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REVIEW

Ethical challenges of nurses related COVID-19 pandemic in inpatient wards: An integrative review



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Received 26 January 2021; accepted 1st April 2021

Available online 12 April 2021

KEYWORDS

COVID-19;
Ethical challenge;
Nurses;
Pandemic;
Patient

Summary

Introduction. — The COVID-19 pandemic is a social problem. Nurses face ethical challenges in providing care activities related to COVID-19.

Aim. — Therefore, this study aimed to explore the ethical challenges of nurses in COVID-19 pandemic.

Method. — This is an integrative review study conducted from 2007 to 2020. Databases of PubMed, Google Scholar, Scopus, Web of Science were searched. The results of the eligible studies (12 cases) were analyzed.

Results. — A total of 228 articles satisfied the inclusion criteria, and 12 articles were selected for analysis. The study units showed that the ethical challenges of nurses in caring for patients with COVID-19 consisted of three areas, including nursing; patient and family; and treatment equipment and facilities.

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Conclusion. — Providing care for patients with COVID-19 pandemic has increased nurses' ethical challenges. Therefore, nurses need to pay more attention to not face psychological problems and premature burnout.

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Introduction

The COVID-19 pandemic has so far infected nearly 100 million people worldwide and killed more than 2 million people in the world [1]. Nurses are one of the health professional groups in providing health care continuously and globally under this pandemic. They play a critical role in prevention and pandemic care [2]. According to the World Health Organization, there are about 28 million nurses working in the world. Meanwhile, the world still faces a shortage of about 5.9 million nurses to 2018. These deficiencies are more prevalent in African countries, South-East Asia, the Eastern Mediterranean region, and Latin America. It is also estimated that the number of nurses will reach 36 million by 2030. Studies in 37 countries also show that the death toll among health care workers between July 22 and August 15, 2020, 100,000 per population is 0.05 percent. Also, The International Council of Nurses' latest analysis in August 2020 shows that the number of nurses who have died after contracting COVID-19 in 44 countries is 1500 in August [3,4]. In China, for example, nurses make up 68% of medical staff as primary caregivers for COVID-19 clients [5].

The outcome of treatment decisions during the COVID-19 pandemic is uncertain for clients and even medical staff [6,7]. Clients with COVID-19 face many ethical challenges when receiving care. Ethical challenges mainly refer to moral dilemmas and conflicts, and other scenarios under challenging situations, which may not be solvable by nurses or other treatment teams. Ethical conflicts arise when a person is aware of the need for the right actions. However, some internal or external factors may have difficulty taking appropriate actions [6,7]. Thus, it highlights many of the difficult ethical issues that healthcare professionals face in caring for patients and families [2].

The studies have shown that nurses in clinical practice face serious ethical challenges in several ways, especially when caring for COVID-19 patients. Nurses may face ethical challenges due to, exposure to new illnesses, and lack of experience in new situations. The challenges may lead to mental health problems such as anxiety, fear, stress, insomnia, or irritability [5,8].

The inherent nature of nursing is respect for human rights [9]. Violation of individuals' rights, such as poor access to information, education, and care, increases individuals' basic vulnerabilities to COVID-19 disease. Reducing this vulnerability requires actions that enable individuals and communities to make effective decisions for their life. The code of ethics in the COVID-19 pandemic is

not responsive and has caused nurses to face many ethical dilemmas. Therefore, administering ethical guidelines will lead to fewer challenges, more patient satisfaction, and the quality of care [10].

Besides, ethical challenges have increased in health care systems due to the enormous hospitalized patients with COVID-19 in intensive care units, lack of nursing staff, high expectations for delivering the best care for the patients, and overlooking the nursing staff services.

We conducted integrative review to identify nurses' ethical challenges in the COVID-19 pandemic. To identify discrepancies in various studies related to nurses' activities. The integrative review approach is particularly well-suited for reviewing a topic across diverse research designs and methodologies to provide a more comprehensive understanding of the phenomenon under study [11].

Aim

As there is an ethical gap in nursing literature about COVID-19, this study aimed to explore nurses' ethical challenges in COVID-19 Pandemic in inpatient wards.

This study's question: What are the ethical challenges that nurses face in COVID-19 pandemic in inpatient wards?

Method

This is an integrative study conducted by the Ganong approach. Integrative review study is a method that collects and synthesizes the knowledge generated by analyzing the results extracted in the studies selected for review [12].

