

Exploring the Impacts of Caring for Hospitalized COVID-19 Patients on Nurses: A Qualitative Descriptive Study

Abstract

Background: The impacts of caring for hospitalized COVID-19 patients on nurses are wide and varied and have not been comprehensively explained in the existing literature. The aim of this study was to explore the nurses' perception of the impacts of caring for hospitalized COVID-19 patients. **Materials and Methods:** In this qualitative descriptive study, data were collected via semi-structured interviews with 20 nurses and head nurses of emergency/internal wards and Intensive Care Units (ICUs) of 2 hospitals in Tehran, Iran. The purposive sampling method was used, and data analysis was performed using a conventional content analysis approach. **Results:** After data analysis, 12 subcategories, 3 main categories, and 1 theme (professional resilience) were extracted. The three main categories included "complex care," "professional development," and "caring self-efficacy." Caring for hospitalized COVID-19 patients was complex for nurses; however, the care provided to these patients could also lead to the nurses' professional development and caring self-efficacy. **Conclusions:** Health organizations and nursing managers can better manage the COVID-19 pandemic and other similar future crises through strategies such as providing nurses with adequate and diverse resources and facilities, encouraging and supporting nurses in various dimensions, providing positive media advertisements for the nursing profession and nurses, and providing nurses with necessary and applicable knowledge and skills.

Keywords: COVID-19, Iran, nurses, patient care, qualitative research, resilience

Introduction

Nurses are at the frontline of care provided to hospitalized COVID-19 patients.^[1,2] Some of the nursing care services and interventions explained in the previous literature for hospitalized COVID-19 patients are admission care, environmental management, health education, infection protection, medication administration, positioning, respiratory monitoring, and vital signs monitoring.^[3] COVID-19 has impacted every aspect of the personal and professional life of Healthcare Workers (HCWs), including nurses.^[4] The incidence of COVID-19 infection is reported to be higher among HCWs including nurses in comparison with non-HCWs, whereas the rate of hospitalization, case fatality, and Intensive Care Units (ICU) admission is reported to be lower in HCW Patients (HCWPs) compared to non-HCWPs.^[5]

In addition to issues such as mortality and morbidity, COVID-19 and caring for hospitalized COVID-19 patients are

the causes of considerable psychological distress and problems among nurses.^[6-8] The prevalence of psychological disorders such as anxiety and depression was higher in nurses, women, and first-frontline HCWs compared to physicians, men, and second-frontline HCWs.^[6] Nurses experience anxiety and distress about issues such as death, the nature of the disease, burial, disease transmission to oneself and one's family members, obsessive thoughts, conflict of fear and conscience, Personal Protective Equipment (PPE), and public negligence of preventive measures in caring for COVID-19 patients.^[7]

In addition to the physical and psychological impacts, nurses are faced with other issues such as increased workload due to infection control,^[1] lack or shortage of PPE, increased workload, inappropriate medications, lack of the required skills,^[9] lack of patient treatment, and the distinct conditions of the patients^[10] regarding the care provided to these patients. Some previous studies

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in countries such as Sri Lanka, Spain, and Iran have also reported some of the positive impacts of COVID-19 patient care on nurses, such as a sense of professional obligation, care provision as a new experience, personal satisfaction,^[11] job satisfaction,^[12] pleasant social experiences, and inner satisfaction among nurses.^[8]

Although some aspects of the impacts of caring for hospitalized COVID-19 patients on nurses have been mentioned in the literature,^[5-13] these impacts have not been comprehensively studied and discussed. The aim of this study was to explore the nurses' perception of the impacts of caring for hospitalized COVID-19 patients on nurses.

Materials and Methods

This qualitative descriptive study was a part of a research project conducted based on conventional content analysis (November 1, 2020, until June 1, 2021). The qualitative descriptive approach is frequently used in nursing research to better understand and describe a specific phenomenon and explore participants' beliefs, motivations, and experiences.^[14] Therefore, it is appropriate for exploring the nurses' perceptions regarding the impacts of caring for hospitalized COVID-19 patients on nurses.

