



Challenges of Managing Covid-19 in the Shohada Hospital of Dehloran City in 2024: A Qualitative Study

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Abstract

Introduction: Hospitals are the main providers of health services during the COVID-19 pandemic. It is important that the hospital can maintain and manage its performance during this situation. This study aimed to identify the challenges of managing COVID-19 in a Shohada Hospital in Dehloran City.

Methods: The present qualitative study was conducted using a content analysis method from April 2024 to September 2024. It was conducted in the Shohada Hospital of Dehloran City, affiliated with the Ilam University of Medical Sciences. Fourteen senior and middle managers of the Hospital were purposefully included. Semi-structured interviews were used. Data were analyzed using Graneheim and Lundman's method and MAXQDA 2020 software.

Results: Challenges affecting the managing of hospital services during the pandemic were summarized under 6 main themes, namely "coordination, psycho-social factors, hospital readiness, infrastructure, human resources, and economic factors."

Conclusion: Hospitals must develop and implement new strategies to manage the epidemic, including preparedness, leadership, cost management, human resources, and continuity of essential services.

Keywords: Covid-19 epidemic, Hospital, Challenge, Management

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Introduction

Hospitals, as one of the main organizations providing health services, play an important role in maintaining, providing, and promoting the health of society in all situations, even pandemics (1). The manager of them is very important (2).

The clinical management of COVID-19, as defined by the World Health Organization, is a life guide containing the most up-to-date recommendations and a comprehensive guide to the optimal care of COVID-19 patients during their illness and The management of COVID-19 should focus on early diagnosis, immediate isolation and general supportive care, respiratory support, symptomatic treatment, nutritional support, and psychological interventions (3).

The high transmission speed of the virus of the COVID-19 pandemic and its high degree of unpredictability make it necessary to provide

rapid support and organized coordination to control and manage the spread of the disease (4), and all countries of the world, even the Iranian health system, faced great health challenges (5, 6). It has caused a large number of cases, saturation of the capacity of healthcare systems, and eventually, very high mortality rates worldwide (7, 8). Since the epidemic, hospitals have faced many challenges in providing healthcare services, including shortages of staff and hospital beds, disproportionate management of resource allocation, lack of a standard plan for preparedness and response phases, inadequate training and equipment, and complex and expensive diagnostic and treatment methods and manage human resources properly (9).

In this pandemic situation, hospitals require government support, adequate resources, and a strong management system to maintain services (10, 11). However, during the COVID-19

pandemic, most hospitals in Iran were unable to maintain normal operations for some time because of the lack of crisis-related resources and the unpredictability of the pandemic (3). Among other obstacles in dealing with the spread of the virus, it was found that many health centers were not equipped and prepared to deal with the influx of patients and did not have sufficient medical and epidemiological training to manage patient care properly (12).

In emergency situations such as a pandemic, the role and performance of hospital managers is very important. They will play a key role in managing and controlling such events. Hence, preparing hospitals for the challenges ahead as healthcare providers is essential to reduce casualties and physical injuries significantly; the efficient management of healthcare centers significantly impacts their optimal performance (13). In England, to solve the shortage of medical staff at the time of COVID-19, decisions such as the early graduation of medical students and their entry as interns in medical centers, the use of retired medical staff, mostly doctors who retired three years ago, the use of specialist treatment staff as general practitioners were adopted to meet this challenge (14).

Hospitals in crisis situations should be able to respond to the large numbers of patients and casualties (15, 16). Frequent evaluation and monitoring to identify weaknesses and challenges, as well as appropriate planning, can help improve hospital preparedness (17). On the other hand, the position of management and the role that hospital managers can play in the provision of hospital services is very important (18). Hospitals have been forced to increase their medical capacity, create outpatient clinics, and classify hospitals to support COVID-19 patients (19). Also, the structure of departments should be standard for emerging diseases, and any increase in the physical capacity of the hospital requires supplies, equipment, and medicines (20, 21).

Taking effective measures by hospital managers and identifying the management challenges of facing the COVID-19 disease crisis can help formulate appropriate models of crisis management and improve hospital preparedness, and identifying the challenges of hospitals in facing biological crises can be a roadmap for future crisis management plans for health managers and policymakers in Iran

(22). Knowing the experiences and challenges of healthcare providers is essential to effectively support them and create a safe environment for them to perform their duties in critical situations, especially during the COVID-19 pandemic (23).

In the study of Najafi and her colleagues in 2021, the challenges of hospital management during the Covid-19 pandemic related to human resources, bed capacity, equipment, budget, management, and leadership of hospitals were identified (24). Understanding the importance of identifying the previous and new challenges related to the COVID-19 pandemic and new mutations and strains of this disease to help the decision-makers in the health field shows the necessity of this research even more. Therefore, in this regard, researchers will try to study the challenges of managing the COVID-19 crisis in Shohada Hospital in Dehloran City so that by identifying these challenges, an effective step can be taken towards planning to remove these obstacles for epidemics that may occur in the future.

