

A Qualitative Study on the Inner Experience of First-Line Nurses in the Clinical Fight against COVID-19

Haijiao Zhang

Second Hospital of Hebei Medical University <https://orcid.org/0000-0001-7238-0186>

Lishi Yin

Chongqing City Hospital of Traditional Chinese Medicine

Yan Peng

Chongqing City Hospital of Traditional Chinese Medicine

Qiyang Chen

Chongqing City Hospital of Traditional Chinese Medicine

Chenxu Lv

Second Hospital of Hebei Medical University

Liang Juan

Chongqing City Hospital of Traditional Chinese Medicine

Ling Fan

Chongqing City Hospital of Traditional Chinese Medicine

Tingting Tong

Chongqing City Hospital of Traditional Chinese Medicine

Ruiyi Liu

Chongqing City Hospital of Traditional Chinese Medicine

Lijuan Zhao

Chongqing City Hospital of Traditional Chinese Medicine

Ting Liang

Chongqing City Hospital of Traditional Chinese Medicine

Suzhai Tian (✉ 2923642816@qq.com)

Research

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Abstract

Background: With the spread of the Coronavirus Disease 2019 (COVID-19) epidemic in the world, medical staff have become the main force to fight the epidemic. In the process of clinically fighting the epidemic, many nurses experience enormous physical and psychological strain. All parties are under tremendous pressure due to the shortage of medical resources and the large numbers of severely ill patients requiring assistance. Herein, we explored the inner experience of first-line clinical nursing staff during the COVID-19 epidemic.

Methods: In March 2020, qualitative research methods were used to interview 18 clinical first-line nurses. Semi-structured interviews were used, and data analysis consisted of content analysis of the interviews.

Results: A total of four themes were identified: (1) work-level experience: (a) difficulty in the implementation of nursing operations, (b) a sense of accomplishment in innovative nursing work; (2) experience at the physical level: (a) tiredness, (b) injury/discomfort; (3) psychological experience: (a) enormous psychological pressure, (b) post-traumatic psychological obstacles, (c) sense of mission/achievement; (4) traditional Chinese medicine (TCM) nursing experience: (a) frustration during treatment, (b) joy after treatment.

Conclusions: Anti-epidemic clinical first-line nurses were able to maintain their high-level nursing ability under large amounts of psychological pressure and a high level of physical discomfort, which laid the foundation for victory over the epidemic.

Trial registration: None

Introduction

The first case of a new type of coronavirus infection, which was given the name Coronavirus Disease 2019 (COVID-19), was reported in Wuhan, China in December 2019. It was later confirmed that the risk existed for human-to-human transmission (Zhu et al,2020; Li et al,2020). During the celebration of the traditional Chinese “Spring Festival” in January 2020, COVID-19 was rapidly spread in China (Guan et al,2020).

COVID-19 has become the largest public health event since the founding of New China (Wang et al,2020). The National Disease Control Center of the People’s Republic of China has included it as a Class B infectious disease, according to the prevention and control of Class A infectious diseases (National Health Commission,2020). Because the outbreak is fierce and far beyond expectations, the entire population is generally susceptible, and the disease is highly contagious. The relative shortage of medical resources and the large proportion of early critical illness have resulted in great pressure on clinical medical workers (Wu et al,2020).

In the global medical industry, nurses are usually the first to come in contact with patients and assist them in their recovery. With the development of the COVID-19 epidemic, in order to provide medical care for patients with COVID-19, 28,600 nurses from all over China travelled to Wuhan in February 2020, which was at the epicenter of the epidemic, to offer frontline support and become the mainstay of the fight against the epidemic. With the in-depth study of COVID-19 and the accumulation of medical experience, medical staff now have a deeper understanding of the disease. However, as a key force in the fight against epidemics, medical personnel struggling on the front lines not only have to make difficult decisions in the process of administering treatment to many patients that are near death, but also bear enormous psychological pressure. With the escalation of the epidemic, medical personnel are experiencing rapidly increasing workloads. With the restlessness of patients and their families, physicians and nurses are subject to extremely high emotional loads and are undergoing extreme physical and psychological stress that will inevitably affect the effectiveness of anti-epidemic efforts.

Faced with the severity of the COVID-19 epidemic, and because new drugs and vaccines are still in the research and development stage and thus unavailable, medical staff can only use existing treatments to assist patients through the disease period. Chinese medical care has benefitted from the great advantage of being able to draw upon a large body of empirical knowledge. From various epidemics in ancient times, to Japanese encephalitis in the 1950s, SARS in 2003, H7N9 avian influenza in 2004, and H1N1 influenza A in 2009, the prevention and treatment of disease by the use of Chinese medicine has played an important role in many anti-epidemics (Qi et al,2020). For COVID-19, Chinese diagnosis has resulted in the proposed use of traditional Chinese medicine (TCM) for treatment as well as prevention.