The study participants included 20 nurses and head nurses who were selected through a purposive sampling method. The inclusion criteria were an academic degree in nursing, work experience of at least 1 month in the COVID-19 wards, and willingness to share experiences. The research settings were emergency and internal wards and ICUs of two educational hospitals (Imam Hossein Educational Hospital and Shahid Modarres Educational hospital) in Tehran, Iran, which admitted and hospitalized COVID-19 patients. The demographic characteristics of the participants are presented in Table 1.

Data were collected via face-to-face, in-depth, semi-structured interviews. Permissions for performing this study were acquired from universities and hospitals, and then the necessary coordination (about the date, time, and locations of the interviews) was made with each participant, and the interviews were carried out at an appropriate place (quiet room near the wards in which the participants worked) and time. After obtaining written consent forms for participation in the study from participants, the interviews were performed and audio-recorded, and transcribed verbatim. The first and corresponding authors participated in data collection and the interviews. Before starting the interview, the purpose of the study was explained to the participant. Three participants did not permit audio recording, and their interviews were transcribed on paper. With a purposeful sampling method, 20 interviews were conducted with 17 nurses and 3 head nurses. Interviews were continued based on the findings until data saturation; no new data were obtained in the three last interviews. The duration of the interviews was 40–55 min, depending on

the participants' interest and their workload. No interview was repeated, and no participant withdrew from the interview. No one else was present besides the participants and researchers at the time of the interview. The interview questions are presented in Table 2.

Concurrent with data collection, data analysis was performed using conventional content analysis.^[15] After each interview with nurses or head nurses, the interviews were transcribed immediately by the corresponding author of the article, and then, checked several times by all authors to increase accuracy and comprehension. The transcribed data were the primary source for describing the nurses' perceptions of the impacts of caring for hospitalized COVID-19 patients on nurses in this study. Subsequently, meaning units and codes were extracted from the interviews by the corresponding author, and then, the authors reached a consensus in this regard after reading the interviews several times. Finally, 756 initial codes and 448 codes were extracted after deleting duplicate codes. Meaning units and codes were reviewed several times and classified according to conceptual and meaning similarity. At the next stage, the collected data, meaning units, codes, subcategories, and categories were reviewed several times, and dominant concepts and the correlations between the categories were determined. Finally, the professional resilience theme was extracted through a comparative review of the categories and subcategories, this process was done by authors separately, and they reached a consensus in this regard.

The Lincoln and Guba criteria of credibility, dependability, confirmability, and transferability were used for rigor in this study.^[16] To ensure credibility, all researchers of this study were nursing faculty members who had participated in qualitative research before and had been delivering care to COVID-19 patients. Moreover, four participants read and confirmed their interviews and codes and confirmed that the codes are true to their experiences. The meaning units, codes, subcategories, categories, and themes were sent to three nursing researchers (nursing faculty members) outside the study, and their opinions and comments were taken into consideration and evaluated, and some of them were applied. In addition, they confirmed the formation process. To ensure dependability, most interviews were audio-recorded and transcribed verbatim. To ensure confirmability, the documents related to the study were preserved. To ensure transferability, the researchers tried to provide accurate and complete explanations of the research process and the participants were selected from different wards of different hospitals.

Ethical considerations

The proposal for this study was approved by the community health nursing group and the School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran. The ethical code approved by the Research Ethics Committees of the School of Pharmacy and Nursing and Midwifery- Shahid Beheshti University of

