

# Individual and working experiences of healthcare workers infected with COVID-19: A qualitative study

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## Abstract

**Introduction:** The major burden of the COVID-19 pandemic has been mainly on healthcare workers (HCWs) and as a result many of them have been afflicted with the disease thus far.

**Purpose:** The present study was an effort to investigate Tehran University of Medical Sciences HCWs' experiences of COVID-19 during the pandemic in Tehran, Iran.

**Methods:** This study is essentially a conventional qualitative content analysis. Twenty-six HCWs (including 7 physicians, 16 nurses, and 3 physiotherapists) were purposefully selected to participate in the study. The data were collected from April 2020 to January 2021 through semi-structured face-to-face interviews. The interviews were transcribed and then analyzed based on the Graneheim and Lundman method using MAXQDA 12.

**Results:** Based on the qualitative content analysis which resulted in 364 initial codes, three themes and eight subthemes were extracted. The extracted themes were "support," "control," and "improvement."

**Conclusions:** HCWs are in close contact with COVID-19 patients as part of their professional careers and the provision of quality patient care in times of crises is unattainable unless HCWs enjoy support and their own health is maintained. Making institutional, national, and international preparations for their protection is an obligation.

## KEYWORDS

content analysis, COVID-19, healthcare workers, Iran

## 1 | INTRODUCTION

The Chinese Center for Disease Control and Prevention detected some cases of pneumonia with an unknown etiology in January 2020 (Zhu et al., 2020). The common symptoms among them were fever, myalgia and fatigue, cough, sputum production, headache, hemoptysis, and diarrhea (Huang et al., 2020). Soon after, COVID-19 turned into a global health crisis, and currently, nations

all over the world are affected and involved (Shanafelt et al., 2020).

In Iran, two cases were detected and confirmed on 19 February 2020 to be COVID-19 positive in Qom, and the disease spread to all provinces shortly afterwards (Aghaali et al., 2020). There has been a sharp rise ever since in the number of patients, which has increased the workload and exposure of healthcare workers (HCWs; Xiang et al., 2020).

HCWs across all specialties and fields have encountered unprecedented challenges in patient care and personal safety, such as disease transmission risk and psychological distress, both for themselves and their family members. Frontline HCWs directly participate in the diagnosis, treatment, and care of COVID-19 patients and are at high risk of getting infected with the highly infectious COVID-19. Morbidity and mortality in HCWs not only compromise the workforce in healthcare settings but also affect the morale of HCWs and can cause public panic. A contingency plan for preparedness against emerging infectious diseases should be made available at the hospital, government, and national levels (Sun et al., 2020).

Although HCWs have accepted the risk of exposure to COVID-19 as a part of their professional lives, they undergo different experiences of service provision in the crisis (Adams & Walls, 2020). They need to cope with the social and emotional changes as well as the stress-inducing factors resulting from getting COVID-19 (Adams & Walls, 2020; Chen et al., 2020), and to prepare for this it is important to recognize and identify the spectrum of their experiences.

Knowing HCWs' experiences as patients infected with COVID-19 can be effective in identifying their problems, in solving them, and in promoting their physical and mental health which can result in better care given to patients. A physically and mentally healthy and well-equipped healthcare workforce is vital to a country's capability to manage COVID-19 cases effectively, and lessons can be learnt from their healthcare experiences to introduce novel working arrangements to help protect HCWs from infection. Understanding the psychological impact of the outbreak on HCWs, especially those in hospitals, is important in planning for future outbreaks of emerging infectious diseases. The present study, therefore, is a qualitative effort to investigate the HCWs' experiences of contracting the coronavirus.

## 2 | METHODS

### 2.1 | Design

This is a qualitative descriptive study which was conducted utilizing conventional content analysis method from April 2020 to January 2021.

### 2.2 | Sample and setting

The participants were purposefully selected from the HCWs (physicians, nurses, and physiotherapists) at Tehran University of Medical Sciences who were invited to participate. This population was selected since they have higher exposure to COVID-19. As a principal criterion, the participants had all

been infected with the coronavirus. Willingness to share their experience and informed consent to participate were the other inclusion criteria in the study. Interviewing continued for 10 months until data saturation was deemed to have been reached. Data saturation was achieved after the 23rd interview, yet to ensure the sufficiency of data collection, three more interviews were carried out.