This study was conducted in the following steps: Setting a research question; sampling or selecting studies for review; representation of the reviewed studies; analysis of selected studies; Interpretation of results and final report [12].

In the COVID-19 pandemic, ethical challenges were observed in the nursing work. Therefore, the research question was emerged as, *what are the ethical challenges that nurses face in COVID-19 pandemic in inpatient wards?* Based on this question, the study was conducted from 2007 to 2020.

The inclusion criteria for sampling included English quantitative and qualitative articles, reviews, letter to the editor, and perspectives papers published in national and international indexed scientific publications from 2007 to 2020 in the databases of PubMed, Google Scholar, Scopus, and Web of Science. The MeSH keywords for searching the databases were *Coronavirus, Pandemic, Nursing care,*

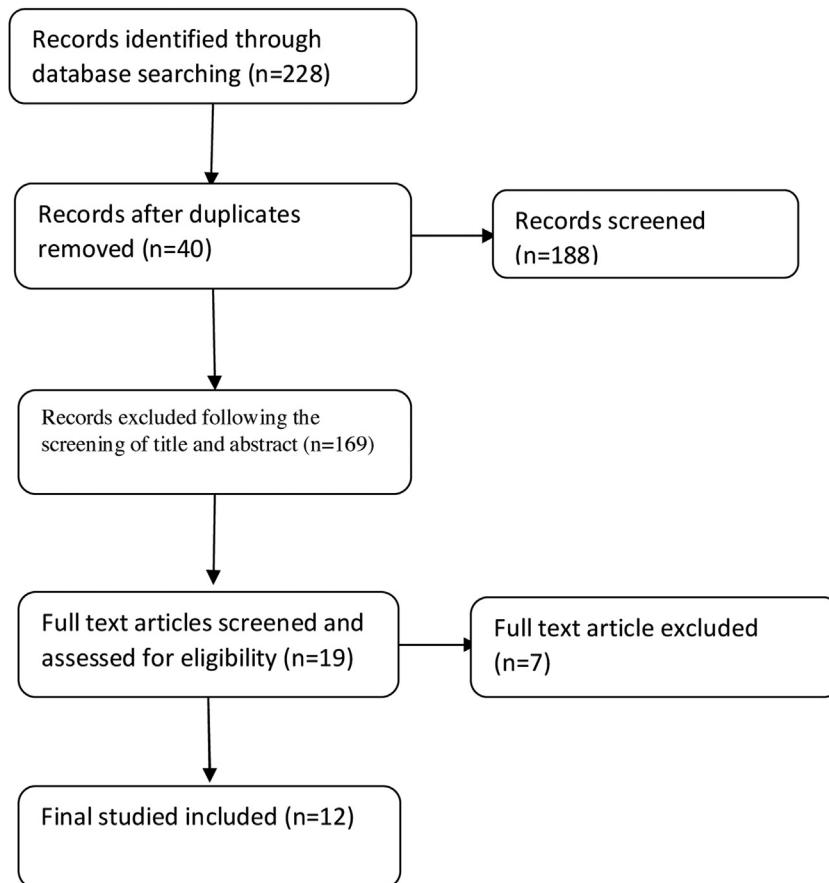


Figure 1. The process of selecting articles.

Nurse, Challenge, ethics, COVID 19. Boolean functions including AND and OR were also used in the search. The article was published in languages other than English were excluded. To fully comply with this integrative review's ethical aspects, a thorough review of the databases was implemented to include all eligible articles. Two researchers independently conducted quality assessments, and if necessary, the differences were resolved through discussion with a third researcher to avoid bias selection.

Search strings used in PubMed based on the MeSH keywords: (COVID-19 [MeSH Terms] AND Challenge [MeSH Terms] [All Fields]) AND ethics [MeSH Terms] OR coronavirus [MeSH Terms] AND pandemic [MeSH Terms] AND nurse [MeSH Terms]).

Of 228 extracted articles, 12 were eligible. Duplicate articles were excluded. The selection of articles continued with the reading of titles and abstracts. When in doubt about the inclusion or omission of any article, the article's full-text was read. Finally, the eligible articles were analyzed (Fig. 1). The selection process followed the PRISMA guidelines and recommendations for identification, selection, eligibility and inclusion [13].

Data analysis in an integrative review proceeds in a number of steps in order to sort, categorize and summarize data into a meaningful whole, facilitating the drawing of sound conclusions from the synthesis. In order to analyse the articles, evidence of the nurses' ethical challenges was highlighted and coded. Then, categories and subcategories

were formed. Finally, the results of the integrative review were interpreted and prepared for the report [8].