Table 1: Demographic characteristics of participants

Participant number	Gender	Age (year)	Nurse/head nurse	Work experience (year)	Degree	Place of work
1	Female	35	Nurse	13	BSc*	COVID-19 ICU****
2	Female	40	Nurse	18	BSc	COVID-19 ICU
3	Male	31	Nurse	9	BSc	COVID-19 ICU
4	Female	33	Nurse	11	MSc**	COVID-19 ICU
5	Female	45	Head Nurse	23	MSc	COVID-19 ICU
6	Female	33	Nurse	11	Ph.D.*** student	COVID-19 ICU
7	Male	44	Nurse	22	BSc	COVID-19 ICU
8	Female	44	Head Nurse	22	BSc	COVID-19 ICU
9	Female	34	Nurse	12	BSc	COVID-19 ICU
10	Female	34	Nurse	11	BSc	COVID-19 ICU
11	Female	27	Nurse	5	BSc	Emergency ward
12	Female	36	Nurse	14	BSc	Internal ward
13	Female	33	Nurse	11	BSc	Emergency ward
14	Female	39	Nurse	17	BSc	Internal ward
15	Female	32	Nurse	10	BSc	Emergency ward
16	Female	31	Nurse	9	BSc	Emergency ward
17	Female	35	Nurse	13	BSc	COVID-19 ICU
18	Female	46	Nurse	24	BSc	COVID-19 ICU
19	Female	24	Nurse	2	BSc	Emergency ward
20	Male	38	Head Nurse	16	MSc	Emergency ward

* BSc: Bachelor of science degree; **MSc: Master of science degree; ***Ph.D.: Doctor of philosophy; ****ICU: Intensive care unit

Table 2: Interviews questions

Type of questions	Examples
General questions	(e.g., “How do you feel while providing care to these patients?”, “What are your experiences regarding the positive and negative impacts of COVID-19 patient care?”)
Guiding questions	(e.g., “Is the care of COVID-19 patients different for you?”, “Do you have any good or bad experiences in this regard?”)
Confirmative questions	(e.g., “Could you give an example?”, “Could you elaborate?”)

Medical Sciences (Approval ID: IR.SBMU.PHARMACY.REC.1399.165). Then necessary permissions for data collection were obtained from Imam Hossein Educational Hospital and Shahid Modarres Educational hospital authorities. Oral and written consent for participating in the study and interviews and audio-recording of interviews were obtained from all participants. The principles of voluntary participation, anonymity, and confidentiality for the participants, and accuracy and bailment for the texts were respected throughout the study.

Results

At the end of the data analysis, 448 codes (after deleting duplicate codes), 12 subcategories, 3 main categories, and a theme (professional resilience) were extracted.

Professional resilience

Professional resilience was the theme of this study. Caring for hospitalized COVID-19 patients was complex

for nurses due to various issues and problems such as the nature of the disease, getting COVID-19, and heavy workload. However, care provided to these patients could also lead to the nurses’ professional development and caring self-efficacy. As a result, nurses have achieved a higher level of professional resilience. The theme of professional resilience has three main categories, including “complex care,” “professional development,” and “caring self-efficacy.” The theme, categories, and subcategories are presented in Table 3.

Complex care

This complexity in care is due to issues such as shortage of PPE and difficulty in using PPE, the difficult nature of caring for these patients, the perceived futility of care provided to some patients, infection of nurses or their family members with COVID-19, and psychological distress in nurses in the form of fear of loss, depression, stress, and fear of death/disease. As a result, the nurses described the care of COVID-19 patients as more complex than that of other patients. The complex care category included the subcategories of “costs of protective response,” “perceived difficult care,” “perceived futile care,” “disease transmission to oneself and family members,” and “psychological distress.”

Costs of a protective response

Protection against COVID-19 encompasses difficulties and costs for nurses, providing care with protective devices such as gloves is more difficult and time-consuming, and using masks and gowns can overheat the nurses’ body, especially in the summer. In this regard, a participant

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Table 3: Theme, categories, and subcategories extracted from the data

Theme	Main categories	Subcategories
Professional resilience	Complex care	Costs of the protective response
		Perceived difficult care
		Perceived futile care
		Disease transmission to oneself and family members
		Psychological distress
	Professional development	Protection motivation
		Empathetic cooperation
		Professional satisfaction
	Caring self-efficacy	Feeling of professional growth
		Appreciating health and life
Knowledge competency		
Skills competency		

said: *“Using PPE such as gloves, gown, and masks is very troublesome. It makes you more tired and more nervous, for example, you cannot glue with gloves, or when you are thirsty, you cannot drink water or even go to the bathroom”* [Participant (p 17)].

