



A Qualitative Study on the Experiences of COVID-19 Ward Nurses in Shiraz, Iran

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Abstract

Background: The psychosocial risks and job stress have been considered as the most important factors affecting the occupational health and safety and, therefore, exerting significant impact on the health conditions of individuals, organizations, and national economy.

Objectives: The present study investigated the experiences of the nurses working in COVID-19 wards of specialty hospitals in Shiraz, Iran.

Methods: Semi-structured interviews were carried out via telephone. A total of 15 participants (11 nurses and 4 active supervisors of COVID-19 wards) were included in the study. A conventional content analysis was applied.

Results: COVID-19 ward nurses had a perception of differentiation because they had experienced difficult conditions and had higher social responsibilities. However, they managed to retain their social responsibilities despite suffering from anxiety and fear, physical and mental pressures, as well as various deficiencies. Four themes including fear and anxiety, burnout, deficiencies, and expectations were explored in this study.

Conclusions: Overall, COVID-19 pandemic was found to have posed several challenges for nurses as the front-line staff in Iran. Therefore, it was recommended that necessary measures and strategies should be adopted in order to address these challenges.

Keywords: Nurses, COVID-19 Wards, Anxiety, Burnout, Expectations

1. Background

The first positive case of novel corona virus (COVID-19) was reported in December 2019 in Wuhan, China, which spread around the country and, subsequently, around the world shortly thereafter (1). This pandemic posed many challenges for policymakers on the national and international scales (2-4). As a result, this outbreak shortly became a pandemic (5) and influenced all people across the globe regardless of their nationalities, races, and socio-economic status (6). Several underlying causes have been identified for this pandemic, including the weakness of national and local sovereignty as well as the inefficient public health and healthcare systems (7). The pandemic has also been associated with novel problems including the food insecurity, disturbance of normal life, and increase of parents, students, and teachers' responsibilities (8).

The psychosocial risks and job stress have been considered as the most important factors affecting the occupational health and safety and, therefore, exerting signif-

icant impact on the health conditions of individuals, organizations, and national economy (9). Nurses have also been recognized as the protectors of health systems who fight on the frontline against COVID-19 (10). The excessive workload could result in inefficient infection control, insufficient protective device utilization, physical violence, and verbal insults of the patients. Moreover, COVID-19 pandemic is likely associated with the fear of infection and various mental health problems such as depression, anxiety, and stigmatization among nurses (11), which could greatly affect their performance.

In sum, instability and unpredictability of the future, heavy workload and new working conditions, incompetence in controlling the pandemic, and lack of reliable information have been identified as the most difficult and ongoing challenges facing almost all nurses. A combination of high job requirements and lack of resources such as personal protective devices of health cares (e.g., face masks, face shields, gloves, gowns, and hand sanitizer)

could cause a great anxiety for nurses and, therefore, affect their health conditions (6). Since nurses, similar to any individuals in the society, have families, they face challenges when attempting to re-establish the balance between their professional commitments and personal responsibilities (12). As a result, they may choose isolation and separation from their families (6), which can have significant psychological effects on them. Other job-related challenges facing nurses include the ambiguous roles, changes in the working modes, unfamiliar contents of work, and changes in daily schedules (13).

Several studies have been carried out to investigate the impact of COVID-19 on nurses, and several contributing factors such as the burnout (14), job hazards and anxiety (13, 15), ethical challenges of nurses (16), mental health of nurses (12, 17), and organizational justice have been identified (9). A qualitative study conducted by Kackin et al., for instance, showed that working conditions and psychological or social effects aroused the most considerable concerns among nurses in Turkey (18). Miljeteig et al. (19) carried out another investigation in Norway and found that COVID-19 had several psychological adverse effects on the healthcare workers. He et al. (20) conducted a study in China and highlighted the following significant factors: (1) Different experienced psychological steps; (2) occupational stress and new challenges; (3) new concepts of the patient care.

