Health Professionals Dynamic Role Amid COVID-19: Nursing Perspectives

Pushpamala Ramaiah1*, Nahla A. Tayyib1, Fatmah J. Alsolami1, Grace M. Lindsay1 and Hayam I. Asfour1,2

1Faculty of Nursing, Umm Al-Qura University, Mecca, Saudi Arabia.
2Faculty of Nursing, Alexandria University, Alexandria, Egypt.

Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2020/v32i2230776

Received 02 July 2020
Accepted 09 September 2020
Published 17 September 2020

ABSTRACT

A novel coronavirus (COVID-19) is a newly discovered virus in 2019 in Wuhan, China. Globally around the world, healthcare professionals (HCP), including nurses, are the frontline health workers (FHW), considered as a vital member of the team trying to save several people’s lives. Although leading health organizations and scientific papers consistently addressed the HCP challenging role concerning multidisciplinary approaches and support systems, along with evidence-based research implications for delivering the best possible quality care, this review resulted in four primary categories, such as challenges, domains, support systems (code of ethics), and evidence-based synthesis of health policy. A step further, this article will detail the tremendous role of brave healthcare workers, including nurses and pharmacists who proved themselves as health warriors, along with the key issues about the nurses’ perspectives on the impact of COVID-19.

*Corresponding author: E-mail: aravindanadar@gmail.com;
1. INTRODUCTION

A novel coronavirus (COVID-19) is a newly discovered virus in 2019, in Wuhan, China [1]. It is widely spreading over the entire world and the United States of America as of the high rate of an outbreak [2]. Furthermore, acute respiratory disease caused by COVID-19 increased the mortality rate of individuals above 60 years and those with conditions such as cancer, including chronic respiratory disease, diabetes, and cardiovascular disorders [1]. Nurses have a crucial role in attaining the healthcare industry's goal by being critical connections in the system of healthcare delivery. Nurses function begin from rendering not only the specialized care but also involved in coordinating the other health professionals in order to meet the goals of the patients. The World Health Organization declared to dedicate May 2020 to nurses and midwives to parallax with the birth anniversary of Florence Nightingale's birth anniversary, because the response to the crisis has reached a way beyond the core aim of 2020 as Nurses and Midwives International Year. The effort put in by the nurses globally during the pandemic crisis is excellent, powerful, and practical testimony of prospects that every nurse possesses to communicate considerable challenges in the health care industry, which the theme of nurses day this year to attain [3]. It is necessary to recognize and support the health care professionals instrumental, competitive, and the expanded role amid such a pandemic crisis.

Even though extrapolating pieces of information have mounted about the impact of COVID-19 on vulnerable groups with comorbid conditions, it is poorly understood the multiplex qualities of frontline health workers (FHW) and their consistent concerns about long working hours, shortage of healthcare workers, moral injuries, and their psychosocial considerations. Though HCW shared their psychological feelings, it is still not positively nurtured. Hence this paper has taken the initiative to give recognition to FHW, who have a deep sense of wanting to deliver quality care during a pandemic situation.

19, and to debunk the mixed messages what is being reported every day is a virtual drive for nurses focusing on the significant domains of nursing practices as a motivating factor amid COVID-19.

Keywords: Domains; challenges; therapeutic relationship; evidence-based synthesis; multidisciplinary team.

2. BACKGROUND

Worldwide Pandemic Coronavirus Disease (COVID-19) is caused by severe acute respiratory SARS-CoV-2, reported first in Wuhan, China, in December 2019. The report Johns Hopkins CSSE [4] as of 27-07-2020, there were globally above 16,540,137 confirmed documented cases. COVID-19 represents the great acute global health disaster in any health care settings, where some patients have severe debilitating conditions; some it is mostly respiratory-related signs and symptoms, while the rest of them barely feel ill, if at all. At the same time, others have nervous system-related illnesses such as loss of smell, a symptom documented between 20-80% of the infected COVID-19 patient. Nevertheless, every piece of information the day that comes up, pneumonia is killing more people by at least 80-90 % than COVID-19 [5].