Results

In this study, 12 articles met the inclusion criteria. Table 1 shows the selected studies by title, year and country, type of study, the purpose of the study, and the results. The reviewed studies' main results were about three areas: nurses, patients with COVID-19 and their families, and inpatient wards' facilities and medical equipment. Ethical challenges for nurses were including the safety of nurses, colleagues and families, shortage of nurses, lack of concentration due to mental fatigue, life-threatening, a large number of patients, lack of definitive treatment, performing nursing procedures in dangerous situations, importance giving the system to protect the lives of nurses, the rules and regulations that cause contact between nurses and companions, and physical and psychological injuries and lack of protective equipment [14–25].

Ethical challenges centred on the patient and the family were the challenge of treatment decisions, family visits with the patient, patients' excessive anxiety and fear, research on patients and the risk of disclosing patients' identities, patients' expectations, family requests about their patients informing patients about death and other news related to the family, communicating with the patient from behind a

Table 1 Summary of analysis of selected studies.

Title	Authors/Years/Country	Type of study	Objective	Main results
COVID-19: ethical challenges for nurses	Morley et al./2020/United State	Explanatory	Investigating three pervasive ethical issues of nurses worldwide in relation to COVID-19 patients	Unique ethical issues that nurses face in relation to COVID-19 patients: the safety of nurses, patients, colleagues and families; Allocation of scarce resources; And changing the nature of nurses' relationships with patients and families
Ethical challenges of nurses in caring for people with COVID-19: a qualitative study	Jia et al./2020/China	Qualitative	Extracting Nurses' Ethical Challenges in Caring for COVID-19 Patients	The three main themes of the study are: ethical challenges, coping styles, and career implications
Ethical considerations of nurses in the COVID-19 pandemic	Wright et al./2020/Canada	Review	A Study of Ethical Considerations in the COVID-19 Pandemic	Important ethical points that nurses face in a pandemic: Moral distress: Feelings of anger, frustration, or guilt when nurses are unable to take care of their own moral judgment. Social Ethics: A place to work where people feel safe to hear them and where there is an alignment between publicly expressed values and lived reality. Moral authority: The ability to direct one's actions toward ethical goals, such as good outcomes for patients
COVID-19: ethical issues for nurses	McKenna/2020/Ireland	Editorial	Introducing ethical issues for nurses	The moral problems of the nurses were: lack of manpower, low morale, endangering the lives of patients, inability to observe the benevolent aspect of nurses towards patients due to existing problems
Challenging times: ethics, nursing and the COVID-19 pandemic	Turali et al./2020/Thailand	Perspective	Introducing challenging times for nurses during a pandemic	Nurses face ethical challenges at a time when they face a shortage of resources or personal protective equipment, a large number of patients, a shortage of staff, inadequate health systems, and supply chain breakdowns
Nurses' perception using their narratives in a natural setting to identify their understanding of ethical challenges in caring for patients with COVID-19	Rezaee et al/2020/Iran	Qualitative research	Evaluates the nurses' perception to identify their understanding of ethical challenges in caring for patients with COVID-19	The threats to professional values The absence of a holistic COVID-19 care approach
Student nurses' ethical views on responses to the severe acute respiratory syndrome outbreak	Kam et al/2020/Hongkong	A questionnaire survey	to examine the attitude of nursing students, should they be faced with severe acute respiratory syndrome patients during their future work	Sex difference in nursing students' attitude toward SARS care during pregnancy and influence of age in understanding ICU care for these patients
Nurses confronting the coronavirus: challenges met and lessons learned to date	Ulrich et al/2020/USA	Review	Discuss the physical, emotional, and moral stresses that nurses are experiencing in their day-to-day practice settings created by the novel coronavirus	Must recognize that although there were moral failures, there were many moral successes that reflect the integrity of individuals, teams and organizations
Ethical issues related to pandemic flu Planning and response	Rushton/2007/Albany	Review	Nurses ethical issues in pandemic influenza	All nurses will also have to reflect on the ethical issues related to their duty as nursing professionals in the face of a global crisis, such as a pandemic
Ethical dilemmas, perceived risk, and motivation among nurses during the COVID-19 pandemic	Sperling/2020/Haifa	Descriptive correlative study	Examined how Israeli nurses respond to ethical dilemmas and tension during the COVID-19 outbreak	While experiencing significant personal risk and emotional burden, nurses conveyed strong dedication to providing care, and did not regret working in the nursing profession, yet they did seek a supportive climate for their needs and ethical concerns
Ethical dilemmas due to the COVID-19 pandemic	Robert et al/2020/France	Review	Investigating Ethical Problems in the COVID 19 Pandemic	Nurses, despite being aware of the ethical considerations in the COVID 19 pandemic, face many ethical problems with patients and caregivers
Ethical conflict during COVID-19 pandemic: the case of Spanish and Italian intensive care units	Falco-Pegueroles/2020/Italia	Review	To identify factors underlying ethical conflict occurring during the current COVID-19 pandemic in the critical care setting	Understanding these five factors and recognizing the conflicts, they may create can help to focus our efforts on minimizing the impact of the ethical consequences of a crisis of this magnitude and on developing new plans and guidelines for future pandemics