Methods

Study Design

The present qualitative study used a content analysis method from April 2024 to September 2024. The present qualitative study explains the challenges of managing COVID-19 disease in the Shohada Hospital of Dehloran City.

Population and Research Sample

The study population consisted of senior and middle managers of the Shohada Hospital of Ilam University of Medical Sciences, and the research sample included hospital managers, nursing managers, administrative managers, crisis managers, financial managers, hospital supervisors, facilities managers, service managers, and accreditation officers.

The participants were selected by purposive sampling. In this method, the researcher used participants in the research who had rich experience with the Corona pandemic and were willing to participate in the research. The number of participants was determined based on data saturation so that after 14 semi-structured interviews, no new stratum was formed.

Inclusion Criteria

- Senior and middle managers

- Participants had rich experience with COVID-19
- Work experience of more than 3 years

Exclusion Criteria

- Someone has withdrawn during the COVID-19 pandemic.
- Someone who is on leave for more than 6 months

Data Collection

The collection tool in this study was a semi-structured interview guide sheet and taking notes in the field. The method of collecting information is to conduct semi-structured interviews. After introducing himself, the researcher obtained permission to the interview. If the participants were willing and satisfied, the time and place of the interviews were arranged according to the participants' preferences. the interview was conducted face to face. He or She was free to participate in the study. Before starting the interview, consent was obtained from the participant for audio recording.

Then, the interviews started with simple and general topics and gradually moved on to specific questions based on the answers given. Some of the questions asked (introduce yourself, what factors effectively manage COVID-19 disease? What were the challenges in managing COVID-19 disease in your hospital?). further follow-up questions were asked along these lines (explain a little more; please give an example)

The interview process continued until the last interview when data saturation was reached. Each interview lasted between 50 and 80 minutes. To increase the accuracy and precision of the data obtained, the interviews were implemented immediately after the completion of each interview. A code was assigned to each interview to maintain its confidentiality. It was also given at the time of recording the interviews; the details of the interviews include age, location of the interview, the interviewee's position in the organization, and the date and time of the interview were recorded.

Data Analysis Method

The data collection and analysis were carried out simultaneously, based on the method proposed by Graniham Ludman, whose steps include 1- conducting the interviews and reviewing them several times to find a correct understanding of all the cases conducted, 2-

extracting semantic units and categorizing them under the title of compact units, 3- summarizing and categorizing compact units and choosing a suitable label for them, 4- arranging subcategories and 5- choosing a suitable title that can cover the categories obtained (25).

In this study, after conducting each interview immediately in the shortest possible time and listening twice, the recorded information was written word by word on paper, and then the information was typed. Simultaneously with the implementation of the first interview, the analysis process began.

During the analysis process, first, the transcripts were read line by line, and the important paragraphs were marked and identified; then, the units of analysis were determined, and in the present study, the entire text of each interview was considered as the unit of analysis. After that, the semantic unit was determined, and the expressions related to the challenges of managing COVID-19 in the hospital were considered. Then, coding was done using the MAXQDA software, version 2020. Also, after coding all the data, a comparison was made between the codes based on the conceptual similarities and differences they had with each other, and the conceptually similar codes were grouped into classes with a more precise and abstract concept. Finally, by continuously comparing the classes Again, the hidden content in the data was identified under the title of the main theme.

Trustworthiness and Rigor

Lincoln and Goba's four criteria of reliability, validity, transferability, and verifiability were used to ensure the accuracy and scientific rigor of the material presented (26).

A specialized educational team (including an expert, a hospital manager, and a professor in the field of healthcare management) was used to review the findings. In addition to semi-structured interviews, note-taking during the interviews was also used to validate the data. The initial findings of this study, along with initial codes and categories, were presented to a sub-sample of participants to elicit their opinions and feedback (member survey). Some parts of the data were reviewed by colleagues not involved in this study.

To determine the reliability of the findings, the opinions of an external observer were used; this observer was a researcher familiar with the

challenges of managing qualitative research methods but was not a member of the research team. Determining the possibility of confirming the findings, all activities were recorded, and a report of the research process was prepared to determine transferability; the results were discussed with two faculty members whose positions and experiences were comparable to the participants, and the results were reconfirmed.

Ethical Considerations

Ethical approval for the present research was obtained from the Ethics Committee of Marvdasht Azad University (IR.IAU.M.REC.1403.007). When the participants were informed about the research objectives and asked to consent to the interviews, they were assured that the information collected would remain confidential. They were also informed that they could withdraw from the study anytime.

Results

Table 1 presents the participants' demographic information. This study interviewed 14 participants (6 females and 8 males) aged 25-50. The mean age of the subjects was 38.92 years. The mean work experience of the participants was 12.57 years.