2. Objectives

Before the present study, extensive research studies had been carried out in Iran with the aim of assessing the conditions of nurses during COVID-19 pandemic; however, not all aspects of the pandemic's adverse effects on nursing profession had been addressed. Furthermore, no investigation had been conducted with the aim of evaluating the full-time COVID-19 ward nurses. Therefore, the current study aimed to explore the perceptions and experiences of active nurses working at specialty hospitals in Shiraz City.

3. Methods

The present qualitative study was carried out from August to October 2020 to investigate the nurses and supervisors working at two COVID-19 centers in Shiraz city of Iran; however, other nurses and supervisors working at other hospitals were later included in the study. The given hospitals had been dedicated to COVID-19 patients since the first days of the outbreak in Iran and in, particularly, Shiraz; and all the infected or suspected patients were referred to these centers. Eleven study participants were selected

from among the patients admitted to the first center, as the main center for treating COVID-19, whose entire wards had been allocated to COVID-19 patients. Four participants were from the second center whose wards were partly allocated to COVID-19 patients. Due to the lack of sufficient workforce, the healthcare managers of Shiraz had decided to send workforce from other hospitals to the centers – especially to the first center – or hire contract workforces. It is noteworthy that those passing their training courses and being employed by the Ministry of Health two years after their graduation had also been asked to fully cooperate with the above-mentioned hospitals. Moreover, the essential care equipment and other facilities had been provided for COVID-19 wards.

The research sample included the nurses and supervisors working at two COVID-19 centers in Shiraz during the studied period from August to October 2020. The purposeful sampling technique was adopted to select the study population. After exchanging the correspondence with nursing managers of the two centers, we were provided with a list of active nurses along with their phone numbers. Then written invitation letters specifying the overall objectives of the research and containing information about the researchers were sent by the first author via an instant messaging application. Finally, interview times were set for those who were willing to participate in the study.

The semi-structured telephone interviews were carried out at the specified times by a data collector (A.K.S) and the participants were asked about the following questions:

- As an active nurse working in the COVID-19 ward, please tell us about your experiences during this period.
- As a COVID-19 ward nurse, what are the most important challenges you are faced with?
- What do you expect from the authorities?

It was not surprising that the interviewer asked participants to offer more explanations when required. Words and phrases like “uh-huh”, “yeah”, “that’s right”, etc. were used to encourage the interviewees. In total, 11 nurses and 4 supervisors were interviewed based on the data saturation criterion.

This study was approved by the ethics committee of Shiraz University of Medical Sciences (IR.SUMS.REC.1399.784). The written informed consent was obtained from all participants prior to attend the interview sessions. In addition, all participants were allowed to withdraw from the study at any stages and all verbatim transcriptions were saved anonymously.

3.1. Data Analysis

The data were transcribed and analyzed using the Erlingsson and Brysiewicz conventional content analysis ap-

proach (2017). The main steps in this approach were the unit identification, unit coding, and transformation of the categories into themes. Data reading was performed several times and the validity and reliability were confirmed by posing the questions designing by three researchers; the data coding was also evaluated and confirmed by two researchers. Since the transferability of themes was highly considered, an attempt was made to improve it based on the collected data. The research path compliance, correct sampling, and accommodation of data analysis method with research objectives were all given a careful attention by the researchers. Also, member checking method was applied during the interviews in order to perform the category confirmation.

Furthermore, the transferability was achieved by providing the sufficient details of the fieldwork context for readers. Therefore, all disagreements among coders were resolved through the discussion and consensus strategies. It is noteworthy that authors with various scientific backgrounds and interests participated in the analysis process in order to foster the critical reflexivity and decrease the risk of bias (21). Ethical considerations were also considered with the aim of maintaining the anonymity of participants. The researchers attempted to analyze and report the data honestly.