Perceived difficult care

The essence of caring for hospitalized COVID-19 patients was mostly perceived as difficult by nurses and its reasons were varied, for example, the high volume of patients admitted due to COVID-19, restlessness, mistrust, and agitation of some patients, and the need for more attention to COVID-19 patients with other underlying diseases or respiratory distress. In this regard, a participant said: *“Because visiting and accompanying these patients is forbidden, the nurse’s duties and tasks become much more difficult. The nurse must always be at the patient’s bedside to meet their basic needs or be careful that the patient does not manipulate connection equipment and devices and or fall from the bed”* (p 8).

Perceived futile care

Under some circumstances, caring for hospitalized COVID-19 patients was perceived as futile by some of the nurses, especially when the nurse felt that caring for some of these patients would not have an appropriate outcome for the patient and the patient would probably die despite all efforts. Regarding these problems, a participant stated: *“Many care services are futile and useless. For example, they take a patient to the ICU, and in all likelihood, whatever they do for her/him, she/he will soon die”* (p 1).

Disease transmission to oneself and family members

Some nurses were infected with COVID-19 due to their work and in some cases, they transmitted the disease to their family members. A participant stated: *“In the*

emergency ward, some patients do not wear masks, do not listen to anything I say, and take off their masks every time they talk. I got COVID-19 from one of the patients who had removed his mask” (p 15).

Psychological distress

Some nurses who cared for hospitalized COVID-19 patients experienced feelings of depression, fear, fatigue, stress, and anxiety for various reasons such as seeing patients die, patients in respiratory distress, overwork, and fatigue. Regarding these problems, a participant stated: *“One night, we were in the Cardiopulmonary Resuscitation (CPR) section in the emergency ward, and 8 COVID-19 patients died. This made me scared and very upset”* (p19).

Professional development

During the COVID-19 pandemic and care provision to COVID-19 patients, nurses were highly motivated to protect themselves and others against COVID-19 spontaneously; furthermore, they cooperated more with their managers and colleagues voluntarily and based on empathy. In several cases, the nurses felt high satisfaction with the care provided to these patients. As mass media has portrayed nursing roles in society during this pandemic, nurses feel that the nursing profession has grown these days, and its real role in society has received more attention and prominence. Finally, because of seeing and hearing the news about the mortality, morbidity, and complications of this disease, some nurses have stated that they now value their life, health, and opportunity to live more. The professional development category included the subcategories of “protection motivation,” “empathetic cooperation,” “professional satisfaction,” “feeling of professional growth,” and “appreciating health and life.”

Protection motivation

To protect themselves and others against COVID-19, nurses performed the protection strategies against COVID-19 by themselves and spontaneously and there was no need for constant supervision. A participant stated: *“My co-workers and I have been voluntarily adhering to protective and respiratory isolation protocols since the beginning of COVID-19... to take care of ourselves”* (p 18).

Empathetic cooperation

The level of cooperation with and assistance of other colleagues in providing care and working had spontaneously increased among nurses during the COVID-19 pandemic. Participant five said: *“On days that our ward was crowded, and all the patients had COVID-19 and were critical, it seemed that collaboration between the nursing staff was better. They all helped each other in the heavy workload, and we would finish the work shift properly together”* (p 5).

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Professional satisfaction

The participants of this study stated that they felt more professional satisfaction. The nurses had a pleasant feeling because of the care services they provided and helping and being useful to the patients, especially when the patient's condition would get better or the patient would be discharged. A participant stated: *"I felt useful to be able to care for these patients, stand by them, and be productive"*(p 6).

Feeling of professional growth

Nurses who worked in the COVID-19 wards stated that the perception of society and social media of the roles, duties, and positions of nursing has improved during the COVID-19 pandemic. In general, society has better understood the role of nursing. A participant stated: *"Mass media show nurses and their duties and services during the COVID-19 pandemic. I feel that the respect for the nursing profession in communities has increased, and it seems that people know us better than before"* (p 16).

