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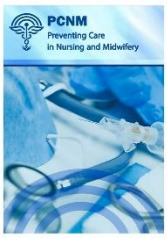

Original Article

Exploring Healthcare Providers' Experiences of the Preventive Measures and the Challenges of the COVID-19 Pandemic: A Qualitative Study

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Abstract

Background: COVID-19, a universal crisis and a communicable disease with a super-spreading characteristic, has necessitated crucial prevention and control measures. Identifying the challenges and obstacles in this process can help in addressing and resolving them.

Objectives: This study aimed to explore healthcare providers' experiences of the preventive measures and the challenges of the COVID-19 pandemic.

Methods: This descriptive qualitative study was conducted at Lorestan University of Medical Sciences in 2020. Data collection was performed by in-depth face-to-face interviews with 23 Healthcare Providers (HCPs) who were recruited purposefully. The data were analyzed using conventional content analysis with the Graneheim and Lundman approach using the constant comparison technique. Qualitative data management was performed in MAXQDA 10.

Results: The qualitative data analysis yielded 5 categories, 10 subcategories, 29 ancillary categories, and 1,479 meaning units. Two themes that emerged in this study were “COVID-19 as a Shock” and ‘COVID-19 as an empowering challenge”.

Conclusion: In this study, HCPs perceived the COVID-19 pandemic within the health system as both a devastating shock and a promoting factor, an experience that opened their eyes to the future. According to this lesson, policy and decision makers have to predict other crises like COVID-19 and have a well-defined plan to manage them.

Implications for Nursing and Midwifery Preventive Care

- Nurses should enhance their knowledge and skills to strengthen preventive care approaches against emerging diseases.
- Hospital managers must empower frontline staff through targeted training programs and regular preparedness drills.
- Health policymakers should develop proactive policies integrating preventive care strategies to effectively address future emerging disease challenges.

Introduction

COVID-19 emerged in Iran with the reporting of two deaths on February 19, 2020 [1]. The World Health Organisation (WHO) announced COVID-19 as a pandemic due to its spreading quickly around the world on March 11, 2020 [2]. During the first two years of the COVID-19 pandemic, more than 418.6 million people were infected, and 5.8 million died worldwide, which demonstrated the super-spreading characteristic of COVID-19 [3]. Despite the pandemic's abatement, the disease has not been eradicated and continues to cause daily infections and deaths around the world. So, after 5 years, at the time of writing this article (July 20, 2025), the total number of cases worldwide is 778,365,795, and the number of deaths is 7,098,155 [4].

The statistics presented indicate the super-spreading nature of COVID-19, which makes it necessary to implement preventive measures against that. Considering that Coronavirus transmits through airborne and direct contact, public health measures, including rapid diagnosis, quarantine, and adherence to universal precautions consisting of respiratory and eye protection as well as hand washing, would be critical and essential management measures to reduce the spread of COVID-19. Indeed, the mentioned actions as primary or secondary preventive measures are the main strategies that HCPs need to observe, as well as they have to train and encourage the public to adhere to them [5].

The reality is that we are still grappling with COVID-19. Most people around the world are still susceptible to SARS-CoV-2 and can be reinfected by SARS-CoV-2 [3]. It seems difficult to completely control the spread of COVID-19. Therefore, strict preventive measures cannot be ignored before the complete eradication of COVID-19 [6].

During the COVID-19 pandemic, all countries, including Iran, implemented a range of measures, such as establishing specialized COVID-19 clinical services, expanding tele-health facilities [7], equipping hospitals, and addressing the challenge of reducing social contacts [8]. Moreover, the focus has been on preventive measures and supportive and symptom-oriented treatments to control the disease [9]. However, health systems around the world faced diverse challenges in applying the mentioned preventive measures. On the one hand, preventive interventions against COVID-19, which focused on physical distancing and isolation, were often rejected by the public for various reasons, such as insufficient knowledge or unfavorable attitude [10], restriction in social interactions, and alteration in the routines of daily living [11]. On the other hand, the COVID-19 pandemic collapsed health systems of the countries in financial, workforce, and technical dimensions [12]. Based on issues mentioned above, it is critical to appraise the obstacles and challenges of prevention and control measures against COVID-19 in health systems by applying the proper solutions and replacing modified approaches, and the importance of public adherence to preventive measures of COVID-19 to control it [13]. To do this, since there was no clear prediction about COVID-19, researchers throughout the world faced challenges and even made predictions to continue the prevention and control of that. Italy [12], Australia [7], Finland [14], China [5, 15], Singapore [16], South Africa [17], and Colombia [18] were some countries that paid attention to this issue. Whereas contextual situations are different in various countries, their challenges might be varied. For instance, Italy and Australia, which have decentralized health systems in terms of legislation and budgeting, found it challenging during the COVID-19 pandemic [7, 12]. Although the health system in Iran is centralized and all provinces are under the headship of the health ministry in terms of finances and approaches generally, and in preventing and controlling COVID-19, the effects of that were uncharted about the COVID-19 crisis.