4. Results

Data analysis showed that the nurse working in COVID-19 wards had different perceptions created by problems and extreme pressures associated with performing the healthcare procedures for COVID-19 patients. On the other hand, a type of the perception of differentiation was found to have been shaped in nurses' minds due to the social and media contexts introducing them as social heroes, specifically during the first and second waves of the disease. A combination of pressure tolerance and perception of differentiation was detected to have generated specific expectations among the participants. They expected the authorities to pay due attention to nurses, especially to the contract ones. Furthermore, they expected the government to give the nurses special privileges. They argued: "We can keep on our cooperation with the health system until the end of the pandemic if these expectations are met." According to our study results, the participants had common experience of fear, anxiety, burnout, and deficiencies, and had widespread expectations (Table 1).

4.1. Fear and Anxiety

Nurses have been on the frontline against COVID-19 since the beginning of the pandemic and gained valuable

experiences. According to our results, working under ongoing conditions and helping infected patients were the causes of anxiety, which may have been resulted from their fear of being at risk of infection. Indeed, many patients had similar experience of anxiety about infection even before they actually became infected during the first and second waves of COVID-19. This disease is associated with fears of surviving and organizational exclusion. The second factor was the result of preventing the contagion among the staff; also, it was possible that other people blame the affected nurse because of performing improper self-care processes.

"During the first wave, patients did not announce that they were affected because of the dominated social and individual phobias. Therefore, only the authorities were aware because we did not know that if affected patients would be survived or not. Usually, the nurses with COVID-19 had been taken time off for fourteen days to prevent the formation of anxiety among other nurses and improve their morale (a 40-year-old female supervisor)."

The second challenge, specifically during the first and second waves, was the fear of contagion among family members. Therefore, the fear and anxiety were considered as the most important concerns among nurses. Moreover, a suspension space was formed during the first and second waves due to the lack of knowledge about diagnosis and treatment, when the nurses attempted to control the situation using three approaches. Single nurses stayed at dormitories in the hospitals and did not go homes. One of the participants with a good financial condition preferred to stay in a bachelor pad out of the hospital. Moreover, majority of the single participants had no direct contacts with their families until the end of the investigation. The second group consisted of male married nurses who sent their wives and children to their parental homes and lived alone. The most important group which was reported to experience the highest level of fear and anxiety was the third group consisting of married female nurses. These individuals neither stayed at hospital, nor did they leave their homes. Therefore, they suffered from the highest level of fear and anxiety about being at risk of infection and contagion especially among their family members. The nurses with young children or infants experienced the highest stress. Being rejected by the family was one of the most serious concerns among these Individuals. In this regard, one of the participants stated that:

"I am afraid of being infected and it is not because of me, but because I do not know what to tell my husband. He will say that I shouldn't have gone to work (a 39-year-old nurse)."

"There is a nurse with four children and she has become infected. Her family has asked her not to return home if she gets infected. Now, she doesn't know what to

Table 1. The Initial Codes, Categories, and Themes Derived from the Investigation

Theme	Categories	Meaning Units	Statements
Fear and anxiety	The obsession of receiving positive COVID-19 test results; fear; anxiety; role conflicts; family issues; stress	Anxiety in the family; fear of receiving positive COVID-19 test results; the accusation of being an infection agent; problems of female nurses who have children; feelings of weakness, tiredness, fear, and stress of infecting the family members; fear of being infected; losing the temper; inability to meet the needs of patients; having weak interactions with patients	"I always think that maybe I am infected."
			"Now, we are afraid of getting infected. I myself became infected once, and other people blamed me."
			"It has been six months I have not seen my family. I am still afraid of affecting them because if it happens, I will feel guilty, and others will also blame me."
Burnout	Long duration of the pandemic Physical and mental problems	Long-term insomnia; feeling weak and tired; extreme weight loss; skin turgor; physical weakness; constant sweating; limited elimination; feeling disgusted; limitation of drinking, eating, and elimination; migraine headaches	"I do not have any rest during the night."
			"I'm not in the mood to talk to patients and companions."
			"I had extreme weight loss and my skin is not fresh anymore."
			"I've got so weak physically."
			I really feel disgusted."
			"I have migraine headaches."
			"We sweat a lot because of wearing PPE kits and it is more difficult for women because they have long hair."
Lack of facilities and equipment	Limitations of facilities labor force shortage	Limitations of PPE kits, face masks (during the first wave), and equipment (especially in ICU); lack of nursing staff; training the newly employed nurses	"I don't go to the toilet during the night."
			"During the first days, we faced with the lack of PPE kits."
			"We don't rest at all because our PPE kits would be exposed and have to be changed."
			"At first, there was the lack of face masks and N95 masks." "Only two PPE kits are allocated to the night shifts, which is not enough."
			"Sometimes we don't have enough equipment such as syringe pump or infusion pump for COVID-19 patients in ICU."
			"There aren't enough nurses, and the new ones aren't trained."
Expectations	Psychological counseling	Need for psychological counseling	"We spend most of our time to train the new nurses."
	Organizational support	Restrictions and unavailability of psychological counseling	"They have offered some counselors, but I don't have enough time to make an appointment."
	Emotional support	Paying attention to the material needs of nurses	"I think financial issues are important for all the nurses, especially COVID-19 ward nurses."
		Paying attention to the employment status	"The most important thing is to employ us instead of extending the contracts."
		Commitment to hiring part-time nurses	"More tolerance of nursing managers with ward nurses."
		Tolerance	"Empathy with the problems of ward nurses by hospital managers and nursing managers."
		Empathy	

