffered from unfavorable conditions, which required special care, and they must have been transferred to intensive care units. In these wards, there is a shortage of experienced and trained nurses. The nurses in these wards have not received enough training on the patient’s needs to an acceptable extent” [P<sub>21</sub>].*

Another participant also added,

*“Some nurses, especially those with little work experience, are still confused and provide their nursing services experimentally for critically ill patients” [P<sub>25</sub>].*

One of the participants also believed,

*“Although training is not yet complete and needs to be fundamentally revised and reinforced, most nurses do not use the knowledge gained from the existing training effectively” [P<sub>6</sub>].*

### Individual Challenges

Some individual challenges addressing psychological aspects are decreased job motivation,

fear of infecting oneself and one’s family, stress, anxiety, depression, job stress, being away from one’s family and children for a long time, burnout, and chronic fatigue. One of the participants emphasized,

*“The current COVID-19 crisis in hospitals has aroused severe stress and anxiety in nurses, thereby decreasing their motivation and job satisfaction and consequently providing the grounds for nurses’ burnout.” [P<sub>1</sub>]*

Another participant also acknowledged,

*“Putting nurses in quarantine and keeping them away from their families and children can exacerbate their depression under difficult conditions” [P<sub>20</sub>].*

Referring to these challenges, one of the participant believed,

*“Moderate to severe symptoms of stress and anxiety and depression can be clearly noticed in most nurses working in COVID-19 hospitals, which is largely aroused by the workload and their fear from the disease” [P11].*

Another participant also mentioned:

*“Nursing is stressful, and those working in this profession typically face high levels of job and psychological stress. During the COVID-19 pandemic, work pressures were intensified due to special circumstances” [P<sub>3</sub>].*

High workload and extended work shifts were the other individual challenges. Another participant also mentioned,

*“One of the main challenges for nurses during this pandemic is increasing workload. This increase in volume and long shifts is especially evident for project nurses (referring to project employment contracts) [P<sub>13</sub>].*

The impossibility of telecommuting and using different kinds of work leaves were the other detected individual challenges. In this regard, one of the participants stated,

*“Since the beginning of the coronavirus outbreak, many measures have been taken to reduce the presence of staff at the site. However, due to the type of services provided by nurses and the nature of their job on the one hand and the lack of manpower and increasing workload on the other hand, it is not possible to adopt measures such as telecommuting and different kinds of leaves for nurses” [P<sub>16</sub>].*

The other individual challenges were some nurses’ underlying diseases and the risk of infection with COVID-19. In this regard, one participant stated,

*“Some nurses suffer from diseases such as diabetes and hypertension, and some others are pregnant, and this imposes a great psychological burden on this group of nurses.” [P<sub>6</sub>]*

In this regard, another interviewee noted,

“Many nurses with underlying diseases and problems refer and ask for relocation, leave, and even quitting.” [P<sub>18</sub>]

The other individual challenge was insufficient information about COVID-19, nurses’ lack of experience in new roles, novice nurses’ lack of necessary skills, and nurses’ lack of awareness of proper medication. One of the participants

mentioned,

“Coronavirus is a disease, for which no complete information was available due to its unknown nature, especially at the beginning of its outbreak. Like other medical staff, nurses were thus faced with an almost unknown disease and did not have a comprehensive and complete knowledge about this virus. Now, some nurses, such as new nurses, do not have sufficient



Figure 1: Nursing challenges during coronavirus crisis (COVID-19)

knowledge and skills to provide services in the COVID-19 ward" [P<sub>7</sub>].

In this regard, one of the interviewees stated:

*"Some nurses, not only in this crisis, but also under normal conditions, do not have the necessary skills to treat patients properly and correctly! This incompetence has been more highlighted during the Coronavirus crisis" [P<sub>10</sub>].*

Some patient companions' violence was another individual challenge. One of the participants declared:

*"Due to the increase in the number of patients during the disease peak and consequently the occupancy of the hospital beds and given the impossibility of providing full services to some patients or decreasing the quality of services, we have sometimes witnessed the companions' violent treatment towards nurses, and this has become an important problem." [P<sub>11</sub>]*

Figure 1 presents an overview of nursing challenges during the coronavirus crisis (COVID-19).

## Discussion

The findings of the present study explain the three main challenges in nursing services during the coronavirus crisis (COVID-19): "managerial challenges," "educational challenges," and "individual challenges."