In this research, after reviewing and analyzing the data, according to (Table 2), the effective components of the management of COVID-19 in Shohada Hospital of Dehloran were categorized into 6 main categories, including coordination, psychosocial factors, hospital readiness, infrastructure, human resources, and economic factors.

Coordination

One of the challenges of managing COVID-19

at Shohada Hospital was the coordination issue. During COVID-19, coordination within and outside the hospital was identified as a key challenge in providing effective health services. The lack of coordination and agreement between the various health system departments, the lack of coordination between the department and the external department, and the confusion in how duties were performed were caused by the absence of some staff at work. The lack of coordination between the hospital and the health network, the necessary coordination in sending samples, and early response, on the other hand, the indecisiveness of patients in the emergency department caused overcrowding in the emergency department. There was also a lack of coordination between the hospital and supporting organizations, such as the municipality, regarding the transfer of infectious waste and the burial of corona bodies, which led to the challenge of managing COVID-19 in the hospital.

“Unfortunately, during the Covid-19 period, we had to wait at least 2 days for the answer to the Covid-19 test, and this caused the patients to wander around the hospital and worried the family” (Participant 7).

Psychological and Social Factors

Psychosocial factors have also been a challenge in the management of Covid-19. People may experience feelings of anxiety and stress as a result of the coronavirus outbreak or their experiences in hospital. Worries about getting sick can also increase this anxiety. During a coronavirus outbreak in hospitals, employees may face many drastic changes in their routines and daily lives.

Table 1: Demographic information of research participants

| Participants | Gender | Age | Work experience | Education level |
|--------------|--------|----------|-----------------|-------------------------------------|
| 1 | Female | 39 years | 15 years | Bachelor in Nursing |
| 2 | Male | 48 years | 28years | Master in Nursing |
| 3 | Male | 27 years | 4 years | Bachelor in Nursing |
| 4 | Female | 35years | 7 years | Bachelor in Nursing |
| 5 | Female | 37 years | 8 years | Master in Social Worker |
| 6 | Male | 32 years | 5 years | Master in Psychology |
| 7 | Female | 43 years | 12 years | Bachelor in Nursing |
| 8 | Male | 38years | 10 years | Master in health service management |
| 9 | Male | 50 years | 27 years | Bachelor in Nursing |
| 10 | Female | 25years | 3years | Bachelor in Healthcare |
| 11 | Male | 47years | 19years | Master Public Administration |
| 12 | Male | 38 years | 11 years | Bachelor in Business management |
| 13 | Male | 40 years | 12years | Bachelor in Accounting |
| 14 | Female | 46years | 15 years | Ph.D. in Nursing |

Table 2: The challenges of the Covid-19 epidemic in the hospital

| coordination | Psychological and social factors | | | | Preparation | | | Infrastructure | | | Manpower | | Economic factors | |
|--|--|---|--|--|---|--|---|-------------------------------|-------------------------|--------------------|----------------------------|-----------------------|------------------------|-------------------|
| Internal organization | External organization | inter-personal communication | motivation | stress and anxiety | experience | Education | planning | Medical equipment | Non-medical equipment | Physical space | clinical | Non-clinical | Policies and Financing | Budget |
| Pre-hospital emergency with hospital | Hospital with municipality | Communication between employees | Employee motivation to work in the infectious department | Fear of contracting the epidemic of Covid-19 | The experience of employees in the face of crisis | Knowledge of employees and managers in crisis management | Comprehensive pandemic management program | Personal protective equipment | Separation of equipment | Number of beds | Number of nurses | number of guards | Equipment | Budget allocation |
| Health network with hospital | Hospitals with insurance organizations | Communication between employees with family members | Fear of infection | Anxiety from an unknown disease | Experience in hospital maneuvers | Timely training of employees | Running existing programs | Number of oxygen capsules | Disinfectants | Cold storage space | Number of doctors | Number of services | medicine | Hospital income |
| Food and Drug Organization with the hospital | Hospital with relief organizations | Communication between doctor and nurse | Employee fatigue | work stress | Experience using personal protective equipment | Training of new recruits | Monitoring the implementation of programs | Number of ventilators | Service equipment | Isolated sections | Number of physiotherapists | Administrative forces | vaccine | Health costs |

These changes can include restrictions on family visits, reduced communication, changes in hospital policies and regulations, and increased use of technology to communicate with family. Staff suffered from depression, stress, and anxiety due to the sudden death of patients. These psychological factors of the staff affected the management of the disease.

"It was very difficult when we had to reduce communication and visits with the family because we were afraid and worried about my family, and sometimes it happened that some of the relatives were hospitalized and died, I became spiritually depressed" (Participant 10).