do (a 55-year-old male supervisor)."

4.2. Burnout

The long-term use of personal protective equipment (PPE) kits causing the constant sweating had led to the burnout of the studied nurses. This problem was even more serious and annoying for female nurses. They had to wear PPE kits during the night shifts for 13 hours, which was an extremely unpleasant experience. Adding to the complexity of their situation, they had to keep these kits

clean, which was one of the most important issues. Avoiding eating and drinking during the shifts were a normal strategy practiced by nurses during the first and second waves of COVID-19. Majority of the nurses felt that removing the face mask or shield and getting ready to eat food may have exposed their PPE to the virus. It caused a lot of stress and anxiety due to the lack of sufficient equipment, specifically during the first and second waves. Furthermore, eating and drinking increased the probability of using the toilet; however, using the rest room increased

the possibility of PPE kits pollution and forced the nurses to change the kits, which, in turn, increased their burdens as well as the organizational costs. Therefore, the nurses had to avoid eating and drinking during their shifts, which had significant adverse effects on their health conditions. Nurses argued that they had experienced extreme weight loss and unprepossessing appearance due to working in difficult conditions and for long shifts. Moreover, they suffered from extreme physical weaknesses due to the disturbance of eating schedules. Although nurses were constantly sweating because of wearing PPE kits, they did not drink too much and it caused digestive and elimination problems for them. All these factors made them feel disgusted because many of them suffered from physical problems such as backache.

"I have lost a lot of weight! Even some of my obese colleagues have lost weight because we avoid eating and drinking at work (a 29-year-old female nurse)."

"We sweat a lot and our hair gets wet when we wear these PPE kits. I don't use the rest room during the whole shift until I get home (a 25-year-old female nurse)."

In fact, a combination of high workload and inappropriate working conditions in the vicinity of infected patients was responsible for the prevalence of weakness and insomnia among nurses. They argued that they were more sensitive, felt bored, and lost their temper easily. In other words, they practiced a poor self-management and were not able to control their feelings properly, which influenced their interactions with other people because they had dedicated themselves to working only.

"I don't sleep at all when I go to work, even for five minutes. It has been five months since I didn't sleep at the hospital or during my shifts. I just sit down on my chair (a 28-year-old female nurse)."

"I feel like I have no strength and I'm bored. I used to do artworks and have leisure time; now I'm in a terrible mood, unable to do my favorite activities. Even my room is messier than ever (a 23-year-old female nurse)."

"I fuss about everything. I didn't use to be like this, but now I am. If my colleague tells or reminds me of something, I behave aggressively (a 28-year-old female nurse)."

