

Psychological Status of Frontline Healthcare Professionals at the Outbreak of COVID-19 in Wuhan: A Narrative Case Series

Yu Deng^{1,*}, Jixue Yang^{1,2,*}

¹College of Language Intelligence, Sichuan International Studies University, Chongqing, China; ²School of English Studies, Sichuan International Studies University, Chongqing, China

*These authors have contributed equally to this work.

ABSTRACT

This study explored the first-person lived experiences of 2 nurses and 2 doctors combating coronavirus disease 2019 (COVID-19) in Wuhan, China. The in-depth interviews indicated that frontline healthcare professionals were at high risk of developing symptoms of fear, anxiety, depression, stress, loneliness, and burnout. The fear of being infected and the heavy workload in the isolation ward are the main risk factors for frontline health workers' psychological problems. Comprehensive assistance and social support must be provided in order to resolve their mental health issues.

ARTICLE HISTORY

Received: 13 February, 2021

Accepted: 20 April, 2021

KEYWORDS: COVID-19, healthcare professionals, narratives, psychological problems

INTRODUCTION

Medical staff fighting coronavirus disease 2019 (COVID-19) could be psychologically and mentally exhausted due to long working hours, risk of infection, shortages of protective equipment, loneliness, physical fatigue, and separation from family.^{1,2} Previous studies have shown that healthcare workers involved in the diagnosis and treatment of COVID-19 patients are more psychologically susceptible compared to people who are not dealing directly with these patients.³ Doctors and nurses supporting COVID-19 patients are likely to demonstrate symptoms of depression, anxiety, insomnia, and distress.^{1,4} To date, while numerous surveys have been conducted to address frontline healthcare professional's mental issues during the COVID-19 pandemic, it seems that narrative data concerning their lived experiences are somehow neglected. Sarabia-Cobo et al.⁵ conducted in-depth interviews with nurses from Spain, Italy, Peru, and Mexico, and found that the fear of the pandemic, the sense of duty, professional commitment, and emotional exhaustion were the main risk factors for nurses' levels of stress and emotional burnout. Norful et al.⁶ interviewed the American healthcare workforce during the initial outbreak of COVID-19. The results indicated that shifting information, a lack of personal protective equipment, and fear of infecting others prompted worry and stress for frontline health workers.

Taken together, exploring the narrative experiences of frontline healthcare professionals can capture their dynamic psychological status during the COVID-19 pandemic. This study used in-depth interviews to investigate the lived experiences of 4 medical staff combating COVID-19 in Wuhan, in order to analyze the main psychological effects caused by the pandemic among frontline healthcare professionals.

METHODS

This research formed part of the project "Lived-experience narratives and mental health of people in Wuhan during the COVID-19 pandemic." Participants were contacted through a recruitment advertisement online. The project team conducted semi-structured telephone interviews with 27 participants from Wuhan, including healthcare professionals, COVID-19 patients, social workers, and college students. The inclusion criterion for healthcare professionals was met by those who supported COVID-19 patients in the frontline hospitals during the outbreak of COVID-19. They were quarantined in hotels or dormitories to prevent the spread of COVID-19. Five healthcare professionals were contacted, but one of them declined the interview. The 4 health professionals reported in

Corresponding author: Yu Deng, e-mail: dengyu@sisu.edu.cn

Cite this article as: Deng Y, Yang J. Psychological status of frontline healthcare professionals at the outbreak of COVID-19 in Wuhan: A narrative case series. *Psychiatr Clin Psychopharmacol.* 2021; 31(2): 233-237.



Content of this journal is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

the present case series included 2 nurses and 2 doctors who were randomly selected from 4 different frontline hospitals in Wuhan as paid volunteers in the interviews. Three of the healthcare professionals interviewed were women. The mean age was 28.5 (24-41) years. The 4 healthcare professionals were contacted by phone to obtain verbal informed consent. They provided additional written informed consent before the commencement of the interview. The interviews were conducted from June to July 2020 by a single project researcher specializing in psychology and psycholinguistics.