### Managerial Challenges

Managerial challenges ranged from the shortage of nursing staff to the inappropriate allocation of nurses to irrelevant jobs or the use of non-professional groups in the nursing profession and the lack of a specific program to maintain the nursing staff. Needless to mention that the challenge of providing a nursing workforce can pose more pressure on the hospital management during the pandemic. However, Gab Allah (2021) reported three main challenges in nursing management during the pandemic in Egypt: safety and risk of infection, conflict management, and unexpected crisis management (15). Accordingly, the lack of nursing staff, inappropriate allocation, and distribution of staff, or the obligation to use non-professional staff in nursing have led to the conflict of interest and special conditions of the ward and hospital during the pandemic and posed further challenges. On the other hand, the lack of a specific program to attract and retain the nurses can have many consequences. For example, Al-Adawi et al. (2021) in Oman noted that the recruitment of novice nurses with lack of knowledge about pandemics and their misunderstanding of hospital working during the crisis could be some of the problems with the employment of novice nurses (16). When it comes to

the nursing staff shortage, one of the solutions that can be mentioned is pursuing the issuing recruitment increase licenses, outsourcing the services, and cooperating with the private sector in order to provide manpower and resources required for this occupational group.

Other research findings indicated that some managerial challenges were associated with problems in payment and compensation of the nurses' services. Evidently, under the specific conditions of the pandemic, matching the workload with payment and payment techniques is of great importance. In this regard, Llop-Girones (2021) et al. (17) reported that the nurses' health during the pandemic is affected by social factors, political system, power group relations, and labor laws strongly which are influenced by economic factors. As the present findings indicated, receiving remuneration, which can have a direct impact on the nurses' quality of life and their standard of living, and the manner of payment and fairness in payment can be among the challenges posed as to the nursing management system during the pandemic. This issue is of prominent importance in countries with conditions similar to that of Iran, where the method of payment to nurses is based on fixed salaries and should be put on health policy makers' agenda.

In this regard, prioritizing payments and reimbursing the services of nurses, especially nurses working in Covid-19 special centers, can be beneficial. Also, lack of discrimination in payments between different groups of nurses is another solution that can be recommended in the field of reimbursing the services. The formulation and implementation of a tariff law for nursing services and the establishment of extraordinary payments in the context of the Covid-19 crisis are also among the issues that can be considered.

Finally, the other challenges in this section are the lack of equipment and adequate workspace to provide optimal nursing services, lack of a specific protocol on nursing services during the pandemic, and the continual change of treatment guidelines. A systematic review by Fernandez et al. (2020) suggested that nurses needed support from the government, policymakers, and trade unions during the pandemic. These supports could include rules and regulations, work instructions, and decision guidelines. In the absence of such mechanisms, nurses would suffer from long-term psychological problems and burnout, which can in turn exacerbate the loss of the nursing workforce (18). Considering the lack of equipment and inadequate workspace, Razu et al.

(2021) in Bangladesh similarly reported the lack of personal protective equipment (PPE) as one of the main challenges of the professional workforce posed during the pandemic in hospitals (19).

For reducing the challenges ahead in the above cases, improving the work environment and reinforcing the sense of cooperation and participation among nurses are the suggested solutions. Besides, the compilation of a comprehensive and unified guideline by the Ministry of Health and Medical Education within the scope of Covid-19 treatment with emphasis on nursing services and its notification to reference hospitals can be helpful.

### *Educational Challenges*

In this study, the educational challenges consisted of virtual training; lack of training in general, training on a high commitment to the profession, training to work in particular wards, and training on dealing with critically ill patients; and lack of applied knowledge in the face of real cases for nurses during the pandemic.

Although virtual education has provided some grounds for different occupational and student groups to benefit from educational materials without the need to attend classes at a specific time and place, Agu et al. indicated that (2021) virtual nursing education had faced various financial and political barriers, and underlying factors such as technology literacy level, infrastructure development, and injustice in access to virtual services in many developing countries, including the Caribbean (20). Accordingly, health policymakers should pay special attention to reinforcing infrastructure and improving the digital literacy of the health staff, including nurses, for the post-COVID-19 period or possible future epidemics. On the other hand, regarding inadequate education and lack of applied nursing knowledge during the pandemic period, the significance of the issue can be addressed from two perspectives, namely in-service training to increase the working nurses' knowledge and skills in accordance with the practical needs of the pandemic and training nursing students to enter the labour market. Heidari-Soureshjani et al. (2020) highlighted the need to adopt new educational approaches to teach clinical nursing skills (21). Similarly, Li et al. (2021) emphasized improvement in online teaching infrastructure during the pandemic and also simultaneous attention to the learners' mental state to create an appropriate educational environment (22). Given the influential role of education and skill-learning in nursing, health policymakers should plan to replace new nursing

education methods, produce applied and new educational content, and create educational justice in providing access to produced content.