In the current study, many nurses adopted TCM nursing for patients during their recovery and achieved good results. Therefore, this study uses a qualitative research method to interview clinical front-line nurses to understand their work experience, explore the difficulties and achievements nurses face in their work, and provide recommendations for medical staff who continue to work in the clinical front line.

Objects And Methods

Subjects

In March 2020, purposive sampling method was used to select nurses who worked in the frontline of antiepidemic clinics for ≥ 4 weeks and ask them if they were interested in participating in a semi-structured interview. After the subjects volunteered to participate, they were asked to sign an informed consent form. The sample size was repeated based on the data from the nurses interviewed, and no new themes appeared during the analysis of the data. To reach saturation as a standard, a total of 18 people were interviewed, including 11 women and 7 men, aged 27–37 years old, with an average age of 32.11 ± 3.08 years. The specific content is shown in Table 1.

Table 1
Basic information regarding the participants who were interviewed

Number	Age	Gender	Title	Length of service	Marital status	Former work section	Work section during the epidemic	Native place	Health status
P01	35	Female	Nurse-in-charge	12	Married	Urology	Mild isolation ward	Chong qing	good
P02	29	Male	Nurse Practitioner	7	Married	Rehabilitation division	Mild isolation ward	Chong Qing	good
P03	34	Male	Nurse-in-charge	6	Married	Liver Diseases Branch	Mild isolation ward	HeBei	good
P04	29	Female	Nurse Practitioner	5	Married	Rehabilitation division	Mild isolation ward	Chong Qing	good
P05	31	Female	Nurse-in-charge	8	Married	Endocrinology	Mild isolation ward	Chong Qing	good
P06	30	Female	Nurse-in-charge	8	Never married	Respiratory	Mild isolation ward	SiChuan	good
P07	35	Male	Nurse-in-charge	10	Married	Operating room	Mild isolation ward	HuBei	good
P08	28	Female	Nurse Practitioner	7	Married	Respiratory	Mild isolation ward	HuBei	good
P09	37	Female	Nurse-in-charge	14	Married	Respiratory	Mild isolation ward	Chong Qing	good
P10	31	Female	Nurse-in-charge	31	Married	ICU	Intensive isolation ward	Chong Qing	good
P11	33	Male	Nurse Practitioner	11	Married	ICU	Intensive isolation ward	SiChuan	good
P12	35	Male	Nurse-in-charge	12	Married	Respiratory	Mild isolation ward	Chong Qing	good
P13	32	Female	Nurse-in-charge	10	Married	Respiratory	Mild isolation ward	HuBei	good
P14	34	Male	Nurse-in-charge	11	Married	Respiratory	Mild isolation ward	Chong Qing	good

Number	Age	Gender	Title	Length of service	Marital status	Former work section	Work section during the epidemic	Native place	Health status
P15	34	Female	Nurse-in-charge	13	Married	Emergency Intensive Care Unit	Mild isolation ward	Chong Qing	good
P16	28	Male	Nurse Practitioner	5	Married	Neurosurgery Intensive Care Unit	Mild isolation ward	Chong Qing	good
P17	36	Female	Nurse-in-charge	14	Married	Nephrology Department Haemodialysis Room	Mild isolation ward	HuBei	good
P18	27	Female	Nurse Practitioner	7	Married	Respiratory	Mild isolation ward	HuBei	good

Research methods

A phenomenological study was conducted herein, in which face-to-face, one-on-one, in-depth, semi-structured interviews were conducted with the premise of verifying that both interviewers and interviewees are well protected. The literature was consulted before the interview to formulate an interview outline in conjunction with the purpose of the study.

Before the formal interview, a pre-interview was conducted with three nurses so that we could repeatedly discuss and revise the content based on the results of the interview. The outline of the formal interview is as follows: (1) Please talk about your understanding and views on COVID-19. (2) How did you go from the beginning of the outbreak to the present? (3) What kind of impact has the outbreak made on your health and life due to the fact that you worked during the epidemic? (4) What are the difficulties you encountered during work? (5) How do you adjust to the impact that the epidemic situation and work has made on you?

Data collection

To collect the data, formal interviews were conducted with the nurses. Both the interviewer and the respondent were first-line clinical nurses fighting against the epidemic and thus can ensure the authenticity of the interview data. All nurses signed an informed consent form. During the interview, which lasted 20–60 min, the body language, tone, and expression of the interviewed nurse were recorded in real-time. In order to protect the privacy of the interviewed nurses, the research results are presented anonymously, and the name is replaced by a number.