The participants were inducted to narrate their lived experiences and feelings regarding the frontline work combating COVID-19. The questions in the interview related to the work they did during the outbreak of COVID-19, how the frontline work in the COVID-19 ward differed from their previous work, their most unforgettable stories in the hospital, and their feelings for each narrated event. Each interview lasted about 40 minutes. The interviews were recorded and transcribed later by a native speaker.

CASE REPORTS

Case 1 “The World Collapsed with Darkness”

A 24-year-old nurse (subject 1) worked in the oncology department. As reported by her, she was immensely panicked by the severity of the pandemic and the shortage of personal protective equipment. She felt “black color” in her working environment. In March 2020, she volunteered to support the fever clinic, by conducting the nucleic acid test for patients infected with COVID-19. On the first day, the complicated procedures and the mysterious COVID-19 drove her to extreme anxiety and panic. She worried about being infected with COVID-19. As all medical workers in the clinic wore heavy personal protective equipment, she felt like “working in a field hospital at wartime.” Fortunately, patients’ praise and her mother’s encouragement provided her with “burning righteous and fighting capacity” in combating COVID-19. Furthermore, adequate supplies of protective equipment and strict protective measures enabled her to calm down, and “the color around her turned white.” According to her narration, patients at the

fever clinic were so stressed and anxious that they refused to sit on the chairs in the hospital, as if the chairs might spread COVID-19. She warmly consoled the patients while testing for nucleic acid. Generally, she demonstrated an attitude of optimism and cheerfulness during the frontline work at the fever clinic. However, the long work with COVID-19 aggravated her emotional state. For instance, she felt that “the world collapsed with darkness” when she left the hospital. When it rained, she felt miserable and depressed. What was worse was that patients’ cough at the fever clinic repeatedly reminded her of a cancer patient who had died in her arms. This memory frustrated her and she frequently had nightmares about it during her work at the fever clinic. When she left the frontline hospital on April 8, 2020, the date that Wuhan terminated the lockdown, she felt “green color around her.”

Case 2 “Working in the Intensive Care Unit (ICU) Was Like Taking a Transparent Elevator”

A 25-year-old nurse (subject 2) worked in the ICU for COVID-19, nursing critically ill patients. The severe symptoms of COVID-19 patients alarmed her tremendously. It was stressful to read the news about COVID-19 during the initial days at the ICU. As the confirmed cases increased, she worried that “the doomsday was coming.” The wide spread of COVID-19 “drove her to extreme anxiety.” In her mind, “Wuhan was sealed and isolated from the outside world, with a few holes open for delivering essential supplies.” Staying with the severe COVID-19 patients, she felt “the closest distance between life and death.” She was plagued by insomnia and dreamed that she was the only person infected with COVID-19 for 10 miles around. Even if the COVID-19 pandemic in Wuhan was under control later, she remained nervous and worried that “COVID-19 would attack Wuhan again in retaliation.” Her colleagues also felt heavy-laden and avoided any discussion about what had happened in the ICU. Despite the fear, she was preoccupied with the thought of defeating COVID-19. She would “keep up the spirit until the last second of her work” every day for fear that “the patients would die of COVID-19 within a few seconds.” According to her report, her emotional state when working at the ICU was like “taking a transparent elevator.” As she entered the ICU for COVID-19, she felt increasingly oppressed as the elevator ascended. When the elevator reached the peak, the fear decreased with the pandemic under control. Then, the elevator descended slowly with the decrease of infected cases. Finally, there were no more new confirmed cases when the elevator reached the ground floor. The way she stepped out of the elevator was like the moment she exited the isolation ICU.