To address this gap, a qualitative approach was used, as it is an effective method for obtaining in-depth data, which may result in a better understanding of epidemics like COVID-19 and enable effective management [19]. The main goal of qualitative studies is to comprehend human experiences of some phenomena through a humanistic and interpretative approach. Emotions, perceptions, behaviours, and interactions within a particular setting are examples of human phenomena [20]. The actions taken by HCPs in response to the pandemic of COVID-19 are

clear, but the feelings, attitudes, and interactions of HCPs to the preventive measures taken by them based on their personal experiences as frontline workers are less well known.

Objective

This study aimed to explore and understand the experiences, perceptions, emotions, and interactions of healthcare providers (HCPs) regarding preventive measures and challenges related to the COVID-19 pandemic based on their individual experiences using a qualitative approach.

Methods

Study Design

This descriptive qualitative study was conducted from April to December 2020 in the Comprehensive Health Centers of Boroujerd, Lorestan, Iran. The purpose of the study was to explore healthcare providers' experiences of the preventive measures and the challenges of the COVID-19 pandemic.

Participants

The participants, including 23 HCPs with different expertise, consisting of family health, environmental health, and public health, were recruited into the study in a purposive sampling method. The inclusion criteria were to have expertise in health, to be at work during the COVID-19 pandemic, and to be able to talk about and present the experiences. All participants were entirely engaged during the COVID-19 pandemic because getting leave during this time was forbidden. No participants dropped out during the study.

Sampling

In qualitative studies, the sample size is determined based on data saturation. When new data, code, or categories do not emerge, data are saturated. In this study, 23 participants were entered into the study purposefully, whose characteristics are represented in Table 1. To access various in-depth experiences, we observed maximum variation in sampling in terms of age, gender, marital status, expertise, and work experiences.

Data Collection

By considering ethical considerations, data gathering was accomplished using unstructured face-to-face interviews in places and times preferred by participants from May to September 2020. To observe the physical distance, the first five interviews were conducted by video conference, but the rest of them were carried out in person by considering protective protocols against COVID-19, consisting of using face masks and maintaining physical distance.

A total of 23 interviews were conducted by KR, with an average duration of 48 minutes (range of 30 to 77 minutes). Interviews started with questions about demographic characteristics and work conditions to warm up.

The open-ended questions asked of all participants were: "What experiences did you have about prevention and control of COVID-19?" Since the COVID-19 pandemic was a crisis, participants spontaneously talked about the obstacles and challenges they experienced in the prevention of COVID-19. To enrich interviews, probing questions such as "What was your reaction in this situation?", and "What did you feel? etc. were asked. Interviews were recorded with the permission of the participants.

Table 1. Characteristics of the Participants (N=23)

Variable	Category	n (%) / Mean (SD)	Range
Age (years)		38.26 (7.64)	25-57
Gender	Male	10 (43.48%)	
	Female	13 (56.52%)	
Educational Status	Associate degree	2 (8.70%)	
	BSc	15 (65.22%)	
	MSc	6 (26.08%)	
Marital Status	Single	6 (26.09%)	
	Married	17 (73.91%)	
Work Experience (years)		13.63 (7.26)	2-30

Data Analysis

The gathering and analysis of the data were conducted concurrently. The interview was transcribed verbatim within 48 hours after the interview. According to Granheim and Lundman's approach, in the first step, interviews were repeatedly listened to gain a full understanding of them as units of analysis. Then, transcriptions were read word by word to extract and abstract the meaning units. In the next step, meaning units were categorized and labeled to make them abstract. In continuation, categories were compared and consolidated based on similarities and differences. Lastly, the main themes emerged by focusing on categories, patterns, and relations between them. The constant comparison approach had a significant role in all stages of analysis [21]. MAXQDA10 software was utilized to facilitate the process.

