

# Challenges of prehospital emergency staff in the COVID-19 pandemic: A phenomenological research



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## Abstract

**Objective:** Pre-hospital emergency staff are involved in the front line of care for COVID-19 patients and face many challenges. The aim of this study was to explore the challenges of prehospital emergency staff in the COVID-19 pandemic.

**Methods:** This qualitative research was conducted with a descriptive phenomenological approach. Purposeful sampling was applied and data collection was done through semi-structured interviews. Participants consisted of 16 pre-hospital emergency staff. Data analysis was performed using the Colaizzi approach.

**Results:** Data analysis revealed five main themes including safety against COVID-19, knowledge deficit, fear and worry, challenges of transporting patients to the hospital, and selflessness.

**Conclusion:** Pre-hospital emergency staff face many problems in personal, professional, equipment and cultural fields in the COVID-19 epidemic. In this regard, special attention from health systems is mandatory.

**Keywords:** COVID-19, Pandemic, Prehospital Emergency Care, Staff, Challenges

## Introduction

In late December 2019, a series of unexplained cases of respiratory problems were reported in Wuhan, China. Government and health researchers in China took quick action to control the epidemic and began etiological research. On January 12, 2020, the World Health Organization (WHO) temporarily named the new virus the new coronavirus 2019 (1,2).

Pre-hospital emergency staff are the main group in this pandemic and are at the top and in the first line of care. The pre-hospital emergency is a community-based system that responds to the medical needs in acute situations (3,4). Pre-hospital emergency helps clients by responding to emergency requests using phone calls, dispatching to the patient's place, providing care by trained people, continuing medical and health care in the vehicle such as ambulance and helicopter as well as transferring the patient to medical centers by the guidance of headquarters

(5,6).

Staff members working in the pre-hospital emergency department face different challenges with regard to coronavirus pandemic. They experience significant job stress due to coming first to the scene to help and transfer the COVID-19 patients (7,8). Other challenges during a stressful situation can be limited time for dealing with critical patients and making appropriate decisions, and incompetence in saving the life of the dying patient (9). Therefore, identifying the experiences of emergency staff can help better to understand the weaknesses and strengths as well as the quality of pre-hospital emergency services. Qualitative studies express deeper knowledge than quantitative studies as they are the result of people's experiences and can shape the view of planners to perform better clinical activities (10). Hence, a qualitative approach was used to find out the experiences of pre-hospital emergency staff to better understand their challenges in



the COVID-19 pandemic.

## Methods

### *Study design and setting and participants*

This study was conducted with a qualitative approach and descriptive phenomenology. Phenomenology describes the meaning of the living experience or gives in-depth information about a concept or phenomenon (11). The study was conducted in the pre-hospital emergency office of Zabol University of Medical Sciences from March to June 2020. Participants consisted of 16 members of pre-hospital emergency staff that were selected by purposive sampling. The inclusion criteria were to have pre-hospital emergency experience, to have direct contact with COVID-19 patients e.g., caring or transferring them with ambulance, and to have willingness to participate in the study. We included diverse participants in terms of work experience, age, marital status and involvement in the missions of COVID-19 patients.

### *Data gathering*

Data were collected through in-depth semi-structured interviews. The interviews were conducted in a suitable environment with the coordination and willingness of the participants. Ethical issues were considered by providing oral and written information about the study and written consent was granted. Participants were reassured that the demographic information was confidential and they were allowed to leave the study at any stage. The interviews began with explanatory questions such as "Please describe the process you take to dispatch COVID-19 patients", "Explain the work challenges you have when working with COVID-19 patients" and "Describe the experience of working in the pre-hospital COVID-19 epidemic", continued with exploring questions like "Explain more". The first and second author conducted the interviews. Data saturation was reached after 14 interviews but two additional interviews were completed to make sure that no new themes developed. The interviews were carried out about 40–60 minutes. Data collection and analysis were carried out concurrently. Interviews were recorded via a digital voice recorder with the consent of the participants. The researcher listened to each audio file interview, and then transcribed them.

### *Data analysis*

The audio files recorded during the interview sessions were transcribed by the fourth author into the MAXQDA software. The second author and the third author conducted initial data analysis.

In this study, the seven-step Colaizzi method was utilized for data analysis (12). Recorded interviews were listened several times in order to check the accuracy and clarity of information. Significant words, phrases, sentences, and paragraphs were extracted from each

transcription. Each new item of information was compared with previously extracted items. As analysis progressed, repetitive items were retained. The data were compared, and items were grouped into emergent theme headings. Data were continuously compared across and within potential thematic clusters. Finally, validation of themes was approved by some of the participants.

### *Trustworthiness*

The rigor of the study was based on credibility, dependability, confirmability, and transferability strategies (13). For increasing the credibility of data, the researchers read interviews many times, discussed extracted codes, and cross-checked the themes with some participants for data clarification and bracketing. Dependability was confirmed by an external observer via a step-by-step repetition and detailed auditing, including a review of findings and documents. To consider the research confirmability, a step-by-step attempt was made to represent an explanation about the study process. Considering the transferability of the findings, some of the staff who did not attend the study confirmed the similarity of results with their own experiences.