### 2.3 | Data collection

The data were collected through semi-structured face-to-face interviews. The time and place for each interview were arranged cooperatively with the participants. At the beginning of each interview, the purpose of the study was explained to the participants. They were then requested to share their experience of contracting the coronavirus during the COVID-19 pandemic. The interviews commenced with a general question: "As a member of the treatment team who was infected with the coronavirus, please recount your experience in this regard." Based on the answers, such follow-up questions as "Could you elaborate?" or "Could you provide an example?" were asked. Each interview took between 30 and 60 min. They were all recorded and later transcribed verbatim.

### 2.4 | Analysis

The Granheim and Lundman method, used to analyze the data, incorporated five steps (Graneheim & Lundman, 2004). First, each interview was transcribed verbatim immediately after it was conducted. Second, the interview transcripts were reviewed several times to obtain a sense of the whole. Third, the transcription of each interview was taken as a unit of analysis, and the meaning units were identified, followed by a stage of giving an appropriate code to each meaning unit. The process of data analysis, coding, and the extraction of categories and themes was conducted through the data analysis software MAXQDA 12. Fourth, the codes were grouped into subcategories according to their conceptual similarities and differences, and the subcategories were extracted. Finally, the subcategories were compared with each other several times in order to identify their latent content.

### 2.5 | Trustworthiness

Credibility, confirmability, dependability, and transferability were the criteria used to ensure the trustworthiness of the findings in qualitative content analysis as developed by Lincoln and Guba (Hsieh & Shannon, 2005). In this study, credibility of the data was assured using two methods: checking the collected data by

members and by peers who have prolonged engagement with related topics, and considering maximum variation during sampling with cases purposefully as different from each other as possible. Conformability and consistency of the analysis were confirmed through discussions among the research team members and resolving disagreements. Transferability of the findings was attained by rich descriptive data collection and analysis to allow readers to match findings with their context. In addition, detailed and descriptive data analysis as well as the use of experts' experiences were utilized to achieve dependability.

## 2.6 | Ethical considerations

The project was approved by the research ethics committee of Tehran University of Medical Sciences (coded IR.TUMS.VCR.REC.1399.266). When recruiting participants, the purpose of the study was clearly explained. Then, informed consent was obtained. The participants had the right to decline or cease participation at any time throughout the study. Also, they were assured of the confidentiality of the data collected.

## 3 | RESULTS

Twenty-six members of the treatment team participated in this study. Table 1 summarizes the broad sociodemographic characteristics of the participants.

The analysis of the data revealed 364 codes, three categories, and eight subcategories. As shown in Table 2, the three major extracted categories were "support," "control," and "improvement."

### 3.1 | Support

The spread of the infection and the ensuing crisis, and the soaring demand for handling patients and the disease, have placed HCWs as well as the community under unusually heavy pressure. To deal with the pressure, support from all quarters is required: supporting oneself and being supported by others. This category consisted of four sub-categories: "self-support in the midst of crisis," "family support," "the accompanying colleagues," "social stigma, an unbelievable encounter."

#### 3.1.1 | Self-support in the midst of crisis

Based on the participants' responses, they had resorted to different support systems during their COVID infection.

TABLE 1 Background characteristics of the sample,  $n = 26$

Age (years)	39 ± 2.8
Work experience (years)	15 ± 2.3
Gender	
Male	9 (34)
Female	17 (66)
Marital status	
Single, never married	6 (20)
Married	18 (71)
Divorced	2 (9)
Profession	
Physician	7 (26)
Nurse	16 (62)
Physiotherapist	3 (12)

Note: Values are number (%) or mean ± SD.