Preparation

The sudden spread of the coronavirus epidemic in the hospital caused an increase in the number of patients in the hospital, which caused a significant shock to optimal care due to the lack of prior planning to face the epidemic crises of hospitals with problems related to lack of preparation, insufficient experience, low training. They faced planning deficiencies during the coronavirus outbreak, and since the beginning of the coronavirus outbreak, the staff did not have enough experience to face this crisis. The lack of adequate training for health workers in safety and infection control protocols contributed to the spreading of the disease. Inappropriate and inadequate staffing led to exhaustion, fatigue, and an inability to provide services to the population. Reducing the number of staff could increase work pressure and reduce the quality of services.

"At the beginning of Corona, because of the lack of proper planning, it became difficult to work" (Participant 11).

"Most of the time, I was in the hospital for almost 18 hours without rest or sleep, and I was really tired and not so ready for the next shift" (Participant 8).

Infrastructure

Infrastructural challenges have made managing COVID-19 disease in hospitals difficult, the most important of which have been the challenges of lack of space, lack of medicines, reduction in oxygen pressure, medical equipment and consumables, and the challenge of supplying electricity to the

hospital. Initially, due to a lack of medicines, lack of personal protective equipment such as gloves, medical masks, gowns, goggles, and shields, lack of disinfectant and sterile equipment, diagnostic kits, lack of ventilators, thermometers, pulse oximeters, and lack of cooperation. Some of the staff at the hospital faced serious challenges. Other challenges include a sudden increase in the number of patients requiring hospitalization, which can lead to a shortage of beds and static resources.

Among other problems in disease management, the equipment category mentioned the shortage and reduction of oxygen pressure, which, at the beginning, sometimes consumed 15 liters of oxygen in an hour of illness and created a challenge.

“When the peak hours started, it happened several times that the emergency situation of Corona was such that patients were standing and lying down in the Corona area because the beds’ capacity was insufficient” (Participant 2).

“Sometimes two, three or more people would die at the same time in the COVID-19 ward, and the morgue was really full, and we didn’t even let the companions of the deceased come near; they quickly took them to the burial place for fear of spreading the virus” (Participant 3).

“Sometimes there was a shortage of ventilators on the ward, which affected the safety of the patients” (Participant 7).

Human Resources Challenge

The challenge of human resources during the coronavirus disease is one of the most important issues in managing this crisis. There was a staff shortage during the COVID-19 pandemic, and to avoid this problem, it was necessary to increase the number of working hours and shifts. The increased number of patients needing care increased the mental and physical pressure on the staff. Among the challenges faced by the hospital staff was the stress and anxiety of the troops who had contracted the COVID-19 virus; the rapid spread and unknown nature of the disease had created fear and anxiety for everyone. Also important is allied staff, including cleaning, supply, security, and other departments. There is a need for rapid and continuous training in prevention, treatment, and safety of preparedness programmers in dealing with special situation conditions—the need for psychological and

support services for staff.

The differences in the needs and working conditions of different staff, including doctors, nurses, and service providers, the need to adapt policies and programmers to the needs and conditions of different groups of workers, the need for effective human resource management, the promotion of staff health and safety, and the creation of contingency plans to deal with crises. They are hygienic. These challenges highlight the need to manage human resources effectively, promote workers’ health and safety, and develop contingency plans to deal with health crises.

“During the coronavirus, I asked for sick leave several times due to fatigue caused by many shifts” (Participant 12).

“The lack of a pulmonologist and the shortage of nurses caused several people not to come to work for a while due to fear, work pressure, and family pressure, and some even became seriously ill” (Participant 13).

Economic Factors

During the outbreak of the Coronavirus, hospitals faced many economic challenges, including policy and funding, sanctions, and issues related to financial resources:

At the beginning of the outbreak, the hospital was challenged by issues such as the harsh sanctions that were prevalent in the health and treatment sector during the COVID-19 period, the delay in receiving vaccines and antiviral drugs, As well as the purchase of protective equipment for hospital staff, such as masks, special clothing, gloves, disinfectants, and even the need to update the artificial ventilation system to prevent the transmission of the virus, the hospital faced an increase in health care costs; and from other aspects, the change in policies and funding from the government and health-related institutions, and the impact of changes in laws on hospital funding caused the hospital to face economic challenges. The economic challenges faced by hospitals during the COVID-19 epidemic included policies, funding, budgets, hospital income, and healthcare costs. The pandemic increased hospital admissions, rising costs, and financial pressures. At some point, the hospital faced a decreased income due to the forced cancellation of non-emergency procedures and increased uninsured patients.

“As the coronavirus became more severe and

the hospital had to deal with more coronavirus patients, the healthcare costs for these patients and the hospital increased. This caused the hospital's income to decrease because there were fewer unnecessary patients and patients with other problems" (Participant 1).

Discussion

The present study is the first qualitative study conducted on the challenges of managing COVID-19 in Shohada Hospital of Dehloran in 2024. The most important known challenges include (coordination, preparation, psychosocial, infrastructural, manpower, and economic factors).