Data analysis

The researchers used the double entry method to transcribe the audio and text records within 24 hours after the interview, and each interview record was encoded. Content analysis was used to organize and analyse the data. After two researchers jointly transcribed and sorted the original data, they independently coded, categorized, and refined the topics. When opinions differed, the research group reached a consensus to ensure the accuracy of the results.

Results

Theme 1: Experience at the work level

The difficulty of nursing operation implementation

In order to ensure the safety of medical staff and reduce the risk of infection, nurses were required to wear heavy protective clothing and multiple layers of gloves in order to enter the ward to complete required tasks (such as intravenous injection, intramuscular injection, and arterial blood collection), which to some extent increases the difficulty of carrying out nursing operations. P02: "In order to be safe, our protective equipment consists of many layers and is airtight. When the weather is relatively cold, the protective mirror easily fogs, which will have a great impact on our infusions and injections." P03: "We always wore light clothing when we performed our daily work. Now we wear heavy protective clothing and we need to wear multiple layers of gloves. If we cannot find the correct position when we perform infusions or arterial blood collection, it is very inconvenient for us to treat patients."

A sense of accomplishment in nursing work

Although there are multiple difficulties in entering clinical front-line work, nurses rise to the occasion with their innovative thinking, which not only results in patients receiving more optimal nursing treatment, but also increases the safety and ease of use of nurses' own protective equipment. P07: "We used to wear a suit of overalls with feet. There was a long strip on the collar of the overalls. It would bounce to the face when we took off the overalls." P15: "When we wear protective clothing, sometimes there will be skin indentations. We use glued-on sponges or other applications to protect us and reduce the damage to our facial skin."

Theme 2: Experience at the physical level

Fatigue

Front-line nurses undertake intensive nursing tasks, not only to complete specialized treatment and nursing, but also to perform tedious basic nursing, such as disinfection and isolation work. Especially in the treatment of severely ill patients, due to the severe respiratory symptoms of COVID-19 and the rapidity with which changes in the patient's condition can occur, nurses need to exercise caution. Numerous factors result in a heavy workload for the nursing staff, and physical exhaustion can result. P06: "After working for more than 10 days, our bodies are more or less tired, such as arms and legs, and muscles are sore." P17: "Because the patient's condition is unstable, nurses will often work overtime due to special circumstances, and the body will not get timely rest, which will aggravate fatigue and increase tiredness."

Injury and discomfort

To avoid cross-infection, medical staff wear protective clothing, isolation clothing, goggles, and masks while treating COVID-19 patients. However, wearing goggles and masks for too long will cause pressure injury to facial skin. Wearing protective clothing also causes oxygen deprivation, overheating, and inconvenience in using the toilet due to air tightness. P01: "We need to wear N95 masks at work, which cause indentations on the bridge of the nose and the skin of the face. After a long time, the skin will become red, and the mask will leave marks." P05: "At work, the body needs to withstand some pressure from protective gear, such as indentations caused by a face mask. My skin is relatively

sensitive, and wearing protection results in feeling hot and the subsequent development of eczema, which causes great discomfort and affects my mood at work.”

Theme 3: Psychological experience

Enormous psychological pressure

Because COVID-19 is highly infectious and the population is generally susceptible to it, there is a higher probability for nurses to become infected because they need to be in close contact with patients during treatment. At the same time, because the first-line nurses are away from their families and their family roles are weakened, they experience much worry and miss their family members. In addition, a nurse’s inability to cope with the severe condition of the critically ill patients produces negative emotions. Therefore, nurses need to bear huge psychological pressures that originate from themselves, their families, and their patients. P04: “The main aspect of my life is that I cannot go home after the outbreak. Sometimes I miss my family very much, and I worry about them, such as whether there are protective materials for them, such as masks. I also worry about myself.” P11: “We come into contact with many severely ill patients, including patients requiring endotracheal intubation. Many times, we felt that we were unable to treat them, and when this occurred, we felt very sad.” P18: “When we first entered the clinical line, we all felt very nervous and afraid. My parents have only one child, so what would they do if I got infected? Besides, I often stayed with my teammates.”

Post-traumatic stress disorder

Post-traumatic stress disorder (PTSD) refers to a mental disorder caused by sudden, catastrophic, or threatening life events that cause individuals to feel continuous stress even after the threat no longer exists (Chuan et al,2020). Because of the particularity and urgency of the work, first-line nurses often manifest acute traumatic stress disorder, and often exhibit psychological symptoms of insomnia. P08: “When I was interviewed, I was still a little afraid. I did not sleep well at night, and all I dreamed about was the epidemic situation.” P11: “I suffer from insomnia, and when I go to work, my body clock is out of order. Sometimes I cannot sleep and I have nightmares.”