As far she recollected, some elderly patients with a long duration of stay at the ICU became extremely nervous and sensitive. They might physically attack medical workers. However, when patients held her hand, she realized that they were like children. She consoled the weak patients. It

MAIN POINTS

- We reported lived experiences of 4 healthcare professionals combating COVID-19 in Wuhan.
- In-depth interviews showed that frontline healthcare professionals developed the symptoms of fear, anxiety, depression, stress, loneliness, and burnout.
- The risk of being infected and heavy workload were the main risk factors causing frontline health workers’ psychological problems.
- Comprehensive assistance and social support must be provided to support the well-being of frontline healthcare workers.

is noteworthy that she felt warm when patients on ventilator showed their gratitude to her by “giving her a big thumb.” In her eyes, “warmth was magnified by many times” when patients and medical staff could understand each other.

Case 3 “I Stayed Close to Death”

A 24-year-old doctor (subject 3) volunteered to support the COVID-19 inpatient ward. He was responsible for the admission, treatment, and physical re-examination of COVID-19 patients. Being fearful of COVID-19, he substituted the profile image of his WeChat social networking with the photo of Dr. Zhong Nanshan (an expert of COVID-19) before he entered the ward. He stated that “the unknown coronavirus drove him to panic.” He tried to overcome the fear and consoled the patients by relieving their severe symptoms. Some patients constantly inquired about the treatment plan when they heard about the rumors and negative information on the internet. Other patients were reluctant to cooperate with medical staff, behaving as if “they were sentenced to death.” According to his recollection, since the experts originally arranged to support his hospital temporarily moved to other hospitals to handle a more serious situation, they scrambled to organize a medical team in the isolation ward without a buffer time. He was horrified with “a blank of mind,” but treated 92 patients on one night. He was astonished by such a large number of patients that he doubted “what did I come here for?”

During his work at the COVID-19 ward, the tragic experiences of patients aggravated his emotional state. For instance, a 60-year-old male COVID-19 patient dropped to his knees in front of the doctors when his mother died of COVID-19. He cried, shouted, kowtowed, and begged the medical staff for help saying that he had a family to support. The big sound of the patient’s kowtow made him feel “heart-blocked.” He started blaming himself for his helplessness and uselessness. Recalling what he had experienced, he regarded the days in the isolation ward as “taking a roller coaster.” He claimed that “he stayed very close to death” at that time. However, he gradually “turned apathetic about death.” He packed the corpses smoothly, handed the corpses to the undertakers skillfully, and resumed his work calmly. When the pandemic was controlled and he returned to the department where he had worked, the smell of disinfectant offered him a sense of security. Nevertheless, the sound of the call bell of the patients remained, “thumping his heart.”

Case 4 “I Was a Brave Warrior in the Battlefield”

A 41-year-old doctor (subject 4) was in charge of the admission, treatment, and physical re-examination of COVID-19 patients in the frontline hospital. She was petrified during the initial days at the COVID-19 inpatient ward. Negative information about the pandemic increased her sense of loneliness and desolation. She brooded on the

destiny of Wuhan, with the illusion that “the doomsday was coming and Wuhan would turn into a city of darkness.” For the sake of her family’s health, she did not return home for 3 months, although she always dreamed about meeting her family members. Under the intense work in the isolation ward, she felt it difficult to breathe in the personal protective equipment. With heavy workload, her head ached as if “she was about to explode like a bomb” when she returned to the quarantine hotel after work. Motivated by patients’ strong desire to survive, she offered the best treatment in order to cure them. According to her report, a 50-year-old male patient passed away suddenly when he was having lunch. This experience increased her stress and anxiety. In addition, the “earth-shattering” cries of a COVID-19 patient, who was not allowed to meet his dying mother, lingered in her mind. Dominated by a sense of sympathy, she felt “the fragility of life.”

Luckily, the wide range of support from the whole country boosted her confidence. She considered the hospital as a “battlefield” in which she and her colleagues were “brave warriors” fighting COVID-19 with righteousness. Furthermore, patients’ trust deeply encouraged her. She devoted herself to the medical treatment regardless of the physical exhaustion. When the pandemic was under control, she completed her service in the COVID-19 ward and felt that “her body was hollowed out.”