Trustworthiness

To ensure rigor, four criteria were considered: credibility, dependability, confirmability, and transferability. There was a long engagement with data. Moreover, all authors were involved in a long-term way in all stages, especially the analysis stage, to confirm the findings. We used peer checks and the panel of expert strategies as well. By the member check strategy, to ensure compatibility of given labels with the words of participants, two of them were asked to review codes, categories, and themes. In all strategies of member check, peer check, and the panel of experts, if there were cases of disagreements, discussions and clarifications were done to reach a complete agreement. The mentioned approaches are applied consistently with credibility. Peer checks and reporting based on evidence (quotations) were used to develop dependability. Reliability was guaranteed by bracketing, peer check, and member check. Although generalizability is low in qualitative studies inherently, we took advantage of maximum variation in sampling (by considering age, gender, marital status, expertise, and work experiences) and increased audibility by reporting step by step to progress the probable transferability of the findings.

Results

In this study, the mean age of participants was 38.26 (7.64) years. Most participants were female (56.52%), married (73.91%), and had a bachelor's degree (65.22%). Moreover, there were 5 categories, 10 sub-categories, 29 ancillary categories, and 1479 meaning units (Table 2).

Table 2. Themes, Categories, and Sub-Categories Extracted from Qualitative Data Analysis

Theme	Category	Sub-Category
1. COVID-19 as a Shock	**1.1. Phase of Alarm and Compensation**	1.1.1. Facing a Challenging Crisis of COVID-19
		1.1.2. Early Compensatory Measures with Limited Outcomes
	1.2. Progressive Phase	1.2.1. Struggling to Implement Preventive Measures
		1.2.2. Prevention in Opposition to Professional Acts and Routine Life
	1.3. Exhaustion Phase	1.3.1. Erosion as the Dominant Outcome of COVID-19
		1.3.2. Normalization and Ignorance of COVID-19 Prevention
		1.3.3. Unpredicted Statistical Fluctuation of COVID-19
2. COVID-19 as an Empowering Challenge	**2.1. COVID-19 as a Promoter Factor in the Health Domain**	2.1.1. Jumping Forward in the Health System
		2.1.2. Attitude Promotion Toward Hygiene and Prevention in Public
		2.1.3. Perceived Satisfaction with Health System Performance
	2.2. COVID-19 as an Eye-opener and Pattern for Future	

Data analysis resulted in the emergence of two themes, including "COVID-19 as a Shock" and "COVID-19 as an empowering challenge," that revealed the impact of the COVID-19 pandemic on the health system was a process-like shock stage. In all kinds of shock, the main event happening is hypoperfusion, which causes hypoxia in tissues and organs.

The heart, as a main organ, shows a reaction in three steps to compensate for hypoperfusion and hypoxia. In the first phase, the alarming phase, one would be aware of the situation and, by applying compensatory measures, tries to prevent failure in other organs. In the second phase, the progression phase, although the compensatory measures continue, organ failure begins.

Lastly, in the third phase, the exhaustion phase, whilst continuing compensatory measures, organs would fail without the possibility of recovery, as well as the heart would fail too.

In this study, HCPs, as the heart of the health system, experienced similar phases in controlling and preventing COVID-19. On the other hand, while they endeavored to overcome this frustrating situation and struggled to control and prevent it, they were empowered, and also the health system became developed, so they introduced COVID-19 as an empowering challenge.

Theme 1. COVID-19 As A Shock

This theme consists of three categories, including the "phase of alarm and compensation", "progressive phase", and "exhaustion phase", representing COVID-19 as a shock on the health system in the prevention domain.

1.1. Category: Phase of Alarm and Compensation

This category consists of 2 sub-categories, including "facing a challenging crisis of COVID-19" and "early compensatory measures with limited outcomes."

The sudden and unpredictable incidence of COVID-19 caused HCPs to come across many dilemmas, but they tried to address problems due to COVID-19 by applying compensatory measures.

1.1.1. Sub-Category: Facing Challenging Crisis of COVID-19

Some factors, such as being under stress from the disease, the infodemic phenomenon, and resource limitations, caused the participants to describe COVID-19 as a challenging experience.

On the one hand, COVID-19 was stressful because it had multiple facets, which made it challenging.

"COVID-19 manifests with various symptoms. It has thousands of faces as well; these are changing continuously. It alternatively manifests with gastrointestinal, neural, or respiratory signs, and sometimes it is with no signs." (Participant 9 (P)

Comprehensive fear and stress in all people were other challenging factors.