Sense of mission or accomplishment

The nurses who went to the front line of the epidemic were confident that the war would be won. They assume the responsibility to go to the front line to treat patients, and have the sense of mission to never retreat in the face of the epidemic, and take the patient’s recovery, cure, and discharge as their own achievement. P10: “When we saw a lot of patients getting better and being discharged from the hospital, I think we saw hope, which is also equivalent to a sense of accomplishment. Many patients wrote thank-you letters to us, or created banners, etc., and we found a sense of accomplishment and the meaning of saving people.” P12: “I took care of a patient who was discharged directly from the intensive care unit within 7 days, and now the disease has not returned. He wrote me a thank-you letter, and thanked me for his care. When he said ‘thank you for saving my life,’ I was extremely moved by his heartfelt gratitude.” P14: “It is very necessary that we, as medical workers, should contribute our own efforts, respond to the call of the country, and do our best.”

Theme 4: Experience of TCM nursing

Frustration during treatment

Chinese medicine nursing embraces the holistic view of TCM as the guiding ideology of nursing work, and always attaches importance to nursing, advocating “three points of treatment, and seven points of nursing.” Therefore, in accordance with the requirements of TCM, nursing should adopt a more rigorous and serious attitude to treatment. However, because of the fierce outbreak of COVID-19 and the erection of temporary wards, the implementation of TCM nursing resulted in many difficulties. P09: “Our doctors need to look, smell, ask, and cut before prescribing TCM prescriptions to patients. However, in order to protect them, we need to touch the pulse with three layers of gloves, which is then difficult to accurately identify in many cases.” P10: “The difficulty I encountered was how to implement the TCM program in the intensive care unit. COVID-19 is an infectious disease, and many severely ill patients could not live without oxygen. Therefore, TCM therapy such as baduanjin and a medicinal bath cannot be adequately carried out.” P13: “One of the most difficult aspects of TCM practice is the evaluation of its efficacy. TCM requires continuous observation and nursing. However, due to our overloaded schedule and an excess of work, I cannot carry out continuous nursing for patients, which will diminish the overall effect of TCM nursing.”

The joy after treatment

More than 20 types of commonly used TCM techniques, such as acupuncture, moxibustion, cupping, massage, scraping, fumigation, and washing, are simple and effective, and they greatly enrich the content of TCM nursing. The use of traditional Chinese medicine technology by the nursing staff can be very beneficial to relieve pain and improve the disease condition in patients. P10: “Because many patients had insomnia at that time, I adopted the method of acupoint massage to help them. I mainly chose the yongquan, shenmen, and neiguan points of the patients for massage to promote sleep, which was very effective.” P16: “We applied some TCM special nursing, such as qigong baduanjin, TCM health exercises, five elements music therapy, moxibustion, foot baths, and the ear sticking point, which can help patients, especially for gastrointestinal reactions, insomnia, and other symptoms. Patient compliance is very good, and we are very satisfied with the treatment effect.”

Discussion

As protectors of patients' health, medical staff will fight on the clinical front lines to serve patients even when the risk of disease is known, which reflects the professional spirit and strong sense of mission of medical staff, and is true all over the world (Jun et al,2020). However, many difficulties are encountered in nursing work, such as shortages of protective clothing, gloves, and other items. A lack of protective equipment has the capacity to kill the nursing staff even though they possess enthusiasm and motivation regarding their work. In such difficult circumstances, most of the nursing staff will attempt to reduce the pain of the patients as much as possible, and also ensure their own safety and health with innovative methods for developing adequate protective equipment and for carrying out nursing. Thus, the nursing staff should be encouraged to reflect on their own problems, discuss positive improvement, and assist additional medical personnel responding to the danger of infectious diseases.

Rational allocation of human resources can effectively improve the work efficiency of nurses. It has been reported that extending shift time not only reduces work efficiency, but also increases the risk of medical malpractice (Melnik et al,2018). At the same time, in the case of high infectivity, it may also result in medical workers facing higher exposure risk (Jun et al,2020). Nursing managers should properly optimize nursing management methods to reduce the workload of nurses, implement a flexible scheduling system in combination with the actual situation, timely rectify any unreasonable workloads, and avoid continuous overtime work of nurses, in order to reduce the workload of front-line nurses to the greatest extent.