DISCUSSION

This study reported the first-person narrative experiences of 4 medical staff combating COVID-19 in Wuhan, China. The results indicated that frontline healthcare professionals were at risk of developing the symptoms of fear, anxiety, depression, stress, loneliness, and burnout at the outbreak of the COVID-19 pandemic.^{5,7,8}

The high risk of being infected is one of the most commonly reported factors that severely impacts the mental health of medical workers.^{2,9} The uncertainty of COVID-19 and lack of personal protective equipment increase healthcare professionals’ negative emotions such as fear, worry, anxiety, and stress.^{3,9} This is supported by our case reports. Specifically, subject 1’s panic and worry rose sharply on the first day of testing nucleic acid for COVID-19 patients. She felt “dark” without adequate personal protective equipment. Subject 2 showed the impulse to get herself tested for COVID-19 whenever she felt slight discomfort. Subject 3 was alarmed with “blank mind” in the isolation ward due to lack of knowledge about COVID-19. Fear of being infected led him to change the profile photo in his social network profile for blessings. Subject 4 felt petrified “as if being surrounded by COVID-19.” She complained that the inadequacy of personal protective equipment negatively impacted her work. These psychological symptoms are consistent with Sarabia-Cobo et al.’s⁵ interview study, in that fear of the pandemic situation was the most salient

topic category in the narratives of medical staff fighting COVID-19. It is noteworthy that the concern of carrying the infection to the workplace or home also drove health professionals to fear and anxiety.⁸ In our narratives, subject 1 stayed at home rather than live in the hotel with colleagues. Subject 4 settled in the quarantine hotel for 3 months, although she missed her family.

Healthcare professionals may develop compassion fatigue and post-traumatic stress while frequently witnessing the suffering and death of the patients in the COVID-19 inpatient ward.¹⁰ For instance, subject 3 became apathetic about death after extensive exposure to death. Furthermore, the failure to cure COVID-19 patients impacted the sleep quality of healthcare professionals.¹¹ This is exemplified by subject 1's insomnia due to the death of a cancer patient in her arms. In addition, severe symptoms of COVID-19 patients increased the stress of the healthcare professionals. For example, subject 3 blamed himself for the death of a patient, with a strong sense of guilt and helplessness. Similarly, stress and anxiety frustrated subject 4 when she watched a patient pass away.

It is worth mentioning that high workload severely impacts the physical and mental health of healthcare professionals.^{1,12} Most healthcare workers had to work more than 12 hours a day continuously, with tight protective equipment, during the COVID-19 pandemic. In our study, the overwhelming work of testing nucleic acid made subject 1 feel "the world collapsed." Subject 3 became skeptical about his decision in supporting the COVID-19 ward after treating 92 patients on one night. Subject 4 felt like she was being "hollowed out" throughout the long-term work in the isolation ward. These findings indicate that heavy workload is a main risk factor of psychological distress among frontline health professionals. In this regard, comprehensive assistance should be provided to support the well-being of healthcare workers who treat COVID-19 patients in the isolation ward.¹² For instance, the provision of a rest area, care for basic physical needs such as food, training on the care of COVID-19 patients, information on protective measures, leisure activities, telephone helplines, periodic visits to the rest area by a counselor, individualized stress mitigation efforts, social media, and organizational transparency were effective against rising stressors.^{2,6}