Appreciating health and life

Seeing life-threatening conditions during the COVID-19 pandemic, nurses said that they valued their health, their life, and being with others more than ever before. Participant 20 said: *"Ever since I came to take care of these patients, I have been trying to appreciate life, my family members, my friends, and my colleagues. There may be no tomorrow, and we may not have another opportunity"* (p 20).

Caring self-efficacy

Care provision to hospitalized COVID-19 patients enables nurses to learn and apply new and necessary knowledge and skills in caring for these patients and achieve caring self-efficacy. Due to the frequent encounters with hospitalized COVID-19 patients, nurses said that they were more familiar with the various knowledge and materials that were needed for caring for these patients. They provided these patients with the necessary care procedures every day and nurses achieved skill competency for these patients. The caring self-efficacy category included the subcategories of "knowledge competency," and "skills competency."

Knowledge competency

The nurses stated that they have acquired new care knowledge for hospitalized COVID-19 patients, such as familiarity with various types of medications, laboratory, and paraclinical tests, and the process of treatment and care in these patients. A participant stated: *"I learned a lot about caring for COVID-19 patients because of working in this ward, like familiarity with medications, the laboratory tests, and paraclinical tests, which are needed for these patients"* (p 5).

Skills competency

Nurses have acquired new skills for caring for these patients, for example, familiarity with various oxygen therapy methods and various ventilators, reducing respiratory distress in these patients, more accurate monitoring of and attention to these patients, and using different syringe pumps. A participant stated: *"Because of frequently working with non-invasive ventilation (NIV) devices, I learned how to set up the device...I have learned a lot of other skills that are specific to COVID-19 patients or are more common in these patients"* (p 5).

Discussion

In this study, the impacts of caring for hospitalized COVID-19 patients on nurses were explored. Caring for hospitalized COVID-19 patients was complex for nurses due to various issues and problems such as the nature of the disease, the risk of getting COVID-19, and the heavy workload. However, the care provided to these patients could also lead to the nurses' professional development and caring self-efficacy. Ultimately, nurses achieved a higher level of professional resilience.

Regarding professional resilience as the theme of this study, it should be stated that professional resilience in nurses in stressful environments is essential to maintaining the quality of their performance and ensuring the provision of safe care.^[17] Some of the influential factors in the resilience of nurses included self-efficacy, adaptation style, job stress, and education level.^[18] Resilience helps nurses combat their professional problems and use problem-solving skills more effectively rather than lose control of the environment. They will be able to cope with a wide range of psychological symptoms. Resilience encompasses concepts such as adaptation, optimism, self-efficacy, humanity, control, hope, spirituality, and competence.^[19]

Caring for hospitalized COVID-19 patients has had numerous impacts on nurses in different care settings; psychological issues such as anxiety and depression,^[6,7] higher COVID-19 morbidity rate in nurses,^[5] changes in routine care responsibilities and lack of resources,^[20] increased workload, and inconsistency^[10] were repeatedly reported in the literature. The use of PPE in care settings by nurses can prevent COVID-19 transmission but it also causes problems such as heat, headaches, skin issues, and shortness of breath for nurses.^[21]

Other studies have shown that the protection behaviors of HCWs and nurses were desirable during the COVID-19 epidemic.^[22] This consistency between findings may be due to the education, knowledge, and high perception of nurses about the risk of COVID-19 and their awareness of the need to observe protective behaviors against COVID-19. Also, other studies have shown that educational factors are effective in the behaviors^[23,24]

and also in the protective behaviors of the people against COVID-19.^[22] It is notable that the prevalence of COVID-19 and the care of these patients have affected the professional satisfaction of nurses; for example, a study in Lebanon has reported high satisfaction,^[25] but a study in Slovenian nursing homes reported decreased professional satisfaction of nurses.^[26] However, numerous factors, for example, pay satisfaction were correlated with the professional satisfaction of nurses during the current pandemic.^[27] In general, the COVID-19 crisis created challenges and opportunities at the micro (unit), meso (organization), and macro (national) levels of the nursing professional development practice, some of these challenges are the need for orientation in new staff, practice gaps, validation of staff competence, and self-care promotion. Opportunities for nursing professional development may include flexible and creative strategies for resolving and countering new problems.^[28]