"People were scared much, especially those who had some chronic diseases. The fear transformed into us." (P4)

Indeed, fear in HCPs was associated with the probability of affecting them or their families by COVID-19. This situation caused hypersensitivity to taking preventive measures.

"Much sensitivity was developed in the community. It was a social phobia." (P1)

Massive but not right information about transmission and preventive measures against COVID-19 caused the infodemic phenomenon in public. On the one hand, excessive information transferred from media, virtual spaces, and scientific communities leads to the spreading of superstition.

"A significant portion of the data available on the internet was inaccurate, lacked scientific validity, and reflected superstitious beliefs." (P7)

On the other hand, massive and inconsistent information about disinfectants, the effectiveness of face masks, nutrition, and even abuse of opioids and alcohol was another factor in the infodemic phenomenon about COVID-19.

"There were challenges in the virtual world. For instance, it was suggested to drink alcohol to prevent COVID-19." (P10)

Resource limitation in various domains was another challenging factor.

The most paramount limitations were associated with personal protective equipment (PPE) and the

workforce. Some participants claimed statements below related to these matters:

"To establish specific centers for COVID-19, there was a shortage of physicians and staff." (P8)

"At the outset, there was a shortage of personal protective equipment (PPE), but now there are enough, without quality." (P15)

According to the participants, the shortage of hardware equipment was problematic, too.

"For teleconsultation, colleagues should make calls with their own cellphones. As well, they didn't have a computer." (P7)

Moreover, they talked about software deficits.

"The website to record COVID-19 data was really problematic." (P8)

Furthermore, weak social infrastructures were emphasized in the participants' claims.

"There was clear discordance between units. We were faced with personal and organizational resistance to accepting limitations. Low health literacy in the community was threatening. Some cryptanalysis caused a greater spread of disease. Generally, we were faced with social resistance." (P1)

1.1.2. Sub-Category: Early Compensatory Measures with Limited Outcomes

The most important measure considered before reacting to the crisis was formulating preventive guidelines for the public and all professions. By increasing knowledge about COVID-19, new and massive editions of the guidelines represented frequently that sometimes they were inconsistent.

"There are lots of guidelines. Reading and applying them is tough. Sometimes they include inconsistency about PPD." (P20)

Also, screening with a PCR test was another prior measure that caused some problems, too. Limitations in conducting tests, reporting the test results late, and low sensitivity were causes that resulted in some problems, such as distrust and not to observe quarantine.

"People must wait 6-7 days to get the test results." (P13)

"Many people said these tests were wrong. They didn't trust the results." (P10)

During the mentioned measures, there were various dilemmas. Participants' declarations revealed that during the pandemic, various decisions were made based on conditions due to COVID-19 to prevent and control that.

"Our decisions were an obstacle. One day, they decided to get a sample test of some people, and tomorrow the decision was changed." (P8)

Another problematic obstacle was a weakness in planning.

"Because of not have the same experience, we faced problems in planning and implementing measures." (P10)

The lack of consideration of principles in workforce management was another difficulty. On the one hand, workforce capacity was not used properly.

"One challenge was task division. Workforce management was not true. There was no need to engage all staff." (P17)

On the other hand, whilst work pressure was increasing, staff motivation was ignored.

"Staff motivation is not considered. The payment was not commensurate with work strain." (P1)

According to the participants' statements, paralleled decisions of managers caused energy waste among staff as well.

"Each manager expects us to do something in their domains. Managers who were responsible for communicable diseases, for pregnant mothers, or for elderly people ordered us something. We are really exhausted." (P16)

Against all disputes, the participants, by using personal resources, tried to meet limitations.

"We tried to cope with problems by doing some acts like applying a face mask, which was made by ourselves, or using a gun frequently." (P19)

1.2. Category: Progressive Phase

This category consists of two sub-categories, "struggling to implement preventive measures" and "prevention in opposition with professional acts and routine life," which revealed that health professionals accomplished various measures in different preventive levels, especially primary and secondary ones. However, they found the measures inconsistent with professional acts and life routines.

1.2.1. Sub-Category: Struggling to Implement Preventive Measures

To prevent COVID-19, HCPs implemented upper-hand plans based on the situation, flexibly and wisely. At first, routine activities became neutral and preventive measures had to do urgently with the same size of staff.

"Routine activities decreased. The only thing conducted was COVID-19 screening by call." (P4)

According to the participants, some preventive measures were major.

"We made calls with all households and screened them, as well as educated them about preventive measures. We follow high-risk groups daily." (P16)

Also, some measures were minor, which facilitated performing the major ones.