Our findings also suggest that adequate social support not only reduces the health professionals' symptoms of anxiety, stress, and depression, but also increases their self-efficacy concerning work motivation, courage, and interpersonal understanding.^{11,13-15} Social support is the perception of care, love, esteem, and obligation from friends, family members, and those who are in the social network.¹⁵ During the COVID-19 pandemic, most health professionals stayed in hotels for quarantine after work to avoid cross-infection. Consequently, loneliness and anxiety were very likely to arise in the absence of social support.¹⁴ According to the narratives of our interviewees,

support from family members, friends, patients, and the country brought them comfort and confidence. For instance, subjects 1, 2, and 4 felt extremely isolated under the high pressure of working in the COVID-19 ward, but patients' gratitude, respect, trust, and praise motivated them and enhanced their sense of social responsibility. Moreover, support from the country and public is essential in reducing health professionals' fear, anxiety, and pressure. In our interviews, the positive role of the country was metaphorically depicted as "shining crystal" (subject 1), "light" (subject 3), and "parents" (subject 4). Sharing experiences, emotional expression, and mutual interaction are essential routes for healthcare professionals to receive social support.¹⁵ Hence, the construction of the areas for communication and the provision of online or on-site psychological counseling are urgently needed.^{1,15} Specifically, one-to-one consultation, psychological counselor, interactive group support, network consultation, and telephone consultation should be made easily available to healthcare professionals to share problems and enhance emotional support.¹⁶ In addition, the encouragement and guidance from hospital managers plays an important part in reducing the mental health symptoms of frontline healthcare professionals. Hospital managers should provide a good environment and enough time for the healthcare professionals to communicate with their colleagues and friends.¹⁴ Social support from friends and colleagues in the workplace allows healthcare workers to share feelings and stressors, and can enhance their sense of professional achievement and confidence in their work.¹⁷ Finally, it is also necessary to care for the families of frontline healthcare workers and make them feel at ease with their work.¹⁶

CONCLUSION

Apart from preventing the spread of COVID-19 and supporting patients, it is crucial for healthcare professionals to maintain their own physical and psychological states.¹⁸ Our narrative case series showed that upon working in the COVID-19 ward and being quarantined, frontline healthcare professionals started demonstrating the symptoms of fear, anxiety, depression, stress, loneliness, insomnia, and burnout. During the early period of spread of the COVID-19 pandemic, psychological influence posed a major challenge among healthcare professionals working in the frontline.^{3,4} Their past experiences and mental health symptoms in COVID-19 hospitals suggest that comprehensive assistance and social support must be provided from the initial stage of the pandemic in order to protect the psychological status of frontline healthcare professionals. This study has some limitations. First, we only investigated 4 frontline healthcare workers by convenience sampling. Interviews with more participants are needed to reveal the mental health conditions of frontline healthcare staff supporting COVID-19 patients. Second, individuals'

backgrounds may impact the similarity of the responses among frontline healthcare staff. For instance, younger age was reported as one of the important factors that contributed to healthcare workers' depression, anxiety, and burnout during the COVID-19 pandemic.⁷ In our study, 3 out of 4 participants were between the ages of 24 and 25, lacking the rich clinical experience of other senior healthcare professionals. Furthermore, the 4 frontline healthcare workers in our study did not major in epidemiology. The insufficiency of experience might contribute to the similar mental health symptoms in their narratives. Hence, controlling individuals' backgrounds such as age, gender, education, working experience, workplace setting, and quarantine time is a potential future research direction in narrative studies concerning the psychological status of healthcare workers.

Ethics Committee Approval: Ethical committee approval was received from the Sichuan International Studies University and Chongqing Public Health Center (2020-048-02-KY).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - Y.D., J.X.Y.; Design - Y.D., J.X.Y.; Supervision - Y.D.; Resource - J.X.Y.; Materials - Y.D., J.X.Y.; Data Collection and/or Processing - J.X.Y.; Analysis and/or Interpretation - Y.D., J.X.Y.; Literature Search - J.X.Y., Y.D.; Writing - Y.D., J.X.Y.; Critical Reviews - Y.D.

Acknowledgments: We would like to show gratitude to all of the interviewees who participated in this study voluntarily.

Conflict of Interest: The authors have declared that no conflicts of interest exist.

Financial Disclosure: This study was supported by Humanities and Social Sciences Research Project of Chongqing Education Commission (21SKGH143).