Based on the results of the present study, caring self-efficacy was the last category. The provision of care to hospitalized COVID-19 patients enables nurses to enhance their new knowledge and skills regarding the care of these patients and other similar diseases. In a study in Sri Lanka, nurses' experiences of care provision to COVID-19 patients were evaluated, and the nurses described the care provided to these patients as a new experience in their professional life, a situation for learning new things and applying new care skills, and factors for inner satisfaction.^[11] These findings are consistent with the findings of the present study. The participants of this study included nurses working in educational hospitals, and private hospitals and outpatient clinics were not part of the research environment and this is one of the limitations of the study. To achieve maximum variation, it is better to conduct other studies in these environments.

Conclusion

According to the findings, some negative impacts such as perceived complex care, and some positive impacts such as professional development, caring self-efficacy, and professional resilience were the most important impacts of caring for hospitalized COVID-19 patients on nurses. Health organizations and nursing managers can reduce the negative impact of COVID-19 and other similar future crises through strategies such as providing nurses with adequate and diverse resources and facilities, and encouraging and supporting nurses in various dimensions. Moreover, they can help the development of the nursing profession with strategies such as providing positive media advertisements for the nursing profession and nurses and providing nurses with necessary and applicable knowledge and skills. Further research on the efficacy of the above strategies in resolving problems due to the COVID-19 pandemic and other similar situations is recommended.

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Conflicts of interest

Nothing to declare.

References

1. Cho KH, Kim B. The psychological responses of nurses caring for COVID-19 patients: A Q methodological approach. *Int J Environ Res Public Health* 2021;18:3605.
2. Fernandez R, Lord H, Halcomb E, Moxham L, Middleton R, Alananzeh I, et al. Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *Int J Nurs Stud* 2020;111:103637.
3. Asghari E, Archibald M, Roshangar F. Nursing interventions for patients with COVID-19: A medical record review and nursing interventions classification study. *Int J Nurs Knowl* 2022;33:57-63.
4. Weiss RL, Kennell J, Lakdawala L, Anzio N, Klamut KA, Lucas W, et al. Nursing professional development specialist's role in adapting education, onboarding, and just-in-time education during the COVID-19 pandemic. *J Nurses Prof Dev* 2021;37:143-6.
5. Alshamrani MM, El-Saed A, Al Zunitan M, Almulhem R, Almohrij S. Risk of COVID-19 morbidity and mortality among healthcare workers working in a large tertiary care hospital. *Int J Infect Dis* 2021;109:238-43.
6. Batra K, Singh TP, Sharma M, Batra R, Schvaneveldt N. Investigating the psychological impact of COVID-19 among healthcare workers: A meta-analysis. *Int J Environ Res Public Health* 2020;17:9096.
7. Galehdar N, Kamran A, Toulabi T, Heydari H. Exploring nurses' experiences of psychological distress during care of patients with COVID-19: A qualitative study. *BMC Psychiatry* 2020;20:489.
8. Ahmadidarhsima S, Salari N, Dastyar N, Rafati F. Exploring the experiences of nurses caring for patients with COVID-19: A qualitative study in Iran. *BMC Nurs* 2022;21:16.
9. Das S, Singh T, Varma R, Arya YK. Death and mourning process in frontline health care professionals and their families during COVID-19. *front Psychiatry* 2021;12:624428.
10. Pazokian M, Mehralian Q, Khalandi F. Experiences of nurses caring of patients during the COVID-19 pandemic: A qualitative study. *Evidence Based Care* 2021;10:17-24.
11. Rathnayake S, Dasanayake D, Maithreepala SD, Ekanayake R, Basnayake PL. Nurses' perspectives of taking care of patients with Coronavirus disease 2019: A phenomenological study. *PLoS*