According to the participants, human resources is one of the main challenges in hospital service. During the rapid spread of COVID-19, the hospital encountered an increase in the number of patients, and as some staff became infected and some left work, hospitals faced a dramatic shortage of human resources, especially nurses, infectious disease specialists, and trained personnel in intensive care units. This leads to an increased workload, probability of errors, and reduced service quality. In a study by Plagg et al. in Italy, access to trained intensive care physicians and nurses was limited during the pandemic (27, 28). Li et al. in China stated that the shortage of nurses during the pandemic increased as they became infected with the disease, and the workload of other nurses also increased. All of these factors affect the quality of services, which is consistent with the results of the present study (28, 29). It seems that training in the field of intensive care units and infectious patients to the personnel of different units of other inpatient units in hospital.

The study by Ebrahimi Rigi et al., which is consistent with our study, showed that the lack of experience of hospital staff in dealing with the COVID-19 crisis had a significant impact on the healthcare system and the implementation of support measures and the identification of strategies to improve preparedness, well-being, and readiness. Human resources are essential for future public health emergencies. The experiences and challenges of the pandemic demonstrate the importance of continuous learning, resource allocation, and comprehensive support to ensure the provision of quality care in the face of unprecedented challenges (19).

An American study found that staff turnover in some hospital emergency departments, special care units, and nursing units increased from 18% to 30% due to the pressure of COVID-19 (29). The current study noted a transfer of staff in the departments, which forced the emergency nurse to work in the special care department, creating challenges in providing support to COVID-19 patients. In conclusion, the staffing challenges during the COVID-19 pandemic presented hospitals with significant challenges, including staff shortages, work allocation, use of non-nursing staff, increased workload and stress, and staff turnover.

In the current study, coordination has been identified as one of the challenges of managing covid-19. intra-organizational coordination, such as the absence of coordination among employees and delayed response to COVID-19 tests from the laboratory to departments. Infectious diseases during the epidemic made the hospital face challenges. The lack of experience and knowledge about this emerging disease has created challenges in providing healthcare services. In addition, the need to provide routine services alongside Covid-19 care has strained hospital resources and staff. That was consistent with the study of Mohammadi Nia et al. (3).

The COVID-19 pandemic has created various challenges for prehospital emergency coordination. In this study, it was found that emergency medical service workers faced psychological challenges, lack of equipment, and increased workload, which affected the quality of pre-hospital emergency care in the time of Corona, which is consistent with the study of Mohammadi et al. (30). Also, in a study conducted by Shafqat et al., it was found that the epidemic led to an increase in the mission time for pre-hospital emergency medical services, which affects the provision of care (31).

Coordinating the health network, FDA, and hospitals during the COVID-19 pandemic has been challenging. In addition, this study found that the Food and Drug Administration was actively involved in providing guidance, authorizing emergency drug use, and restricting the use of specific treatments for COVID-19, which was consistent with the Tenn study (32). Also, the COVID-19 pandemic has created significant challenges for hospitals interacting with insurance organizations. In this study,

the reduction in the use of medical care unrelated to COVID-19 and the increase in insurance premiums have affected the financial performance of health insurers, which was in line with the study of Shrivatsa (33).

The COVID-19 pandemic has created a variety of psychosocial challenges for frontline healthcare providers in hospitals. In this study, frontline healthcare providers are at high risk of developing mental disorders such as fear, anxiety, depression, burnout, and fatigue due to the risk of exposure to the virus, high workload demands, and uncomfortable work shifts, which was consistent with the study of Taremva and his colleagues (34). Also, this study showed that long shifts in employees were a challenge that reduced their motivation. The survey by Aroosiya et al. is consistent about the effect of motivation on employee job satisfaction, especially referring to health workers during the Covid-19 pandemic (35).

This study showed that the nursing staff reported high levels of fatigue and burnout during the pandemic. In line with the study of Malik and colleagues, they found that the fear of infection and transmission of the virus to family members caused high levels of fatigue and decreased motivation among employees, which affected all employees from a psychological point of view (36).

The challenge of knowledge management in crisis management during a hospital epidemic can be attributed to several factors, including the rapid spread of information, the need for efficient communication, and the emotional impact on healthcare workers. The study by Lalonde et al. found that efficient information management is crucial for effective crisis response. Hospitals can implement digital tools such as incident management software to simplify data collection, sharing, and analysis. However, this method was not consistent with our study during the epidemic crisis (37). In a study by Jachetti in China, crisis management in hospitals was unpredictable, and there was no planning to provide services to patients, which is consistent with the results of this study (38).