"We do transferring Coronavirus sample, following the test results, data recording, educating, and home disinfecting." (P10)

In addition, to get the maximum achievement, measures and interventions were altered according to the societal situations.

"We planned to prevent crowding. Clients came to centers at defined times that they arranged by calling." (P5)

Learning about this new disease and teaching them were other measures done by HCPs to prevent COVID-19.

"The most paramount activities we did were providing educational content and knowledge transfer in cyberspace." (P20)

1.2.2. Sub-Category: Prevention in Opposition to Professional Acts and Routine Life

COVID-19 stigma was an obstacle to preventing it. Most people who were affected or suspicious of COVID-19 and their families considered it a label, so they denied or concealed it.

This matter was inconsistent with the preventive guideline.

"At first, people would not like others to know they were affected by COVID-19. In follow-ups, they denied completely. They considered COVID-19 a stigma." (P10)

Physical distance was an obstacle to routine care. People who needed care, such as pregnant women, refused to refer to health centers to observe physical distance.

"We call pregnant women or people who are affected by chronic diseases to come and take care, but they refuse because they are scared of COVID-19." (P6)

Physical distance restricted social interactions between staff and the public.

"I was in touch with infected people and I supposed myself contaminated. So I was in a separate room far away from my family. I visited my parents just by video-call." (P13)

HCPs experienced problems in their personal life because of becoming neutral in terms of family roles due to being at work continuously. Most of the participants claimed that the routine of their family life, as well as the parental roles they were influenced.

"It has a devastating effect on my family." (P11)

"My wife and I are colleagues. Kindergartens were closed, and we faced problems caring for our child." (P17)

1.3. Category: Exhaustion Phase

This category consists of three sub-categories of "erosion as dominant outcome of COVID-19", "normalization and ignorance of COVID-19 prevention", and "unpredictable statistics fluctuation of COVID-19", revealing exhaustion of staff as the heart of the system.

1.3.1. Sub-Category: Erosion as the Dominant Outcome of COVID-19

Exhaustion and frustration were the most serious experiences of HCPs.

"Now, the biggest problem is frustration and moodiness in staff." (P4)

Alterations in work nature due to COVID-19, including time pressure to do interventions, the necessity of using PPD, mandatory in doing vast and replicated activities, and reporting daily statistics, were some of the reasons why staff felt exhausted.

"Wearing a face mask, shield, and glasses is very tough." (P17)

A limited number of staff and an emergent situation due to COVID-19 resulted in preventive measures against COVID-19 being added to routine tasks so

which caused frustration in HCPs. Also, the leave ban and straight work made it exaggerated.

"Plus routine tasks, we should conduct screening. We didn't have leave. We felt excessive fatigue. We were under much pressure." (P5)

Discrimination was another annoying experience of the participants. They felt bias between themselves and staff in other organizations and hospitals. Discrimination was felt in terms of payments, designation of PPD, and valuing staff efforts.

"There was a lot of discrimination in allocating PPD into different wards." (P19)

"Staff in other organizations got extra payment because of COVID-19, but we were in the middle of the COVID field and took the risk of death, while we received nothing." (P11)

1.3.2. Sub-Category: Normalization and Ignorance of COVID-19 Prevention

At the beginning of the pandemic, developing this disease was scaring all people. By the time, due to increasing knowledge about preventive measures as well as economic problems, COVID-19 became normalized and ignored.

"COVID-19 has become normal for some people, and stress about that has decreased." (P9)

1.3.3. Sub-Category: Unpredicted Statistical Fluctuation of COVID-19

The fluctuation of COVID-19 statistics was the outcome of stopping quarantine and considering COVID-19 as a normal situation.

"During the quarantine period, the disease load declined, but then it increased again because people started their work due to economic difficulties." (P12)

Theme 2. COVID-19 as an Empowering Challenge

This theme consists of two categories of "COVID-19 as a promoter factor in the health domain" and "COVID-19 as an eye-opener and pattern for future", indicating that COVID-19 shock had promoter effects on the health system. In other words, it was an empowering and eye-opening factor.

2.1. Category: COVID-19 as a Promoter Factor in the Health Domain

This category consists of three sub-categories of "jumping forward of health system", "attitude promotion toward health and prevention in public", and "perceived satisfaction of health system performance", revealing that this pandemic had positive impacts on the health system and made internalized hygiene attitudes in society.