In order to reduce the damage caused by medical protective equipment, managers should actively explore and promote effective coping strategies. An example is when fog on a medical protective lens affects the line of sight. An appropriate amount of detergent can be used to wipe the lens dry after use so that it does not easily fog. The use of appropriate protective gear can result in injury to the nose and cheek area, and moisturizing cream can be applied to reduce friction, or a preventive dressing can be used to protect vulnerable body parts. If damage has occurred, antibiotic ointment can be applied as a disinfectant to prevent secondary infection (Jian et al,2020). At the same time, nurses should also monitor their own health, with emphasis on self-care, such as ensuring adequate sleep, reasonable eating habits, and a relaxed mood.

Nurses have always played an important role in disease prevention, infection control, and public health, and are also the largest rescue force in first-line disaster relief teams (Mo et al,2020). However, if there is too much negative emotion, it will not only affect their physical and mental health, but also reduce the quality of nursing work. It was reported that during the pandemic, the suicide rate of medical staff significantly increased (Davidson et al,2020). Therefore, nurses should be active in the removal of the impact of negative emotions, listen to their voices, vent their emotions, relieve their psychological pressure, and accept humanistic care. At the same time, it is also suggested that nurses should attach importance to the cultivation of their own mental health management ability, learn psychological self-adjustment, and increase their emotional adjustment ability by giving positive psychological encouragement to themselves, talking to family and friends, or participating in healing modalities such as mindful decompression and traditional Chinese medicine music therapy to stabilize their emotions and improve their resilience (Sampson et al,2020).

Nurses bear great psychological pressure, but also reflect the noble purpose of nursing, including its responsibility and sense of mission. It is incumbent upon medical workers to assist patients in the recovery of their health. The most optimal method for nurses to relieve their inner pressure is to truly help patients and achieve a certain amount of success.

With the deepening of our understanding of COVID-19, TCM nursing has achieved phased results. TCM nursing is guided by the idea of "treating the disease" and has the characteristic advantage of "recovering the defence and promoting the recovery," which plays a positive role in the rehabilitation of COVID-19 patients. In the process of nursing patients, many nurses adopt the characteristic TCM nursing therapy to help patients exercise their lung function, sleep, and reduce anxiety and depression. For patients that exhibit fatigue, weakness, fear, and symptoms such as insomnia, the use of Gong, Shang, Jue, Zhi, and Yu, which are five different tones and melodies of music, can be beneficial to modulate disease. In TCM, there are five lines of music therapy that can be used for rehabilitation of lung function. Natural breath healing methods can also be used, which involve slowly exhaling while being actively conscious of abdominal breathing to escort negative emotions out of the body, and subsequently heal the body and mind (Shu et al,2020). Physical training can be utilized to adopt the eight sections of brocade, taijiquan, and other traditional Chinese exercise methods.

During the process of TCM nursing, nurses meet many difficulties, but more nurses choose to implement TCM nursing because it enables patients to actively exercise, which not only hastens patient recovery, but also increases nurses' inner joy and sense of accomplishment. Therefore, in the process of treating COVID-19 patients, TCM nursing as an assistive technology can be quite effective.

Conclusion

During the process of fighting the COVID-19 outbreak, nurses experience psychological and physical suffering with varying degrees of pain. At the same time, nurses have achieved remarkable results, consisting of personal

satisfaction and joy. We should actively care for nurses, in body, mind, and family, and be deeply concerned regarding their welfare. Ensuring that they receive care themselves will help to relieve the suffering of the patients, and increase the amount of effective control that is available during COVID-19 outbreaks.

Declarations

Ethical Approval and Consent to participate

Approved by the Ethics Committee of Chongqing Traditional Chinese Medicine Hospital.

Consent for publication

All authors of this article agree to be published.

Availability of data and material

All data provided in this article can be Shared.

Conflict of Interest Statement

The authors state that there is no actual or potential conflict of interest in this article.

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Authors' contributions

HJZ contributed to the guarantor of integrity of the entire study, study concepts & design, literature research, clinical studies, experimental studies, data acquisition, manuscript preparation & editing. LSY contributed to the guarantor of integrity of the entire study, study concepts & design, literature research, clinical studies, experimental studies, data analysis, statistical analysis, manuscript preparation & editing. YP contributed to the literature research, data acquisition, manuscript preparation & editing. JL contributed to the study concepts & design. CXL and JL contributed to the clinical studies, experimental studies. LF contributed to the experimental studies, data acquisition. TTT and QYC contributed to the data analysis. RYL and LJZ contributed to the data analysis, statistical analysis. TL contributed to the statistical analysis. SZT contributed to the guarantor of integrity of the entire study, study concepts & design, definition of intellectual content, manuscript review. All authors have given approval for the final version to be published and have agreed to be accountable for all aspects of the work.

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