TABLE 2 Obtained categories and subcategories from content analysis of the participants' experiences of being afflicted with the coronavirus

Category	Subcategory
Support	Self-support in the midst of crisis
	Family support
	The accompanying colleagues
	Social stigma, an unbelievable encounter
Control	Controlling the disease by observing the protocols
	Controlling the disease through others
Improvement	Adopting a new viewpoint on patient care
	Traversing a new horizon for the rest of life

Among these, they mentioned self-support and taking advantage of all the personal experiences and capabilities so as to overcome the disease and recover sooner to get back to a normal life. In this regard, one of the interviewees stated:

*I found myself the best person to help me. I tried to be happy, and eat properly despite my inappetence. I tried to stop making negative thoughts. I had to remain strong and overcome the disease. (P22, physician)*

Some of the HCWs experienced negative feelings such as depression and posttraumatic stress disorder. Yet, in some cases, they resiliently encountered the disease and its consequences from the beginning, during the treatment, and even long after recuperating from the disease. As one of the participants stated:

*I felt a bit depressed. I was at home and the news of a patient's death stung me and I was moved to tears. I tried not be affected by the death news. (P11, physician)*

In addition, the death of colleagues exacerbated the situation during their affliction.

*Many of my colleagues passed away. This infected doctor told me she would die, and I denied. A week later, sadly she passed away. (P11, physician)*

*I didn't have much worries. I love my profession, my job, and every one of my patients. I got short of breath with all my patients, I laughed with them all, I cried with them, and had no worries at all. Even if I had died for this disease, I would have accepted it with open arms. Because if one person could be cured, a family or even a community would get through. I wasn't even worried that I may get infected and die, and I worked for the patients whole-heartedly. (P11, physician)*

### 3.1.2 | Family support

Based on the participants' experiences, family support played an inevitable role during the time they were suffering from the disease. This role unfolded in two forms: on the one hand, the concern the HCWs felt for the family and friends and the probability of cross infection, and on the other hand, the unavoidable need they felt for support from their family and friends.

During the pandemic, many of the HCWs have opted to live alone and away from their families so as not to infect relatives and friends. As a participant stated:

*My major concern was for the people who lived with me. After all, we have chosen this profession, not them. (P16, physiotherapist)*

Being away from the family while being afflicted and living in the convalescence facilities of the hospital, as well as fear of the continuation of the disease, disablement resulting in inability to work, death, and the unknown future of those under the support of the participants, were among the experiences mentioned. One of the interviewees said:

*My children were my greatest concern. When I found out I am infected, all I thought about was my children. (P20, physician)*

### 3.1.3 | Accompanying colleagues

The need to receive professional care at home during the affliction highlighted the role of colleagues during an HCW's infection. Care provided by colleagues was one of the experiences of the HCWs which, as they pointed out, made it easier for them to endure the suffering:

*My colleagues constantly called me at home and brought my medications. One day, I felt terrible. One of them came over and gave me IV serum and my medications. (P14, nurse)*

The need to rest and get leave is essential for the recovery of HCWs. Due to the infection of a considerable number of HCWs and the lack of substitutes, many of the respondents had to get back to work prior to a full recovery:

*Many of us had been infected and had gone on sick leave. But the leave was not more than a week, and we had to return to work, and it was like the disease was cyclically travelling among colleagues. (P10, nurse)*

### 3.1.4 | Social stigma, an unbelievable encounter

According to the participants, although at the beginning of the pandemic HCWs were regarded as health heroes, the kudos was later replaced with a social stigma, which proved to be an unpleasant experience. Gaining the support of society and the people around them played a vital part in tackling the crisis. Many of the participants pointed out that their acquaintances avoided them simply because they were HCWs. As a respondent stated:

*Many of the relatives and friends were afraid of having contact with me. At times, my wife addressed them and retorted that they would not catch corona through the line if they made a call. (P19, physiotherapist)*

The bitterness of dealing with the social stigma had upset many of the participants in this study. They expected to be treated more respectfully in society particularly when they were under considerable intense pressure:

*Our job is onerous as it is. The least they can do is not make it more difficult with their behavior and manner. We have to hear many things and brush them aside and put up with that. (P6, nurse)*

### 3.2 | Control

The crisis in the society needs to be controlled, through either self-control or controlling the situation through the agency of others. “Controlling the disease by observing the protocols” and “controlling the disease through others” are the subcategories subsumed under this theme.