## Results

The participants were 16 members of pre-hospital emergency staff. The mean (SD) age of patients was 36 (4) years with a range of 25 to 46. The results showed five main themes as "safety against COVID-19, knowledge deficit, fear and worry, challenges of transporting patients to the hospital, and selflessness.

### *Safety against COVID-19*

Participants believed that a variety of factors, including high quality safety equipment, standard transmission vehicles, adequate ventilation systems, personal protective equipment (PPE), sufficient number of manpower, and short time shifts were effective in maintaining the safety of the technician against COVID-19. Many technicians believed that having PPE was not only the requirement for safety against COVID-19, but the correct training and adequate information on how to use them in an emergency was crucial. The unsafety of ambulances, workforce shortages, and long work shifts increase the vulnerability and safety of Medicare.

Participant 9, single, 29 years old described the challenge of maintaining safety against COVID-19 as follows:

*"Since the onset of the COVID-19 epidemic, one of the main concerns was fear of getting the disease because of the lack of protective equipment and poor safety."*

Participant 5, married, 42 years old stated:

*"One of our biggest problems is the lack of workforce, thus, we have to stay long time in shifts. This not only reduces our efficacy and the quality of our care for the COVID-19 patients, but also it leads to illness."*

### Knowledge deficit against COVID-19

Participants stated that lack of comprehensive instructions for diagnosis, caring, and prevention from COVID-19 was the main challenge that Medicare staff encountered at the beginning of the epidemic.

Participant 6, married, 34 years old articulated:

*"In one of the missions, there was a patient who was weak and lethargic, but there were no typical symptoms of COVID-19. We performed medical procedures and transported him to the hospital. We also used personal protective equipment. After the follow-up, we were informed that he had been a positive COVID-19 patient and I can only say that we were lucky that we were not infected..."*

Participant 2, married, 45 years old stated:

*"At the beginning of the epidemic, we went on a mission where a patient had symptoms of COVID-19, and after coordination with the physician we transferred the patient to the hospital. During the transfer we did not know what to do for his breathing problem due to lack of a special protocol in order to give the drug to the patient, and this issue was confusing owing to the patient's needs ...."*

### Fear and worry

Some technicians said that since the COVID-19 epidemic started, the attitude of their family and people towards Medicare staff has changed and they kept distance between them and Medicare staffs because they thought that the staff might be infected with COVID-19. Therefore, this has caused the staff to be in stress and worry.

Participant 3, married, 35 years old, commented as follows:

*"In the missions that I take COVID-19 patients to the hospital, I have a strange fear of what if I get sick and what will happen to my family. I am so worried."*

Participant 12, married, 45 years old stated:

*"On one of the missions ... the case was a heart disease. We got to the patient's house and after controlling the patient's vital signs, we told the patient that he should be taken to the ambulance to continue the treatment. The patient's family and companions did not allow the patient to enter the ambulance. They stated that you and your ambulance might be infected. We take the patient to the hospital ourselves..."*

### Challenges of transporting patients to the hospital

Other challenges that Medicare staff were encountered during the transportation of patients in the time of COVID-19 epidemic included lack of a uniform protocol for admission between the pre-hospital emergency and the hospital emergency, unconventional protective equipment, high expectations of companions, and lack of equipment for transferring other patients.

Participant 14, married, 38 years old stated:

*"...we transferred a suspected patient to the hospital. After arriving at the hospital, the emergency department nurse did not accept the patient and said that you should take the patient to the respiratory ward. After a long struggle we finally delivered the patient."*

Participant 8, married, 39 years old mentioned:

*"When transporting a patient to the hospital we have to wear personal protective equipment, and we really have a problem with these clothes. The back cabin of the ambulance is small and hot, and with these clothes we sweat a lot and cannot breathe."*

### Selflessness

Participants stated that they were faced with a lack of moral and technical support, lack of cooperation from other agencies, and frequent use of disinfectants in ambulances, which made their activities difficult. They also believed that services to patients are sacred tasks if they consider God conscientiously during the missions. Despite the high risk of COVID-19, the pre-hospital staff do their duties as self-sacrificing.