mask and protective clothing, ensuring the patient's rights, researching patients, respecting the patient's dignity and behaviour, and anger and restlessness of families. It was about what happened to their patients [14,16–25].

Ethical challenges focused on medical facilities and equipment included coordination to address the shortage of medical equipment and facilities, stability in emergency decision making under pressure to allocate equipment, allocation of sufficient resources through supply units, disruption of supply chain equipment and personnel [9–25].

Discussion

As the study's results showed, nurses' ethical challenges in the COVID-19 pandemic revolve around three areas, nurses, patients and their families, and medical equipment and facilities. In the field of nurses, ethical challenges include the safety of nurses, colleagues and families, shortage of nurses, lack of concentration due to mental fatigue, life-threatening disease, a large number of patients, performing nursing actions in dangerous conditions, giving importance to the system nurses' survival was challenged, as well as physical and psychological injuries and a lack of protective equipment.

The results showed that nurses in normal conditions and intensive care units connected with critically ill patients face a shortage of human resources or equipment, and there are ethical challenges for nurses in this area. When the number of patients suddenly increases, the equipment and forces will no longer be responsive, new problems will arise, and the moral challenges will be much more significant. These conditions are much more visible in the COVID-19 pandemic [26].

Nurses' safety is one of the most critical aspects of the health systems, threatening them in the COVID-19 pandemic. Nurses take care of patients during the pandemic and cannot morally withdraw despite being aware of the potential dangers [26].

Besides, health systems must provide safety for nurses in preserving their lives in the COVID-19 pandemic. Maintaining human resources is necessary for the health system to provide services for more patients. The COVID-19 pandemic is associated with nurses' moral and psychological challenges. They must be prepared to meet the challenges and uncertainties. If nurses are infected with COVID-19, they will face moral challenges to transfer the disease to their family. Inadequate protective equipment against the disease exposes the nurses to risk [27].

Moreover, rules and regulations put nurses in conflict with the family of patients. The families expect to visit their loved ones, but the rules have not allowed a normal visiting. So, conflicts arise between nurses and the families of patients. The annoyed families do not understand the rules and endanger nurses and their lives at risk. Nurses face the problem of having companions with COVID-19 disease. When die, informing the family leads to conflict when patients died from COVID-19 [28].

The number of patients in need of intensive care is increasing. Nurses' moral problems also increase when they cannot offer all necessary care due to personnel shortages [29].

Nurses also use protective equipment for a long time to care for COVID-19 patients, which can cause scars on their faces. Wearing protective clothes for a long time increases the body's temperature, leading to intolerance and losing concentration on tasks. Burdens of work, increasing the work shifts and critically ill patients, and deaths, and how to overcome these burdens occupy the nurses' minds, which increases ethical challenges for nurses in this area [30].

Stressors and other factors in the intensive care unit cause fatigue in nurses who lose control of the existing conditions and face moral challenges [31].

Another result of the studies is a challenge for the patient and the family's axis. The patient and family challenges and moral issues are, including decision making, meeting families with patients, patients' excessive anxiety and fear, research on patients and the risk of disclosing patients' identities, patients' expectations, family requests for their patients, notification of death and other outcomes, communicating with the patient from behind a mask and protective clothing, ensuring the patient's rights, respecting the dignity and behaviour of the patient, families' irritability, insulting and distrusting to the treatment team, and the patient's conflicting demands and the family from their treatment team can cause these conditions.