#### 3.2.1 | Controlling the disease by observing the protocols

Limited and insufficient equipment together with a lack of appropriate educational protocols at the onset of the outbreak were mentioned by the participants as one of the factors contributing to their infection.

*Our facilities and equipment were limited. Our wards have not been made for corona-infected patients whatsoever. What we wore and our masks were non-standard.* (P22, physician)

Based on the experiences expressed, due to the difficulty of using the devices as well as the problems and allergies it caused on the skin and also in breathing, the participants did not utilize personal protective equipment properly.

*In the early days, I wore a gown, gloves, and a shield. I got heat rash all the time, and after a week I just couldn't stand it, and I started wearing a simple mask only, and my gloves kind of irked me and I couldn't work having them on. This is the reason of my infection I suppose, and I have a pang of conscience about it.* (P13, physician)

*Having your PPE [personal protective equipment] on for 12 hours and visiting 100 patients is easier said than done. You cannot even walk, [but] you have to feel the patients, you have to talk to the patients to be able to treat them.* (P26, physician)

#### 3.2.2 | Controlling the disease through others

Failure to observe health protocols and non-compliance with the principles of disease prevention were some of the issues stated by the respondents. The instruction of coronavirus prevention protocols and controlling the infection through teaching the protocols to others are the social solutions to control the disease.

*There is high mortality here. Many of the colleagues get infected too. Some even lost their lives. When I see they don't comply or even when we warn the escorts to wear a mask and they don't care, sometimes I literally get discouraged.* (P7, nurse)

Encouraging the cooperation of the patient, families, and the community, as well as the need for social support in dealing with the psychological, mental, and social damage resulting from the coronavirus pandemic crisis were among the issues mentioned by the participants. In this regard, one of the nurses stated:

*Seeing and realizing that the difficulties of your work are recognized and the struggle you are going through is respected paves the way for further effort to fight the disease.* (P9, nurse)

### 3.3 | Improvement

Shifting from the role of therapist to being a therapist who has become ill brought new experiences for improvement to the attention of the treatment team. Understanding the patient's condition improved the personality and work of the treatment team.

#### 3.3.1 | Adopting a new viewpoint on patient care

Getting infected with the coronavirus and the shift of the HCWs' role from a caregiver to a patient brought about new experiences for them. The bitterness and hardships of the disease provided them with a new perspective on the provision of care.

*When I was sick, I thought how hard it can be for a person to experience a package of physical and mental pain and a sense of loneliness because of isolation and fear. My disease course has made me value my patients more now and I can understand them.* (P17, nurse)

One of the physicians in the study shared his experience of the inability of science and education to deal with nature:

*We assume we dominate human knowledge, but when we engage in a disease, we realize that nature is far ahead and more powerful than we are.* (P26, physician)

### 3.3.2 | Traversing a new horizon for the rest of life

Improving personal skills and gaining a new horizon in the continuation of life have been among the individual solutions in facing the experience of infection. These feelings were reported in both positive and negative directions with regard to the participants' experiences. Feeling unclean, becoming obsessed with whether objects or people are infected with the coronavirus, and avoiding people and developing xenophobia and misanthropy were among the common feelings expressed by the participants.

*I've gotten obsessed and I constantly wash things. As soon as something gets in the house, it must be washed up first. We use masks and sprays the whole time. We have severed contact with everyone and don't mingle whatsoever anymore. (P25, nurse)*

In opposition to this feeling, a good number of participants equated the experience of coronavirus infection with the end-of-life experience, and once recovered, tried to make use of all the blessings and, knowing the value of every moment of life, thankfully drew on a carpe diem spirit to enjoy their second lives.

*I literally cherish my life more. On the 25th of the month, I felt so bad I wrote my will. I felt so terrible that I utterly gave up on life. From then on, I realized how sweet life was which I was unaware of, and I realized how much I've got to do, and I realized how many good things were there around the house and I hadn't noticed. (P21, nurse)*

## 4 | DISCUSSION

The findings of the study derive from the individual, family, professional, and social experiences related by the participants. HCWs in the study experienced a spectrum of unpleasant personal experiences such as depression, anxiety, and worry. This was in agreement with Brooks et al. (2020), who found that coronavirus-infected patients would experience significant distress appearing as anxiety, anger, confusion, and post-traumatic stress. The findings of Shigemura and colleagues also revealed that the consequences concerning mental health were more prevalent and had more lasting effects in comparison with the viral epidemic per se (Shigemura et al., 2020).