During the COVID-19 pandemic, hospitals faced infrastructure challenges related to physical space, hospital equipment, and non-hospital equipment. The current study shows that the rapid spread of COVID-19 led to an increase in the number of patients, hospital capacity,

and resources. This required the creation of additional space and resources to accommodate the increasing number of patients, which is in line with the study by Setola and colleagues, which showed that, in response to the lack of physical space, hospitals began to use non-hospital spaces such as halls and meeting centers as temporary wards (39). The current study showed a lack of hospital space, but the number of patients was insufficient to consider large halls.

In the current study, another of the challenges of managing COVID-19 was the provision of personal protective equipment, oxygen supply, and equipment to monitor ventilation and oxygen supply, especially in the early days of the outbreak. According to the results of the present study, in studies by Iyengar et al. and Maleki et al., ventilator deficiency was reported to be a significant problem in the treatment of corona patients worldwide, which is consistent with the results of the present study (40, 41).

Also, the study by Ndayishimiye et al. showed that the epidemic led to a shortage of gloves, masks, and gowns, putting healthcare workers at risk of infection (42).

In addition, the increase in hospitalization rates during the peak period of COVID-19 led to a shortage of complex and expensive equipment, drugs, and diagnostic and therapeutic equipment, and the Martyrs' Hospital of Dehhran faced significant challenges in providing healthcare services, which consistent with the study by Mohammadinia and colleagues (3).

The Covid-19 pandemic has created unprecedented economic challenges for hospitals. The current study found that the hospital experienced a sudden decrease in elective and outpatient services due to the epidemic. This led to decreased overall revenue and increased financial pressure on hospitals. Also, the epidemic led to an increase in the costs of supplies and labor because hospitals had to acquire more equipment and resources to manage the influx of COVID-19 patients, and according to the results of the present study, the hospital lacked materials such as masks, ventilators, and ward capacity. Special care has been faced, which has increased the costs of providing care. The study done by Karima Lalani and his colleagues was consistent (43). This made the hospital look for alternative resources, equipment, and strategies to conserve and reuse resources.

These challenges have not only put pressure on the physical resources of hospitals but have also affected the mental and emotional health of health professionals. Frontline health workers have faced uncertainties, high levels of stress, and a lack of coordination in health departments, leading to increased mental and physical stress (44). As a result, the challenges of the COVID-19 epidemic in hospitals include a lack of resources, an increased workload on healthcare workers, and the need for comprehensive strategies to address patients' and healthcare professionals' physical and mental health needs. Addressing these challenges requires a multifaceted approach that includes managing resources, supporting staff, and implementing effective protocols to ensure the safety of patients and healthcare workers.

Conclusion

In conclusion, managing the COVID-19 crisis has been complicated and confusing for health policymakers due to the high infectivity and mortality of this virus and the lack of financial, material, and human resources. The COVID-19 epidemic has confronted the hospital with economic factors, increased costs, decreased income, lack of equipment, and labor shortage. Hospitals must develop and implement new strategies to manage the pandemic, including preparedness, leadership, supply management, human resources, and continuity of essential services. This study demonstrates the importance of effective management and support in meeting the challenges of COVID-19 management in hospitals. The findings of this study can inform the development of policies and interventions to improve the management of COVID-19 in hospitals and increase their preparedness for future epidemics.

Ethics Approval

The Research Vice-Chancellor of Azad University, Marvdasht branch, IR, approved the study. IAU.M.REC.1403.007.

Conflict of Interest

There are no conflicts of interest.

References

1. Daneshmandi M, Amiri H, Vahedi M, FARSHI M, SAGHAFI AE, Zigheymat F. Assessing the level of preparedness for

confronting crisis such as flood, earthquake, fire and storm in some selected hospitals of Iran. *Journal of Military Medicine*. 2010.

2. Ness MM, Saylor J, Di Fusco LA, Evans K. Healthcare providers' challenges during the coronavirus disease (COVID-19) pandemic: A qualitative approach. *Nurs Health Sci*. 2021;23(2):389-97. doi: 10.1111/nhs.12820.
3. Mohammadinia L, Saadatmand V, Khaledi Sardashti H, Darabi S, Esfandiary Bayat F, Rejeh N, et al. Hospital response challenges and strategies during COVID-19 pandemic: a qualitative study. *Front Public Health*. 2023;11:1167411. doi: 10.3389/fpubh.2023.1167411.
4. Erkoreka M, Hernando-Perez J. Decentralization: A handicap in fighting the COVID-19 pandemic? The response of the regional governments in Spain. *Public Adm Dev*. 2023;43(2):129-40. doi: 10.1002/pad.1988.
5. Shahyad S, Mohammadi MT. Psychological impacts of Covid-19 outbreak on mental health status of society individuals: a narrative review. *Journal of military medicine*. 2020;22(2):184-92.
6. [OWCdC-osUhwriedn-c-a. 2020.](#)
7. Zou L, Ruan F, Huang M, Liang L, Huang H, Hong Z, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. *N Engl J Med*. 2020;382(12):1177-9. doi: 10.1056/NEJMc2001737.
8. Cho SY, Kang JM, Ha YE, Park GE, Lee JY, Ko JH, et al. MERS-CoV outbreak following a single patient exposure in an emergency room in South Korea: an epidemiological outbreak study. *Lancet*. 2016;388(10048):994-1001. doi: 10.1016/S0140-6736(16)30623-7.
9. Filip R, Gheorghita Puscaselu R, Anchidin-Norocel L, Dimian M, Savage WK. Global Challenges to Public Health Care Systems during the COVID-19 Pandemic: A Review of Pandemic Measures and Problems. *J Pers Med*. 2022;12(8). doi: 10.3390/jpm12081295.
10. Cristian B. Hospital Resilience: A Recent Concept in Disaster Preparedness. *J Crit Care Med (Targu Mures)*. 2018;4(3):81-2. doi: 10.2478/jccm-2018-0016.
11. [MAItorohftpFSCoHBaRMaEIUoMS. 2019.](#)
12. Torrentira M. Combating COVID-19 pandemic: The best management practices of a designated hospital in Southern Philippines.