4.3. Lack of Facilities and Equipment

Like the nurses of many countries, lack of facilities and equipment was one of the main problems among the participants in this study. They also faced with other challenges such as lack of N95 masks, detection kits, and PPE, which was more prevalent during the first wave. On the other hand, there was not enough equipment allocated to COVID-19 hospitals, and the lack of infusion pumps in ICU was another major problem. Moreover, nurses needed suitable recreation rooms in COVID-19 wards with appropriate

protective equipment such as separated rest rooms, beds, etc. However, they could not rest because they were not sure about the appropriateness of recreation rooms and even avoided eating due to the fear of getting infected. All these factors had negative effects on their sleeping and relaxation, as they were so tired during the shifts, especially the night shifts.

"There aren't enough facilities and equipment. We are always faced with the lack of kits, syringes, etc. (a 40-year-old female supervisor)."

"The recreation rooms must be appropriate to make us feel safe; however, they are not so. You don't dare to rest there (a 26-year-old female nurse)."

"We are in the emergency department. The companions come and beg for hospitalization, but we don't have any empty patient beds (a 25-year-old female nurse)."

"Nurses in COVID-19 wards must have all the equipment (a 55-year-old male supervisor)."

"The new nurses don't know many things. We don't have enough time to both treat the patients and orient these nurses."

4.4. Expectations

Most of the participants expressed that nurses needed counseling psychology sessions. The authorities had been offered specific centers or experts; however, the participants believed that they did not have enough time to make appointments. Therefore, the counseling had to be provided actively for the nurses of COVID-19 wards. As mentioned, nurses had a perception of differentiation, which was more highlighted during the first and second waves because both the formal and informal media of Iran referred them as "healthcare heroes". Also, nurses who died due to COVID-19 infection were called "healthcare martyrs". The formation of such perceptions of differentiation along with the pressure of tolerance led to expectations that were classified into three groups. First, they needed emotional and psychological support. Participants believed that the health authorities at different levels had to make direct interactions with nurses by talking to them even for a few minutes. Nurses complained that authorities came to the hospitals, made decisions, and left there without talking to the nurses or even thanking them. However, there were some authorities who visited these wards. The behaviors of most of the authorities and the fact that supervisors avoided coming into the wards and just said hello to the nurses from outside were not acceptable. In fact, they mainly considered the organizational support, which implied that COVID-19 ward nurses expected the managers to come and show their sympathy instead of visiting these wards occasionally. In other words, the support of these managers could be effective for nurses be-

cause it made them feel that they were important and useful for the hospital. The second factor was related to the organizational justice, especially in the payment mechanisms. COVID-19 ward nurses believed that more attention had to be paid to nurses. Although the authorities confirmed this issue, it rarely occurred in practice. Therefore, it was better that their debts be paid. In other words, their morale could be improved through providing financial support because in current conditions nurses need financial resources to manage their living affairs and these financial supports could make the situation tolerable. Due to the financial requirements among nurses, paying attention to specific payments would increase their motivation. It is noteworthy that COVID-19 ward nurses have sacrificed their lives and families; therefore, providing financial supports would significantly encourage them. Finally, it should be noted that since most of the nurses were contract employees, it was highly expected that specific privileges be considered for them and enter the priority list of the Health Ministry for employment in the future. One of the participants insisted that: "I'm ready to keep on working at COVID-19 wards if I know that I will be employed within a few years."

"It has been five months since the pandemic; however, the nursing manager has not come into the ward. Why? Some supervisors just come and say hello from the outside and leave. Are they more important than us? I myself will be more encouraged if my manager comes into the ward (a 26-year-old female nurse)."

"The managers leave here very soon, which is not useful. I wish they come and talk to us and show their empathy (a 29-year-old female nurse)."

"They have offered some counselors, but I don't have enough time to make an appointment. Counselors must be accessible for nurses (a 30-year-old female nurse)."

"I think financial issues are really important for all of the nurses, especially COVID-19 ward nurses (a 25-year-old female nurse)."

"The most important thing is to employ us instead of extending the contracts (a 37-year-old female supervisor)."