The study results showed that caring for patients with secure dress poses an ethical challenge. The COVID-19 patients see nurses only behind masks, face shields, and gowns, making it difficult for communication. This requires empathetic communication and attention to patients' psychological concerns and needs. Besides, according to the hospital's conditions, families were not allowed to visit the patients. Emotional distress and physical problems aggravate in patients who do not have a visitor [32].

As there is no specific treatment or prevention for the COVID-19, another challenge arises for nurses. Researchers frequently visit the patients and their families for research purposes, in which conscious patients and the families of unconscious patients are concerned about the confidentiality of giving information. The risk of disclosing patients' identities and social stigma is important for some people, creating ethical challenges for nurses [33,34].

Patients' death is another challenge that nurses face when the patient's family is distressed. In some cases, there is even a conflict between the nurse and the family. The deaths of patients sadden nurses, and their colleagues' psychological support is also important to them. Among these problems, nurses face the moral challenge of behaving not to face moral problems [35].

Another challenge for nurses about patients' families is meeting families with a loved one who is critical in the intensive care unit. The visits are also very upsetting for families and nurses in intensive care. During the COVID-19 pandemic, the duration of visits is short. The distance between visits is long, and the emotional pressure on the family and the patient increases, which is a moral challenge for nurses [36].

Besides, disagreement between nurses and patients' families regarding patient care is an important source of nurses' moral distress [37].

Another result of the current study is on the equipment. This includes coordination problems to address the shortage of equipment and medical facilities, stability in emergency decision making under pressure to allocate equipment,

allocation of sufficient resources through supply units, disruption of the supply chain of equipment.

The equipment and facilities were not distributed equally in all regions of a country during the COVID-19 pandemic. Shortage of intensive care unit beds, staff, drugs, and equipment are the resource constraints in this epidemic. Following the increase in the number of patients in the COVID-19 pandemic, there are serious discussions about determining the criteria for allocating medical equipment in different countries. Nevertheless, in practice, nurses have to adjust the available equipment in the wards according to the patients' needs so that no problem arises [38–41]. Also, the decision to allocate resources for the patients is a big challenge for nurses, making it difficult for nurses to make decisions [42].

Countries are different in terms of medical facilities. In less developed countries, the number of patients with COVID-19 is high due to cultural and health issues. The facilities and equipment are lacking. The medical facilities have not equally distributed in all country regions based on the number of critically ill patients. This is a challenge that increases for medical staff, especially nurses who spend most of their time with the patients [43]. Besides, the pandemic COVID-19 has significant problems in the health supply chains in five dimensions, including drugs, personal protective equipment, medical equipment, medical facilities, and blood. Medical equipment shortages and a large number of patients influence the distribution cycle of equipment promptly. They have become a challenge for nurses in many countries [44].

Another study results also show that it is difficult to predict demand due to the changeability, prevalence, and spread of the Covid-19. However, equipment shortages are costly and have a limited capacity to replace and distribute them. Supplying and replacing them is a problem for all countries, and equipment shortages are a significant challenge for nurses [45].

Conclusions

COVID-19 Pandemic is a global challenge that infected and died many people in communities. Hospitals have been allocated many beds in intensive care units, but still are inadequate. Nurses are the largest group in the treatment team involved in this pandemic and face many ethical challenges with themselves, patients and families. Shortages of medical equipment have affected their activities for caring for the patients.

Governments and health care systems directly involved in this pandemic should provide adequate nurses and equipment to overcome the COVID-19 burdens. They have to provide suitable working conditions for front-line nurses not to face various challenges while working. Also, ensure the safety of nurses and other healthcare staff at Pandemic COVID-19 is on-demand. Hospital administrators should respect and understand the nursing staff participating in the COVID-19 pandemic and provide them with more supportive care.

Strengths and limitations

One of the strengths of this review study is that it was performed during the COVID-19 pandemic, which can help nurses. In addition, selected studies are from countries with high patient rates, and the results are objective. One of the weaknesses of this study is the use of review studies and a letter to the editor. Because it has no research aspect, and their results are not the views of research examples. It conveys the opinions of the authors. But overall, their results can be informative for managers.

Funding

None.

Author contributions

All authors attest that they meet the current International Committee of Medical Journal Editors (ICMJE) criteria for Authorship.

Disclosure of interest

The authors declare that they have no competing interest.