Participant 9, single, 29 years old commented as follows:

*"After every mission, we clean the ambulance with disinfectants. The bad smell of disinfectants and the air trapped inside the cabin is something like hell. We cannot take away the mask or open the cabin when a suspected patient is in. We are completely annoyed."*

Participant 12, married, 46 years old stated:

*"I work as hard as I can to help and care for COVID-19 patients. Sometimes, I really work harder than I can, and it is always more important for me to save the patient's life."*

### Discussion

The aim of this study was to investigate the work challenges of pre-hospital emergency staff during the COVID-2019 epidemic. The results of the study showed that it is crucial to pay more attention to the challenges that Medicare staff deal with. One of the results of the study is the challenge of maintaining safety against COVID-19. As the pre-hospital emergency staff deal directly with the patient, they are one of the most vulnerable groups in crisis and epidemics. If they do not use PPE and do not receive proper training in this field, or if they are involved due to lack of manpower and intensive work shifts, they will have difficulty in caring for COVID-19 patients. A previous study indicates that safety concerns are a priority among Medicare staff. Service providers in natural disasters are insufficiently trained or equipped with protective equipment (14). Besides, shortages of staff and safety equipment in ambulances are the factors in disease transmission and anxiety to Medicare staff in Iran (15,16).

The other finding of the study is knowledge deficit in the diagnosis, care and prevention against COVID-19. As the COVID-19 was unknown at the beginning of

the pandemic, lack of a comprehensive care guideline is inevitable. This factor puts technicians at risk or makes them unable to provide high-quality care for COVID-19 patients. This finding is consistent with the results of the study conducted by Haward et al indicating that in many under-developed countries, lack of knowledge about the disease transmission and treatment measures put the pre-hospital staffs at risk (17). Therefore, the systems should develop, implement, and supervise continuous training programs focusing on increasing staff awareness of emerging diseases (18,19).

Another result of the present study is the fear and worry caused by COVID-19. Medicare staff has great fear and worry about contracting the disease due to constant contact with COVID-19 patients. In this regard, the fear and worry can spread to their families and members of the community. Previous studies state that medical staff experience mental issues including, fear, stress, uncertainty, depression, frustration, helplessness, lack of adaptation, stigma, and discrimination due to poor safety, high risk of losing a job, and high risk of spreading the infection to others. Psychological counselling for adaptation to the epidemic conditions is essential (20-23).

Another result of the study is the challenges of transferring the patients to the hospital. Shortages of protective equipment and admission protocols in hospitals have increased the burden of prehospital staffs during the COVID-19 epidemic. The pre-hospital emergency is also one of the health care units at the forefront of the epidemic, with challenges such as answering the phones of people seeking help, screening calls from COVID-19 patients, performing a triage process, and sending the unit closest to the mission site. Besides, it provides the required services at the patient's bedside, dispatches ambulance for clients, applies the minimum workforce for the mission and observes safety tips based on the instructions and admission by the hospital (24,25). In this regard, Wax and Christian state that both Medicare and hospital managers should be fully prepared to care for the patients. Observance of safety tips, the use of PPE, and the necessary training should be offered to reduce the risk of transmitting the disease (26). Besides, health care coalitions including, public health, health care, emergency management, and emergency medical services play an important role in providing better care to patients and increasing the success of epidemic control (27).

Another finding of the current study is the selflessness of pre-hospital staff. Working in a pre-hospital emergency setting is not less than worship if it is really pure and for the sake of God because in a high-risk disease such as COVID-19 even the family of patients avoid them, but technicians have to help them. Although the technicians know the risk of taking care of COVID-19 patients, they approach the patients. Sometimes they have to take off their gloves to inject a patient intravenously. In some

cases, their own lives can be at risk due to helping the injured or sick people. In this regard, previous studies (28-30) indicate that EMS staff face ethical challenges in missions. They respect the values and the professional dignity of the patients and sacrifice themselves for patients despite shortages.

One of the weaknesses of the present study was the wonder of staff in the epidemic who were not aware of the dangers that threatened them, so they spoke cautiously about work cases. Staff were also reluctant to comment further on some issues during the interview due to their work situation. One of the strengths of our study was the interview with participants who were directly involved in providing medical services and transferring COVID-19 patients to the hospital, and after hospitalization, they noticed a positive result for their COVID-19 infection. Besides, researchers were involved in the natural conditions of the study who dealt closely with many of the cases mentioned.

### Conclusion

Pre-hospital emergency staff face many challenges in the personal, professional, equipment, and cultural fields of the COVID 19 epidemic. Also, during their working life, they are exposed to all kinds of injuries and infections, including viruses, so due to the low level of safety standards in relation to their profession, it is necessary to get the required training to improve their performance in the face of unknown diseases and epidemics and understand how to use PPE, follow instructions and protocols to maintain their safety. Officials should provide equipment, reduce working hours, offer motivations and strengthen the morale of staff to deal with critical situations. It is also necessary to provide the ground for better services with high quality. Also, educating people and informing them about the duties of the pre-hospital emergency staff is important.

### Author contribution

MM, MF, AA, and MS contributed in the study design, and revise of the study. MF and AA contributed in data analysis and final revision of the study. MA, MS and MF contributed in interviews, and data gathering.

### Ethical issues

Ethical clearance was obtained from the ethical committee of the Zabol University of Medical Sciences before the start of the study (approved code: IR.ZBMU.REC.1399.019). Written informed consent was obtained from each patient before the conduct of the study.

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