2.1.1. Sub-Category: Jumping Forward in the Health System

Preventive interventions promoted the health system by developing alterations in its structures and processes. Some positive hygiene outcomes were becoming more important than treatment, structural changes in hospitals, including standardizing isolation rooms, as well as structural changes in schools, bakeries, etc.

"This crisis promoted the health system." (P14)

"COVID-19 increased the hygiene level of stores and clientele washed their hands, as well as stores installed sinks and detergents." (P17)

The health system integration was a positive outcome of COVID-19 because all staff in the health system were focused on the prevention and treatment of COVID-19.

"COVID-19 was a good experience because the whole system integrated to fight against the Coronavirus." (P13)

"All staff became concordant and it improved our efforts." (P2)

2.1.2. Sub-Category: Attitude Promotion Toward Hygiene and Prevention in Public

Preventive measures improved health attitudes in the public, which were tough to change before. Some achievements of these changes included health protection and self-care, hand washing, contributing with HCPs, and observing physical distances.

"Some cultures have changed. COVID-19 has developed some new cultures." (P10)

"People who did not pay attention to hygiene before, observe all hygiene protocols now." (P3)

2.1.3. Sub-Category: Perceived Satisfaction with Health System Performance

The health system's functions in the prevention and control of COVID-19 were desirable and satisfactory.

"People were satisfied with education. They were happy about calling and following them." (P4)

"Totally, there was satisfaction about the health system." (P10)

2.2. Category: COVID-19 as an Eye-Opener and a Pattern for the Future

In this category, whilst participants introduced COVID-19 as a new and painful experience, they considered it as an invaluable experience which can be an exemplar or pattern to managers and the public. The participants affirmed this based on the statements below:

"The COVID-19 pandemic was a valuable experience for the system. It was a kind of maneuver, practice, and a real fact." (P1)

"COVID-19 was a big challenge but a good experience. Indeed, it made us stronger to face similar challenges." (P8)

Discussion

In this qualitative study aimed at exploring the healthcare providers' experiences of the preventive measures and the challenges of the COVID-19 pandemic, two themes, including "COVID-19 as a Shock" and "COVID-19 as an empowering challenge," emerged.

"COVID-19 as a Shock"

This theme represented that HCPs, as the heart of the health system, perceived COVID-19 as a shock. In this shock, they experienced three stages of shock, including "Phase of alarm and compensation", "progressive phase", and "exhaustion phase".

Phase of Alarm and Compensation

Initially, under the concept of "Phase of alarm and compensation", HCPs at the start of the COVID-19 pandemic recognized themselves in the alarm phase due to fear, resource restrictions, and rumors. Consistent with our findings, in other studies, fear was the prominent experience, so HCPs were scared of affliction with COVID-19 and transmitting it to others [15]. Also, since HCPs were scared of contamination with COVID-19, they were anxious about resource limitations and complaints from care receivers [5]. Fear of unknown and unrevealed things was the dominant experience of the community as well. Various restrictions in PPD and different infrastructures were significant events. COVID-19 showed that health resources were limited even in wealthy countries [7]. In parallel, China [5] and Australia [7] encountered these limitations. Therefore, it is crucial for all countries to anticipate crises like COVID-19 and maintain a stockpile of necessary resources and equipment. In Singapore, based on the experience of the SARS Pandemic, a stock of PPD for six months was supplied [16]. Another phenomenon of this phase was rumors due to being unknown of COVID-19. In a study by Jean-Baptiste et al, the results indicated that the wrong information was a stressor in the community [22]. In the compensation phase, the preparation of a preventive guideline and conducting screening with a PCR test were compensatory measures. Despite many efforts in these domains, some conflicts in guidelines, directional decisions with negative effects, and failures in planning have been observed. But staff coped with this situation through self-management approaches. Guideline composition and informing the public were insisted measures in all countries. In Singapore, guidelines have become up-to-date frequently and were announced to the public by social media and news conferences [16]. However, guidelines contained some incoherence or discrepancy due to being them up-to-date frequently. In China, one of the barriers to disease control was a continual modification of guidelines [5]. Clear, right, and on-time communication of the government with the community was a main goal because this communication channel is critical to make clear guidelines [16]. To do this, health ministers of countries often elucidated imprecise or shady information by using TV platforms, radio, social media, and short-message systems (SMS). They also encouraged people to follow true news through

formal channels [16, 17]. In this phase, there were some weaknesses in staff and resource management. This phenomenon was common at the first stage of all crises. The health system of Iran, like other countries such as Italy, has been frustrated in terms of financial, workforce, and technical resources [12]. Waste and ineffective application of healthcare resources as another challenge that was a global dilemma [8]. Shortage of workforce was a common challenge in the COVID-19 pandemic [5, 14]. Therefore, appropriately managing the workforce was critical. In other words, improvement of supervising and optimising the workforce was an important approach in these conditions [5].