5. Discussion

This study showed that nurses fighting against COVID-19 pandemic faced with various problems. For example, their working environment in COVID-19 wards was boring, difficult, and associated with fear and anxiety. In addition to the mental and psychological concerns, there were other personal problems, including migraine headaches and backaches due to long-term shifts, the absence of patients' companions, reduction of vacations, and enhancement of work responsibilities. Also, married female nurses

have more family responsibilities, which increases their concerns because they are always worried about getting infected. All participants were obsessed about the contagion because nurses are the first accused group.

The results of this study were in line with those reported by Chidiebere Okechukwu et al. (11), He et al. (20), Hossain and Clatty (12), Sperling (6), and Fan et al. (22). Burnout was another finding that was in line with many studies, including the one conducted by Chidiebere Okechukwu et al. (11).

Moreover, it was reported that problems of work environment, negligence of the managers, and lack of facilities and equipment increased these challenges. This is due to the fact that the companions of patients would help the healthcare workers in the past, but the responsibilities and burnout significantly increased among nurses during the COVID-19. The lack of facilities and equipment was mentioned in several studies, causing too much physical and psychological pressure. Kalateh Sadati et al. (17) mentioned that this problem was mainly related to the first wave, and it was also required that nurse leaders implement adequate adaptation or coping strategies in COVID-19 wards (23-25). The hospital wards must apply an efficient public health emergency strategy, provide training courses to increase the knowledge and experiences of nurses, improve the empathy, and reinforce the sense of self-efficacy among nurses to develop the quality of care (10).

Another finding of this study was the experiences of nurses at COVID-19 wards. These nurses experienced a perception of differentiation, which led to specific expectations. During the first and second waves, nurses and doctors were considered as the health heroes in Iran. In this respect, some issues should be considered by the health system policymakers. First, the interactions of policymakers and authorities with nurses should be reinforced. If authorities come to the wards and visit the healthcare workers, they will be significantly encouraged; also, this can fill the gap between these two groups. Nurses also stated that they needed accessible psychological support. In fact, the health system should actively help this group. The healthcare workers expected that counselors come and talk to them. There were also several expectations regarding the pensions and employment of the contract nurses. Of course, consideration of these expectations would significantly encourage the COVID-19 ward nurses. It is recommended that the mentioned expectations be considered by the health system policymakers, hospital officials, and nursing managers in Iran.

5.1. Conclusions

COVID-19 pandemic has posed several challenges for nurses as front-line staff in Iran. It is necessary to decrease these challenges by adopting several strategies, including the elimination of nursing structural problems, paying attention to the active nurses of COVID-19 ward and their psychological needs, providing emotional and psychological supports, and improving financial and organizational rights.

5.2. Limitations

This is a qualitative study with limited generalizable results. The data collection process was difficult due to the pandemic, and the psychological conditions of participants negatively affected the researcher.

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Footnotes

Authors' Contribution: AKS and ST designed the study, analyzed the data, interpreted the results, and wrote the manuscript drafting. SSH, ZF, and LZ interpreted the results and wrote the manuscript draft. KBL interpreted the results and designed the study. The final version was confirmed by all authors for submission.

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Data Reproducibility: The datasets used and/or analyzed during the current study available from the corresponding author on reasonable request.

Ethical Approval: This study was approved by Shiraz University of Medical Sciences (ethics code: IR.SUMS.REC.1399.784; Link: ethics.research.ac.ir/EthicsProposalView.php?id=153362).

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Informed Consent: We obtained a written consent form from all participants prior to the interview sessions.