REFERENCES

- An Y, Yang Y, Wang A et al. Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. *J Affect Disord.* 2020;276:312-315. [CrossRef]
- Kang L, Ma S, Chen M et al. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: a cross-sectional study. *Brain Behav Immun.* 2020;87:11-17. [CrossRef]
- da Silva FCT, Neto MLR. Psychological effects caused by the COVID-19 pandemic in health professionals: a systematic review with meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry.* 2021;104:110062. [CrossRef]
- Lai J, Ma S, Wang Y et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open.* 2020;3(3):e203976. [CrossRef]
- Sarabia-Cobo C., Pérez V., de Lorena P. et al. Experiences of geriatric nurses in nursing home settings across four countries in the face of the COVID-19 pandemic. *J Adv Nurs.* 2021;77(2):869-878. [CrossRef]
- Norful AA, Rosenfeld A, Schroeder K, Travers JL, Aliyu S. Primary drivers and psychological manifestations of stress in frontline healthcare workforce during the initial COVID-19 outbreak in the United States. *Gen Hosp Psychiatry.* 2021;69:20-26. [CrossRef]
- Serrano-Ripoll MJ, Meneses-Echavez JF, Ricci-Cabello I et al. Impact of viral epidemic outbreaks on mental health of healthcare workers: a rapid systematic review and meta-analysis. *J Affect Disord.* 2020;277:347-357. [CrossRef]
- Szcześniak D, Gładka A, Misiak B, Cyran A, Rymaszewska J. The SARS-CoV-2 and mental health: from biological mechanisms to social consequences. *Prog Neuropsychopharmacol Biol Psychiatry.* 2021;104:110046. [CrossRef]
- Alan H, Eskin Bacaksiz F, Tiryaki Sen H et al. "I'm a hero, but...": an evaluation of depression, anxiety, and stress levels of frontline healthcare professionals during COVID-19 pandemic in Turkey. *Perspect Psychiatr Care.* 2020:1-11. [CrossRef]
- Alharbi J, Jackson D, Usher K. The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *J Clin Nurs.* 2020;29(15-16):2762-2764. [CrossRef]
- Xiao H, Zhang Y, Kong D, Li S, Yang N. The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit.* 2020;26:e923549. [CrossRef]
- Shoja E, Aghamohammadi V, Bazayr H et al. Covid-19 effects on the workload of Iranian healthcare workers. *BMC Public Health.* 2020;20(1):1636. [CrossRef]
- da Silva FCT, Neto MLR. Psychiatric symptomatology associated with depression, anxiety, distress, and insomnia in health professionals working in patients affected by COVID-19: a systematic review with meta-analysis. *Prog Neuropsychopharmacol Biol Psychiatry.* 2021;104:110057. [CrossRef]
- Mo Y, Deng L, Zhang L et al. Anxiety of nurses to support Wuhan in fighting against COVID-19 epidemic and its correlation with work stress and self-efficacy. *J Clin Nurs.* 2021;30(3-4):397-405. [CrossRef]
- Zhu W, Wei Y, Meng X, Li J. The mediation effects of coping style on the relationship between social support and anxiety in Chinese medical staff during COVID-19. *BMC Health Serv Res.* 2020;20(1):1007. [CrossRef]
- Fang XH, Wu L, Lu LS et al. Mental health problems and social supports in the COVID-19 healthcare workers: a Chinese explanatory study. *BMC Psychiatry.* 2021;21(1):34. [CrossRef]
- Woon LS, Sidi H, Nik Jaafar NR, Leong Bin Abdullah MFI. Mental health status of university healthcare workers during the COVID-19 pandemic: a post-movement lockdown assessment. *Int J Environ Res Public Health.* 2020;17(24):9155. [CrossRef]
- Coskun YS, Bildik F, Aslaner MA et al. The effect of the Covid-19 pandemic on the psychological status of hospital workers. *Psychiatr Clin Psychopharmacol.* 2020;30(3):264-272. [CrossRef]