Progressive Phase

In the second stage of the shock, "progressive phase", the staff in all parts of the health system tried to implement the same measures of the compensatory phase, including announcing the guidelines and screening to prevent and control COVID-19. But the preventive measures developed predominant changes in the routine life of staff and people. In this phase, the focus of all efforts of staff efforts was on preventive measures. Alongside this, in a study by Liu et al, one of the main themes was "being fully responsible for patients," which indicated HCPs in China considered themselves responsible for caring for patients [15]. Moreover, screening by PCR test and self-report via telecommunication were the essential measures. Besides, in other countries, they were forceful intermediation, and even increasing the test number was a kind of achievement [14, 16]. Furthermore, in many countries, technology was applied for screening nicely. One of the Tec-based implications was contact tracing by various applications on cellphones. The Tracetogether App was used in Singapore and sent to the community via Bluetooth [16]. In Finland, in addition to contact tracing, people conducted self-assessment and self-reporting by Omaolo Software on their cellphones [14]. To prevent and control COVID-19, some less important actions were considered distance-work for staff at high-risk and distance-care for some populations like pregnant women. The same measures were done in Singapore [16]. In Iran, tele-consultation was taking place by phone, SMS, and social networks. In many countries, consist of Australia, Finland, Singapore, and China, people were cared for by tele-health [5, 7, 14, 16]. Also, in some cases, people received drugs at home [16]. Indeed, in situations like this, to forbid people from gathering in hospitals as well as spreading infection, patients have to get consultation and visitation from online physicians [23]. Some improper situations emerged due to the preventive measures of COVID-19. On the one hand, ceaseless work and fear of transmission of COVID-19 to others caused impairments in routine life and social interactions for staff. Williams et al, in their study, introduced preventive actions as the factors of all losses, including loss of social interaction, loss of income, and loss of structure and routine [24]. In the study by Jean-Baptiste et al, the main themes were financial pressures due to job alterations and being away from families [22]. Studies have shown that, in COVID-19 situations, vulnerable groups like the elderly should be paid attention to in terms of isolation and psycho-social issues. Truly, impairment of social interactions was a common dilemma among staff [15]. Stigmatisation of COVID-19 was a common phenomenon in societies [17], which was an obstacle to controlling the disease. Lastly, the hardship of observing hygiene guidelines was a factor that influenced the coherence of preventive actions by the community. In a study by Williams et al, participants stated they considered high self-adherence to guidelines, but they were seeing or hearing non-adherence in other people [24].

Exhaustion Phase

In the "exhaustion phase", the common incident was staff erosion. Another consequence of changes in guidelines by the community was a statistical fluctuation in contaminated persons and the emergence of various waves of COVID-19. Staff exhaustion resulted from continuous work and improper PPD in terms of quality and quantity. During the COVID-19 pandemic, work-related challenges, particularly within the health system, were common [22]. Increasing workload, straight

work, and exhaustion were the most common complaints of staff in all places [5, 22] which caused physical and psychological erosion in them [5, 15]. In a study by Xu et al, participants pointed to hard tasks and insufficient capacity under the concept of "challenges of working on COVID-19 wards". Indeed, they stated that although routine cares were stopped, work hours increased because they were on-call for online consultations and visits. As well as they had complained about the workforce shortage [5]. Low quality and quantity of PPD were universal problems. Therefore, COVID-19 taught countries that financial facilities of health systems should be more flexible for emergencies like COVID-19 [12]. Moreover, sufficient PPD and making guarantee staff safety and conservation should be concentrated [23]. In other words, staff should be supported sufficiently [5, 25]. Despite much struggling to prevent and control COVID-19, ignorance and considering the COVID-19 situation normal were other experiences of participants. The predominant reason for ignorance was exhaustion of the public from restrictions due to preventive measures and their interference with routine life and economic pressure. Unexpected and disastrous effects of the COVID-19 pandemic on health systems and socio-economic situations have been reported in other countries such as South Africa, America, and Italy [12, 17, 22].