### *Individual Challenges*

In this study, individual challenges were recognized as the third category of nursing challenges during the pandemic era. Accordingly, one of the main subcategories of individual challenges was psychological challenges, including fear of illness, stress, anxiety, depression, and job embeddedness, and the consequences of feeling homesick and being away from the family. In this regard, Mekonen et al. (2020) in Ethiopia suggested that the nurses during the pandemic somehow experienced one of the three problems of anxiety, depression, and stress (23). To reduce psychological pressure imposed on nurses, nursing managers and policymakers should help to raise their awareness and knowledge of the nature of the disease and its transmission method, develop practical guidelines, and pay special attention to nurses with underlying diseases. In India, Gandhi et al. (2021) suggested improving the nurses' self-efficacy, developing strategies to increase their resilience, and providing psychological counseling to reinforce the spirit of optimism as solutions to individual-psychological challenges in nurses during the pandemic (24).

Other findings revealed individual challenges resulting from the nurses' job duties such as reduced job motivation, burnout and chronic fatigue, high workload, and long-term work shifts, inability to use all kinds of work leaves and telecommuting due to the nature of their tasks. Evidently, psychological factors such as fear of illness, stress, isolation and depression during the long pandemic and special working conditions in hospitals, especially infectious wards and intensive care units, can be associated with negative consequences such as reduced motivation, reduced job satisfaction, burnout, reduced quality of life, and chronic fatigue and disease among the nursing groups. In this regard, Nikeghbal et al. (2021) in Iran reported that nurses who work in intensive care units during the pandemic period experienced more work stress and lower quality of work life (25). Similarly, Afulani et al. (2021) in Ghana and Kenya proposed that the COVID-19 pandemic had a negative effect on health workers' job satisfaction (26). These findings highlighted the need to support the nursing workforce, develop material and spiritual support packages, and provide incentive facilities to nurses by nursing managers and hospital managers.

Finally, the individual nursing challenges

also included their experience in the persistent use of personal protective equipment, patient companions' violence, nurses' lack of skills, the knowledge and full observance of some sterile guidelines and nursing standards. Nurses have had experiences during the pandemic which were different from what they experienced at other times. According to Jose et al. (2021), continuous and long work and the persistent use of personal protective equipment by nurses have been associated with negative consequences such as headache, excessive sweating, respiratory problems, and skin allergies (27), which can be improved by nursing managers' proper training and proper workflow planning and reduced working hours.

### Study Limitations

This study had some limitations including the restrictions of holding individual face-to-face interviews at the participants' workplace and at the same time the necessity of Focus Group Discussion (FGD) sessions for having mutual discussions and finalizing the challenges of COVID-19 on the studied nurses.

### Conclusion

The present study suggested that nurses in Iran were exposed to managerial, educational, and personal challenges during the pandemic. Among the managerial challenges, nursing and hospital managers should pay attention to hiring new nurses and recruiting and retaining old nurses, along with meeting their financial and economic needs and improving their work processes and methods. Among the educational challenges, simultaneous attention to the quantity and quality of education, new educational methods, and equitable access to educational content were among the items to be considered during the post-Corona period in nursing policies or likely epidemics in the future. Finally, to manage and address individual nursing challenges, we recommend that paying attention to nurses' psychological problems, planning to reduce their fear, stress and anxiety, and supporting the nurses to improve the quality of their work-life and job satisfaction and reduce burnout and stress might be effective. However, due to the difference between the nurses' experiences during this period and working conditions in non-critical times, managers and health policymakers need to detect the nurses' lived experiences and develop practical and local interventions based on environmental, social, and cultural features.

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### Authors' Contribution

ARY has designed the study and prepared the initial draft. GM and ARY have participated in data collection and data analysis. NM and GM have technically edited the manuscript and finalized the draft. PB has supervised the whole study. The author(s) read and approved the final manuscript.

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### Ethics Approval and Consent to Participate

This study is approved by Shiraz University of Medical Sciences Ethics Committee with the ID code of IR.SUMS.REC.1399.433. All the methods were carried out in accordance with relevant guidelines and regulations. Meanwhile, all interviewees voluntarily participated in the study, after being informed about the aim and nature of the interview.

**Consent for publication:** Not applicable.

**Conflict of Interest:** None declared.

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