- One 2021;16:e0257064.
12. Giménez-Espert MDC, Prado-Gascó V, Soto-Rubio A. Psychosocial risks, work engagement, and job satisfaction of nurses during COVID-19 pandemic. *Front Public Health* 2020;8:566896.
 13. Akkermans J, Richardson J, Kraimer ML. The Covid-19 crisis as a career shock: Implications for careers and vocational behavior. *J VocatBehav*2020;119:103434.
 14. FormanJ, DamschroderL. Qualitative content analysis.In: JacobyL, SiminoffLA, editors. *Empirical Methods for Bioethics: A Primer*, Advances in Bioethics. Vol. 11.Elsevier Ltd; 2008. p. 39-62.
 15. Graneheim UH, Lundman B. Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*2004;24:105-12.
 16. Streubert HJ, Carpenter R. *Qualitative research in nursing: Advancing the humanistic imperative*. 5thed.Wolters Kluwer Health | Lippincott Williams & Wilkins; 2011. p. 47-9.
 17. Cusack L, Smith M, Hegney D, Rees CS, Breen LJ, Witt RR, *et al.* Exploring environmental factors in nursing workplaces that promote psychological resilience: Constructing a unified theoretical model. *Front Psychol* 2016;7:600.
 18. Ren Y, Zhou Y, Wang S, Luo T, Huang M, Zeng Y. Exploratory study on resilience and its influencing factors among hospital nurses in Guangzhou, China. *Int J Nurs Sci* 2017;5:57-62.
 19. Yılmaz EB. Resilience as a strategy for struggling against challenges related to the nursing profession. *Chin Nurs Res* 2017;4:9-13.
 20. Chau JPC, Lo SHS, Saran R, Leung CHY, Lam SKY, Thompson DR. Nurses' experiences of caring for people with COVID-19 in Hong Kong: A qualitative enquiry. *BMJ Open* 2021;11:e052683.
 21. Unoki T, Sakuramoto H, Sato R, Ouchi A, Kuribara T, Furumaya T, *et al.* Adverse effects of personal protective equipment among intensive care unit healthcare professionals during the COVID-19 pandemic: A scoping review. *SAGE Open Nurs*2021;7:23779608211026164.
 22. Toghianian R, Ghasemi S, Hosseini M, Nasiri M. Protection behaviors and related factors against COVID-19 in the healthcare workers of the hospitals in Iran: A cross-sectional study. *Iran J Nurs Midwifery Res* 2022;27:587-92.
 23. Ghasemi S, Karimi L, Nehrir B. Professional responsibility-acquiring process among bachelor degree nursing students: A grounded theory study. *J Educ Health Promot* 2020;9:341.
 24. Ghasemi S, Nehrir B, Karimi L. Professional responsibility and its related factors among bachelor degree nursing students in Iran: A cross-sectional study. *Iran J Nurs Midwifery Res* 2020;25:376-81.
 25. Alameddine M, Bou-Karroum K, Ghalayini W, Abiad F. Resilience of nurses at the epicenter of the COVID-19 pandemic in Lebanon. *Int J Nurs Sci* 2021;8:432-8.
 26. Leskovic L, Erjavec K, Leskovic R, Vuković G. Burnout and job satisfaction of healthcare workers in Slovenian nursing homes in rural areas during the COVID-19 pandemic. *Ann Agric Environ Med* 2020;27:664-71.
 27. Sharif Nia H, Arslan G, Naghavi N, SivarajanFroelicher E, Kaveh O, Pahlevan Sharif S, *et al.* A model of nurses' intention to care of patients with COVID-19: Mediating roles of job satisfaction and organisational commitment. *J Clin Nurs*2021;30:1684-93.
 28. Harper MG, Dougherty D, Price MG. Nursing professional development practice during a pandemic [published correction appears in *J Contin Educ Nurs* 2020 Oct 1;51:446]. *J Contin Educ Nurs*2020;51:349-51.