- Journal of Business and Management Studies*. 2020;2(2):11-5.
13. Amin-Tahmasbi H, Asgharpour M. Challenges of managing health centers during the COVID-19 pandemic. *Journal of Health Administration*. 2021;24(3):79-91. doi: 10.52547/jha.24.3.79.
 14. Willan J, King AJ, Jeffery K, Bienz N. Challenges for NHS hospitals during covid-19 epidemic. *BMJ*. 2020;368:m1117. doi: 10.1136/bmj.m1117.
 15. Azarmi S, Pishgooie AH, Sharififar S, Khankeh HR, Hejrypour SZ. Challenges of Hospital Disaster Risk Management: A Systematic Review Study. *Disaster Med Public Health Prep*. 2022;16(5):2141-8. doi: 10.1017/dmp.2021.203.
 16. Azarmi S, Sharififar S, Pishgooie AH, Khankeh HR, Hejrypour SZ. Hospital disaster risk management improving strategies: A systematic review study. *Am J Disaster Med*. 2022;17(1):75-89. doi: 10.5055/ajdm.2022.0421.
 17. Etchegaray JM, Thomas EJ. Comparing two safety culture surveys: safety attitudes questionnaire and hospital survey on patient safety. *BMJ Qual Saf*. 2012;21(6):490-8. doi: 10.1136/bmjqs-2011-000449.
 18. Shi L. Managing human resources in health care organizations. Burlington: Jones & Bartlett Publishers; 2006.
 19. Ebrahimi Rigi Z, Namjoo Z, Jabarpour M, Ahmadinejad M, Ahmadipour M, Mangolian Shahrabaki P, et al. Hospital challenges and managerial approaches to combat COVID-19 outbreak: a qualitative study in southeastern Iran. *BMC Health Serv Res*. 2023;23(1):690. doi: 10.1186/s12913-023-09631-0.
 20. Ravaghi H, Naidoo V, Mataria A, Khalil M. Hospitals early challenges and interventions combatting COVID-19 in the Eastern Mediterranean Region. *PLoS One*. 2022;17(6):e0268386. doi: 10.1371/journal.pone.0268386.
 21. Fegert JM, Vitiello B, Plener PL, Clemens V. Challenges and burden of the Coronavirus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality. *Child Adolesc Psychiatry Ment Health*. 2020;14:20. doi: 10.1186/s13034-020-00329-3.
 22. Labaf A, Jalili M, Pooyan EJ, Mazinani M. Management of COVID-19 crisis in Tehran university of medical sciences hospitals: challenges and strategies. *Journal of School of Public Health & Institute of Public Health Research*. 2021;18(4):fa355-fa71, en72.
 23. Irandoost SF, Yoosefi Lebni J, Safari H, Khorami F, Ahmadi S, Soofizad G, et al. Explaining the challenges and adaptation strategies of nurses in caring for patients with COVID-19: a qualitative study in Iran. *BMC Nurs*. 2022;21(1):170. doi: 10.1186/s12912-022-00937-8.
 24. Najafi M, Arab M, Pouragha B, Nazari M, Rajaei R, Vaziri-Seta M, et al. Challenge of Managing Hospitals during the COVID-19 Pandemic: A Qualitative Study. *Evidence Based Health Policy, Management and Economics*. 2023. doi: 10.18502/jebhpm.v7i3.14286.
 25. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004;24(2):105-12. doi: 10.1016/j.nedt.2003.10.001.
 26. Guba EG, Lincoln YS. Competing paradigms in qualitative research. *Handbook of qualitative research*. 1994;2(163-194):105.
 27. Plagg B, Piccoliori G, Oschmann J, Engl A, Eisendle K. Primary Health Care and Hospital Management During COVID-19: Lessons from Lombardy. *Risk Manag Healthc Policy*. 2021;14:3987-92. doi: 10.2147/RMHP.S315880.
 28. Li L, Gong S, Yan J. Covid-19 in China: ten critical issues for intensive care medicine. *Crit Care*. 2020;24(1):124. doi: 10.1186/s13054-020-02848-z.
 29. Association AH. Data brief: health care workforce challenges threaten hospitals' ability to care for patients. *Updated October*. 2021.
 30. Mohammadi F, Tehranineshat B, Bijani M, Khaleghi AA. Management of COVID-19-related challenges faced by EMS personnel: a qualitative study. *BMC Emerg Med*. 2021;21(1):95. doi: 10.1186/s12873-021-00489-1.
 31. Al-Dabbagh ZS. The role of decision-maker in crisis management: A qualitative study using grounded theory (COVID-19 pandemic crisis as a model). *Journal of Public Affairs*. 2020;20(4):e2186. doi: 10.1002/pa.2186.