References

1. Zhang W, Du RH, Li B, Zheng XS, Yang XL, Hu B, et al. Molecular and serological investigation of 2019-nCoV infected patients: implication of multiple shedding routes. *Emerg Microbes Infect.* 2020;**9**(1):386–9. [PubMed ID: 32065057]. [PubMed Central ID: PMC7048229]. <https://doi.org/10.1080/22221751.2020.1729071>.
2. Sadati AK, Bagheri Lankarani K. Sanctions, Misinformation, and Polinfodemic During COVID-19: The Need for Global Collaborations. *Shiraz E-Med J.* 2021;**22**(5). e114002. <https://doi.org/10.5812/semj.114002>.
3. Zarei L, Shahabi S, Sadati AK, Tabrizi R, Heydari ST, Lankarani KB. Expectations of citizens from the government in response to COVID-19 pandemic: a cross-sectional study in Iran. *BMC Public Health.* 2021;**21**. [PubMed ID: 33832471]. [PubMed Central ID: PMC8027969]. <https://doi.org/10.1186/s12889-021-10722-y>.
4. Zarei L, Shahabi S, Sadati AK, Tabrizi R, Heydari ST, Lankarani KB. Citizens' Expectations from Government in Response to COVID-19 Pandemic: A Qualitative Study in Iran. *BMC Public Health.* 2021;**Preprint**. <https://doi.org/10.21203/rs.3.rs-25745/v4>.
5. Mani A, Estedlal AR, Kamali M, Ghaemi SZ, Zarei L, Shokrpour N, et al. Mental health status during COVID-19 pandemic in Fars Province, Iran: timely measures. *BMC Public Health.* 2020;**20**(1):1866. [PubMed ID: 33287775]. [PubMed Central ID: PMC7719730]. <https://doi.org/10.1186/s12889-020-09928-3>.
6. Sperling D. Ethical dilemmas, perceived risk, and motivation among nurses during the COVID-19 pandemic. *Nurs Ethics.* 2021;**28**(1):9–22. [PubMed ID: 33000673]. [PubMed Central ID: PMC7533465]. <https://doi.org/10.1177/0969733020956376>.
7. Wagner EH. The vulnerability of nursing home residents to the Covid-19 pandemic. *International Journal of Care Coordination.* 2020;**23**(2-3):57–60.
8. Schroeder RA. Adaptation or Revolution: Telemental Health and Advanced Practice Psychiatric Nursing During COVID-19. *J Am Psychiatr Nurses Assoc.* 2022;**28**(3):241–8. [PubMed ID: 33164642]. <https://doi.org/10.1177/1078390320970638>.
9. Gimenez-Espert MDC, Prado-Gasco V, Soto-Rubio A. Psychosocial Risks, Work Engagement, and Job Satisfaction of Nurses During COVID-19 Pandemic. *Front Public Health.* 2020;**8**:566896. [PubMed ID: 3330313]. [PubMed Central ID: PMC7716584]. <https://doi.org/10.3389/fpubh.2020.566896>.
10. Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, et al. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *Lancet Glob Health.* 2020;**8**(6):e790–8. [PubMed ID: 32573443]. [PubMed Central ID: PMC7190296]. [https://doi.org/10.1016/s2214-109x\(20\)30204-7](https://doi.org/10.1016/s2214-109x(20)30204-7).
11. Chidiebere Okechukwu E, Tibaldi L, La Torre G. The impact of COVID-19 pandemic on mental health of Nurses. *Clin Ter.* 2020;**171**(5):e399–400. [PubMed ID: 32901781]. <https://doi.org/10.7417/CT.2020.2247>.
12. Hossain F, Clatty A. Self-care strategies in response to nurses' moral injury during COVID-19 pandemic. *Nurs Ethics.* 2021;**28**(1):23–32. [PubMed ID: 33124492]. [PubMed Central ID: PMC7604672]. <https://doi.org/10.1177/0969733020961825>.
13. Labrague LJ, De Los Santos JAA. COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *J Nurs Manag.* 2020;**28**(7):1653–61. [PubMed ID: 3270780]. [PubMed Central ID: PMC7436313]. <https://doi.org/10.1111/jonm.13121>.
14. Manzano Garcia G, Ayala Calvo JC. The threat of COVID-19 and its influence on nursing staff burnout. *J Adv Nurs.* 2021;**77**(2):832–44. [PubMed ID: 33155716]. <https://doi.org/10.1111/jan.14642>.
15. Shang Y, Pan C, Yang X, Zhong M, Shang X, Wu Z, et al. Management of critically ill patients with COVID-19 in ICU: statement from front-line intensive care experts in Wuhan, China. *Ann Intensive Care.* 2020;**10**(1):73. [PubMed ID: 32506258]. [PubMed Central ID: PMC7275657]. <https://doi.org/10.1186/s13613-020-00689-1>.
16. Morley G, Grady C, McCarthy J, Ulrich CM. Covid-19: Ethical Challenges for Nurses. *Hastings Cent Rep.* 2020;**50**(3):35–9. [PubMed ID: 32410225]. [PubMed Central ID: PMC7272859]. <https://doi.org/10.1002/hast.1110>.