References

- [1] Coronavirus Resource Center, Johns Hopkins University; 2020 [Available from: <https://coronavirus.jhu.edu/>].
- [2] World Health Organization. State of the World's Nursing 2020: Investing in Education, Jobs and Leadership. Geneva: WHO; 2020 [Available from: <https://www.who.int/publications-detail/nursing-report-2020>].
- [3] Erdem H, Lucey DR. Health care worker infections and deaths due to covid-9: a survey from 37 nations and a call for WHO to post national data on their website. *Int J Infectious Dis* 2021;102:239–41, <http://dx.doi.org/10.1016/j.ijid.2020.10.064>.
- [4] Correia Araujo E, Garcia-Meza A. World Health Day: The nursing workforce is critical to COVID-19 (coronavirus) and global health; 2020 [Available from: <https://blogs.worldbank.org/health/world-health-day-nursing-workforce-critical-covid-19-coronavirus-and-global-health>].
- [5] Chang D, Xu H, Rebaza A, Sharma L, Cruz CS. Protecting health-care workers from subclinical coronavirus infection. *Lancet Respir Med* 2020;8:e13.
- [6] Chenneville T, Schwartz-Mette R. Ethical considerations for psychologists in the time of COVID-19. *Am Psychol* 2020;75:644–54.
- [7] Madigan S, Racine N, Cooke JE, Korczak DJ. COVID-19 and mental health: benefits, challenges, and future directions. *Can Psychol* 2020;63:569–83.
- [8] Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, et al. The experiences of healthcare providers during the Covid-19 crisis in China: a qualitative study. *Lancet Glob Health* 2020;8:e790–8.
- [9] Sabatello M, Burke TB, McDonald KE, Appelbaum PS. Disability, ethics, and health care in the covid-19 pandemic. *Am J Public Health* 2020;110:1523–7.
- [10] Bagnasco A, Zanini M, Dasso N, Rossi S, Timmins F, Galanti MC, et al. Dignity, privacy, respect and choice — A scoping review