32. Tanne JH. Covid-19: FDA approves Pfizer-BioNTech vaccine in record time. *BMJ*. 2021;374:n2096. doi: 10.1136/bmj.n2096.
33. Shrivatsa I. The impact of the Covid-19 pandemic on health insurers. *Chicago Fed Letter*. 2022;471:1-5. doi: 10.21033/cfl-2022-471.
34. Taremwa IM, Ashaba S, Naggayi BRK, Kayongo B, Nimwesiga C, Ayebazibwe C, et al. Psychosocial Challenges of the Coronavirus Disease-2019 Pandemic Among Frontline Health Care Providers and Their Coping Mechanisms at Mbarara Regional Referral Hospital, Southwestern Uganda. *Psychol Res Behav Manag*. 2023;16:549-60. doi: 10.2147/PRBM.S399687.
35. Aroosiya MM, Ithrees M, Farwis M. Impact of motivation on employee job satisfaction: with special reference to health workers during the Covid-19 pandemic. *Journal of Contemporary Issues in Business and Government* | Vol. 2021;27(2):6395.
36. Malik M, Rehan ST, Malik F, Ahmed J, Fatir CA, Hussain HU, et al. Factors associated with loss of motivation and hesitation to work amongst frontline health care providers during the COVID-19 pandemic: A cross-sectional survey from a developing country. *Ann Med Surg (Lond)*. 2022;83:104766. doi: 10.1016/j.amsu.2022.104766..
37. Lalonde C, Roux-Dufort C. Challenges in teaching crisis management: Connecting theories, skills, and reflexivity. *Journal of Management Education*. 2013;37(1):21-50. doi: 10.1177/1052562912456144.
38. Jachetti A, Colombo G, Brignolo-Ottolini B, Franchi J, Solbiati M, Pecorino Meli M, et al. Emergency department reorganisation to cope with COVID-19 outbreak in Milan university hospital: a time-sensitive challenge. *BMC Emerg Med*. 2021;21(1):74. doi: 10.1186/s12873-021-00464-w.
39. Setola N, Naldi E, Arnetoli MV, Marzi L, Bologna R. Hospital responses to COVID-19: evidence from case studies to support future healthcare design research. *Facilities*. 2022;40(1/2):131-45. doi: 10.1108/F-03-2021-0023.
40. Maleki H, Tabatabaie F, Bagherinik M, Azizmohamadi S, Laka S, Mohajeri Iravani M. Some clinical features and supportive therapies in Covid-19 patients died in Hajar Hospital, Tehran, Iran. *Complementary Medicine Journal*. 2021;11(2):154-65. doi: 10.32598/cmja.11.2.1049.2.
41. Iyengar K, Bahl S, Raju V, Vaish A. Challenges and solutions in meeting up the urgent requirement of ventilators for COVID-19 patients. *Diabetes Metab Syndr*. 2020;14(4):499-501. doi: 10.1016/j.dsx.2020.04.048.
42. Ndayishimiye C, Sowada C, Dyjach P, Stasiak A, Middleton J, Lopes H, et al. Associations between the COVID-19 Pandemic and Hospital Infrastructure Adaptation and Planning-A Scoping Review. *Int J Environ Res Public Health*. 2022;19(13). doi: 10.3390/ijerph19138195.
43. Lalani K, Helton J, Vega FR, Cardenas-Turanzas M, Champagne-Langabeer T, Langabeer JR. The Impact of COVID-19 on the Financial Performance of Largest Teaching Hospitals. *Healthcare (Basel)*. 2023;11(14). doi: 10.3390/healthcare11141996.
44. Razu SR, Yasmin T, Arif TB, Islam MS, Islam SMS, Gesesew HA, et al. Challenges Faced by Healthcare Professionals During the COVID-19 Pandemic: A Qualitative Inquiry From Bangladesh. *Front Public Health*. 2021;9:647315. doi: 10.3389/fpubh.2021.647315.