17. Kalateh Sadati A, Zarei L, Shahabi S, Heydari ST, Taheri V, Jiriaei R, et al. Nursing experiences of COVID-19 outbreak in Iran: A qualitative study. *Nurs Open*. 2021;**8**(1):72–9. [PubMed ID: [32904939](#)]. [PubMed Central ID: [PMC7461197](#)]. <https://doi.org/10.1002/nop2.604>.
18. Kackin O, Ciydem E, Aci OS, Kutlu FY. Experiences and psychosocial problems of nurses caring for patients diagnosed with COVID-19 in Turkey: A qualitative study. *Int J Soc Psychiatry*. 2021;**67**(2):158–67. [PubMed ID: [32674644](#)]. <https://doi.org/10.1177/0020764020942788>.
19. Miljeteig I, Forthun I, Hufthammer KO, Englund IE, Schanche E, Schaufel M, et al. Priority-setting dilemmas, moral distress and support experienced by nurses and physicians in the early phase of the COVID-19 pandemic in Norway. *Nurs Ethics*. 2021;**28**(1):66–81. [PubMed ID: [33430698](#)]. [PubMed Central ID: [PMC7879232](#)]. <https://doi.org/10.1177/0969733020981748>.
20. He Q, Li T, Su Y, Luan Y. Instructive Messages and Lessons From Chinese Countermarching Nurses of Caring for COVID-19 Patients: A Qualitative Study. *J Transcult Nurs*. 2021;**32**(2):96–102. [PubMed ID: [32783500](#)]. <https://doi.org/10.1177/1043659620950447>.
21. Gemignani M. Toward a critical reflexivity in qualitative inquiry: Relational and posthumanist reflections on realism, researcher's centrality, and representationalism in reflexivity. *Qualitative Psychology*. 2017;**4**(2):185–98. <https://doi.org/10.1037/qup0000070>.
22. Fan J, Hu K, Li X, Jiang Y, Zhou X, Gou X, et al. A qualitative study of the vocational and psychological perceptions and issues of transdisciplinary nurses during the COVID-19 outbreak. *Aging (Albany NY)*. 2020;**12**(13):12479–92. [PubMed ID: [32620713](#)]. [PubMed Central ID: [PMC7377893](#)]. <https://doi.org/10.18632/aging.103533>.
23. Hofmeyer A, Taylor R. Strategies and resources for nurse leaders to use to lead with empathy and prudence so they understand and address sources of anxiety among nurses practising in the era of COVID-19. *J Clin Nurs*. 2021;**30**(1-2):298–305. [PubMed ID: [33006794](#)]. [PubMed Central ID: [PMC7537231](#)]. <https://doi.org/10.1111/jocn.15520>.
24. Maben J, Bridges J. Covid-19: Supporting nurses' psychological and mental health. *J Clin Nurs*. 2020;**29**(15-16):2742–50. [PubMed ID: [32320509](#)]. [PubMed Central ID: [PMC7264545](#)]. <https://doi.org/10.1111/jocn.15307>.
25. Savitsky B, Findling Y, Ereli A, Hendel T. Anxiety and coping strategies among nursing students during the covid-19 pandemic. *Nurse Educ Pract*. 2020;**46**:102809. [PubMed ID: [32679465](#)]. [PubMed Central ID: [PMC7264940](#)]. <https://doi.org/10.1016/j.nepr.2020.102809>.