- of measurement of these concepts within acute healthcare practice. *J Clin Nurs* 2020;29:1832–57.
- [11] Miech EJ, Rattray NA, Flanagan ME, Damschroder L, Schmid AA, Damush TM. Inside help: an integrative review of champions in healthcare-related implementation. *SAGE Open Med* 2018;6 [2050312118773261].
- [12] Ganong LH. Integrative reviews of nursing research. *Res Nurs Health* 1987;10:1–11.
- [13] Silva KR, Souza FG, Roquete FF, Faria SMC, Peixoto BCF, Vieira A. Allocation of resources for health care in COVID-19 pandemic times: integrative review. *Rev Bras Enferm* 2020;73:e20200244, <http://dx.doi.org/10.1590/0034-7167-2020-0244>.
- [14] Morley G, Grady C, McCarthy J, Ulrich CM. Covid-19: Ethical challenges for nurses. *Hastings Cent Rep* 2020;50:35–9.
- [15] Jia Y, Chen O, Xiao Z, Xiao J, Bian J, Jia H. Nurses' ethical challenges caring for people with COVID-19: a qualitative study. *Nurs Ethics* 2021;28:33–45.
- [16] Wright DK, Peterson W, Gifford W. Nurses' Ethical Considerations during a Pandemic; 2020 [available from: <https://cna-aiic.ca/-/media/cna/covid-19/nurses-ethical-considerations-during-a-pandemic.e.pdf>].
- [17] McKenna H. Covid-19: Ethical issues for nurses. *Int J Nurs Stud* 2020;110:103673.
- [18] Turale S, Meechanan C, Kunaviktikul W. Challenging times: ethics, nursing and the COVID-19 pandemic. *Int Nurs Rev* 2020;67:164–7.
- [19] Rezaee N, Mardani-Hamoleh M, Seraji M. Nurses' perception of ethical challenges in caring for patients with COVID-19: a qualitative analysis. *J Med Ethics Hist Med* 2020;13:23.
- [20] Kam JK, Chan E, Lee A, Wei VW, Kwok KO, Lui D, et al. Student nurses' ethical views on responses to the severe acute respiratory syndrome outbreak. *Nurs Ethics* 2020;27: 924–34.
- [21] Ulrich CM, Rushton CH, Grady C. Nurses confronting the coronavirus: challenges met and lessons learned to date. *Nurs Outlook* 2020;68:838–44.
- [22] Payne K. Ethical issues related to pandemic flu planning and response. *AACN Adv Crit Care* 2007;18:356–60.
- [23] Sperling D. Ethical dilemmas, perceived risk, and motivation among nurses during the COVID-19 pandemic. *Nurs Ethics* 2021;28:9–22, <http://dx.doi.org/10.1177/0969733020956376>.
- [24] Robert R, Kentish-Barnes N, Boyer A, Laurent A, Azoulay E, Reignier J. Ethical dilemmas due to the Covid-19 pandemic. *Ann Intensive Care* 2020;10:1–9.
- [25] Falcó-Pegueroles A, Zuriguel-Pérez E, Via-Clavero G, Bosch-Alcaraz A, Bonetti L. Ethical conflict during COVID-19 pandemic: the case of Spanish and Italian intensive care units. *Int Nurs Rev* 2020;1–8, <http://dx.doi.org/10.1111/inr.12645>.
- [26] Sirghani M. Human Rights, AIDS and Public Health. *J Med Law* 2009;2:85–104.
- [27] Yin X, Zeng L. A study on the psychological needs of nurses caring for patients with coronavirus disease 2019 from the perspective of the existence, relatedness, and growth theory. *Int J Nurs Sci* 2020;7:157–60.
- [28] New patterns of violence against healthcare in the covid-19 pandemic; 2020 [available from: <https://blogs.bmjjournals.com/bmjj/2020/05/15/new-patterns-of-violence-against-healthcare-in-the-covid-19-pandemic/>].
- [29] Johns Hopkins University. Nurses Face 'Unprecedented Challenges' During COVID-19; 2020 [Available from: <https://www.futurity.org/nurses-covid-19-2329212-2/>].
- [30] Ulrich CM, Rushton CH, Grady C. Nurses confronting the coronavirus: challenges met and lessons learned to date. *Nurs Outlook* 2020;68:838–44.
- [31] Ecarnot F, Quenot JP, Besch G, Piton G. Ethical challenges involved in obtaining consent for research from patients hospitalized in the intensive care unit. *Ann Transl Med* 2017;5:s41.
- [32] Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease epidemic among the general population in China. *Int J Environ Res Public Health* 2020;17:1729.
- [33] Ben-Pazi H, Beni-Adani L, Lamdan R. Accelerating telemedicine for cerebral palsy during the covid-19 pandemic and beyond. *Front Neurol* 2020;11:746.
- [34] Townsend E, Nielsen E, Allister R, Cassidy SA. Key ethical questions for research during the COVID-19 pandemic. *Lancet Psych* 2020;7:381–3.
- [35] Hart JL, Turnbull AE, Oppenheim IM, Courtright KR. Family-centered care during the COVID-19 Era. *J Pain Symptom Manage* 2020;60:e93–7.
- [36] Robert R, Kentish-Barnes N, Boyer A, Laurent A, Azoulay E, Reignier J. Ethical dilemmas due to the Covid-19 pandemic. *Ann Intensive Care* 2020;10:1–9.
- [37] McAndrew NS, Leske J, Schroeter K. Moral distress in critical care nursing: the state of the science. *Nurs Ethics* 2018;25:552–70.
- [38] Emanuel EJ, Persad G, Upshur R, Thome B, Parker M, Glickman A, et al. Fair allocation of scarce medical resources in the time of Covid-19. *N Engl J Med* 2020;382:2049–55.
- [39] Rosenbaum L. Facing COVID-19 in Italy — ethics, logistics, and therapeutics on the epidemic's front line. *N Engl J Med* 2020;382:1873–5.
- [40] Truog RD, Mitchell C, Daley GQ. The toughest triage — allocating ventilators in a pandemic. *N Engl J Med* 2020;382:1973–5.
- [41] White DB, Lo B. A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. *JAMA* 2020;323:1773–4.
- [42] Mathur R. Ethics preparedness for infectious disease outbreaks research in India: a case for novel coronavirus disease 2019. *Indian J Med Res* 2020;151:124.
- [43] Khalid A, Ali S. COVID-19 and its challenges for the healthcare system in Pakistan. *Asian Bioeth Rev* 2020;12:551–64.
- [44] Mirchandani P. Health care supply chains: covid-19 challenges and pressing actions. *Ann Intern Med* 2020;174:300–1.
- [45] Baldwin W. Ventilator maker: we can ramp up production fivefold; 2020 [Available from: <https://www.forbes.com/sites/baldwin/2020/03/14/ventilator-maker-we-can-ramp-up-production-five-fold/#10246ae65e9a>].