"COVID-19 as an Empowering Challenge"

This theme showed that COVID-19 has had positive effects on the health system as well as the public. The HCPs illustrated that "COVID-19 as a promoter factor in the health domain" and "COVID-19 as an eye-opener and pattern for future".

COVID-19 as a Promoter Factor in the Health Domain

Under the concept of "COVID-19 as an empowering challenge", findings showed that it has had some positive impacts. On the one hand, to prevent COVID-19, essential alterations were conducted in the health system in terms of processes and structures. On the other hand, the whole health system became integrated against COVID-19. Developing tele-health [26], special services for COVID-19, and contributing governmental and private wards were modified due to COVID-19 [7]. It is worth noting, COVID-19 changed the old-fashioned attitude that "treatment privileged prevention" in the minds. Therefore, it became clear to all that the most paramount measure related to public health is just primary prevention [7].

COVID-19 as an Eye-Opener and a Pattern for the Future

Although, common perception of COVID-19 was a challenging crisis, the participants perceived it as an eye-opener and instructor for planning for the future. Therefore, Chua et al, according to COVID-19 experiences, proposed some points for future planning, including [1] clearness in reporting statistics to encourage the community to accept preventive policies more, [2] defining a clear legal framework to forbid spreading inexact information, and [3] providing possibility of contact tracing by developing information technology and more focus on populations at risk [16]. Al Fannah et al insisted on providing communicational channels between respondents and healthcare providers, sharing precise information and sufficient staff support in the same crisis [25]. In Italy, the results found were firstly, the effectiveness of decentralization and separation of health services is limited, while national integration is a more effective act. Secondly, financial facilities of the health system should be more flexible for emergent conditions. Finally, to provide a reaction in emergent conditions, the contributing governmental and private sectors are critical [12]. The main message of the COVID-19 challenge to the world was to build a resilient and sustainable health system for the future. In line with this important task, necessary measures include developing a skilled and sufficient workforce, providing adequate personal protective equipment, and providing education to the community [27]. The most important limitation that we faced was the impossibility of using other ways of data gathering, such as observation and field study. Truly, because of the prevention of COVID-19, researchers could not be in the workplace of the participants.

Given the findings of this study and considering that the emergence of critical situations resulting from epidemics of infectious diseases or even crises resulting from chronic conditions such as old age is not far off, it is recommended that:

1. It is necessary to make predictions for similar situations and provide the necessary infrastructure to deal with those situations.
2. A stock of consumables has to be prepared and periodically replaced based on expiration dates.
3. Gradual and continuous education has to be provided to the public through national media and social media.
4. Relevant training should be included in the educational curricula of various disciplines to train skilled human resources for the future.

Conclusion

In this study, based on health professionals' experiences, the COVID-19 pandemic manifested itself in the health system as a devastating shock. At first, in the alarm phase, early compensatory measures to prevent and control the disease were started by health professionals, but there were many limitations in terms of required facilities and management. Then, in the progressive phase, preventive interventions continued. But different issues, such as a shortage of workforce, weakness in management, and restrictions due to hygiene guidelines in social interactions, interfered with their routine life, pushing them to the frustration phase. In the last phase, people in the community were exhausted and ignored COVID-19 because of economic pressures and limited social interactions. Nevertheless, the positive outcomes of this crisis are undeniable. Indeed, in addition to conducting preventive measures, the health system developed alterations in terms of the processes and structures. Attitude toward the priority of prevention over treatment was a valuable achievement in the community. Lastly, COVID-19 is perceived as an eye-opener experience for the future.

Ethical Considerations

This study was approved by the Ethical Committee of Lorestan University of Medical Sciences (IR.LUMS.REC.1399.019). Before obtaining written consent, participants were informed completely about the aim of the study, to maintain the confidentiality of data, and to maintain anonymity. Indeed, the numbers were used instead of their names. Moreover, recorded voices and transcribed interviews were sustained in personal computers with passwords by the authors.

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Conflict of Interests

The authors have no conflicts to declare.

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Authors' Contributions

Rashidi K., Goudarzi F., and Goudarzi H. participated in all stages of the research, including study conception and design, data acquisition, and data analysis and interpretation. Hasanvand Sh. contributed to data analysis and interpretation. Goudarzi F. drafted the initial manuscript. All authors critically revised the manuscript for important intellectual content and approved the final version.

Artificial Intelligence Utilization for Article Writing

Artificial intelligence was not used at any stage of this research, including article writing.

Data Availability Statement

The data are available from the corresponding author upon reasonable request.

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