There may be no difference between a healthcare professional and an individual in the general population in

terms of illness, but there is a difference in attitudes toward the disease and a better understanding of the suffering patients. Another difference is that even though medical staff know that they are at risk of becoming ill, they still continue to work and care.

According to the participants' responses, HCWs expressed on the one hand the need for family support and were concerned about the infection of family members and friends with the coronavirus on the other. In addition to their own infection, many HCWs were afraid of losing their family members, and some have even suffered such losses (Sani et al., 2020). Similarly, in a study conducted by Lee et al. (2018), employees expressed feelings of interpersonal isolation and fear of transmitting the virus to their relatives. Another experience reported by the participants pertained to the experiences concerning community and the people around the treatment team. Social stigma and unanticipated behaviors are some of the unpleasant experiences mentioned. Avoiding stigma is vital as it causes people to conceal their disease (Roy et al., 2020).

In response to these experiences, the treatment team drew on self-support, support from friends and relatives, and support from colleagues and managers. In the course of the treatment team's intervention during the pandemic, multi-dimensional fostering of social support, cognitive evaluation regulation, guidance for positive coping styles, and stimulation of positive feelings and emotions to promote the mental health of HCWs have been found to be of paramount significance (Sun et al., 2020). Receiving support from colleagues and managers has also been reported in other research studies (Chan & Huak, 2004; Imai et al., 2010; Wong et al., 2005). Over the course of self-support, having clear communication, curbing work hours, having a healthy sleep pattern, maintaining proper nutrition and diet, getting regular exercise, using stress management and problem-solving techniques, and consulting with colleagues have proved to be helpful (Pappa et al., 2020). Based on the results of other studies, social support for the treatment team is highly crucial in the management of the pandemics (Kang et al., 2018; Liu & Liehr, 2009; Su et al., 2007).

Experiences related to the control of the disease by oneself and through the agency of others constituted another theme of the present study. Lack of sufficient resources and equipment to follow and comply with the protocols was another issue derived from the participants' experiences. Likewise, in the study conducted by Williams, the issue of limited resources of personal protective equipment was reported (Williams et al., 2020). It is essential to follow a rational arrangement in the allocation of healthcare resources.

The small sample size as well as conducting the study in the hospitals affiliated to Tehran University of Medical Sciences can be considered as the limitations of the present study. Future studies can be carried out in other

treatment settings to further investigate the valuable experiences of other nurses, physicians, and treatment team members to enhance the generalizability of the findings. Also, due to the pandemic, the high work load of the HCWs limited their available time for the interview and this led to the long duration of the study which is another limitation of the present article.

## 5 | CONCLUSIONS

Due to the prevalence of COVID-19 worldwide and the ensuing mortality rate, HCWs are more likely than others to be infected as they are on the front line in dealing with the disease. Offering and providing quality healthcare during crises is inconceivable without supporting HCWs although they have now accepted exposure to COVID-19 as an indispensable part of their professional lives. It is recommended that with regard to HCWs' health, an accurate approach encompassing prevention, diagnosis, and management be taken. Providing organizational, national, and global measures to protect HCWs is an obligation.

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## CONFLICT OF INTEREST

The authors declare that they have no conflicting interests.

## AUTHOR CONTRIBUTIONS

Zahra Khazaeipour contributed to the conception and design of this study, performed the analysis, drafted the manuscript, critically reviewed the manuscript, and supervised the whole study process. Mahboobeh Shali contributed in data gathering, performed the analysis, drafted the manuscript, and critically reviewed the manuscript. Amir Hossein Behnoush and Enayat A. Shabani contributed in drafting the manuscript and critically reviewed the manuscript. The final version of the manuscript was read and approved by all authors.

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