The most common symptom of patients infected with COVID-19 is the upper respiratory tract infection, dry cough, and tiredness, along with the less common symptom of sore throat, diarrhea, headache, conjunctivitis, a rash on the skin, loss of taste or smell, and discoloration of fingers and nails. There are severe symptoms such as shortness of breath, chest pain, and loss of speech or movement [6] —some developed fatal consequences, including septic shock, acute respiratory distress syndrome, and severe pulmonary edema [7]. Some patients suffer from further fatal complications, including sepsis, septic shock, pulmonary edema, severe pneumonia, and acute respiratory distress syndrome. Several epidemiology and virology studies demonstrated that viruses transmitted from infected people to others in close direct contact through the people of infected cases or by with the objects and surface contamination [8]. It documented that the shedding of the infection is predominantly in the upper respiratory tract (URTI) during the early course of infection [9,10]; also similar reports shared by World health organization global networks (WHO, Situation report, 2020). That URTI happens in the initial three days, and later case definitions
show presumably in the lower respiratory tract [1]. However, cases outside the epicenter of the epidemic might vary in their clinical characteristics [11,12]. Studies are also racing to debunk the puzzle of transmission from asymptomatic cases that might massively spread the disease.

3. CHALLENGES FOR NURSES DURING COVID-19

There is no wonder agreeing on the verses, "Nurses are the most robust backbone of the global healthcare system, and mostly its heart and soul." Nurses wrestle with quite massive challenges posed by COVID-19. The pandemic crisis created a concern in the whole healthcare industry that COVID-19 stress might become a long-term consequence [13]. Indeed there is an ethical concern about inadequate protection during the battle against COVID-19 that raised a question primarily on working hours. Though many nurses' conditions mainly made them vulnerable to COVID-19, nurses are trying to retain the balance between their interdependent responsibility of personal and professional commitments [14].

The traditional motivation of community thinking of nurses and the nursing history ethics have a predominant root in social-justice-oriented issues of disenfranchisement, equity, and the structural forms of oppression [15]. However, there is an argument deemed to exist that moral disturbance is the reciprocity to the constraints encountered by nurses to righteous identity, responsibilities, and relationships [16]. Nevertheless, several quantitative types of research revealed how nurses treating COVID-19 patients deemed to develop mental health risks, such as depression, lack of sleep, stress, and anxiety. Frontline healthcare providers tend to experience added stressful situations while they happen to work in a new environment [17].

While healthcare frontline professionals, including nurses, encounter underlying concerns about their health and well-being, the relational professional and ethical context need a balance to address their obligations of beneficence and duty to care with rights to care for the patients infected with COVID-19. Nursing in these unique atmosphere demands a nurse disproportionate amount of high-level of altruism and self-sacrifice that should ever be saluted.

4. APPROACHES TO DOMAINS OF HEALTH CARE

The global healthcare system suffers from far-reaching unresolved consequences that threaten the lives, economy, and makes care unpredictable to sick people [18]. The most critical challenge concerning clinical, patient-focused outcomes and healthcare professionals' involvement in the initial stages of the process of any crisis requires unique strategies and approaches in quality improvement in the concerned field [19].

4.1 Comprehensive Approach

COVID-19 posed a significant challenge to the system that necessitates the need for comprehensive and vital management strategies during the outbreak, especially in treating critically ill patients. In considering the unknown disease and unprecedented consequences, the organizations need to provide multiple training, relevant education, and appropriate communication on how health care personnel can provide comprehensive care to the disadvantaged population [20]. Researchers identified the comprehensive health care pioneering model of services that encompass continuously, shared, and seamless care, along with the organizing principle of an evidence-based approach [21]. Beheji and Buhaid [22] reminisced that nurses are the pioneers and dedicated professionals in revamping the best possible practices in meeting out the quality patient management and clinical safety. The study also reminds us "Nurses has an extraordinary position as a secured hook who integrate multi-professional team and communities across various sectors to manage and mitigate risks by ensuring appropriate communications as of COVID-19."

In this context, a video consultation including the branch of telemedicine, telehealth approach promoted and scaled up recently to minimize the transmission risk, especially in UK and the USA. It was evident that the telemedicine was implemented in 2015 during the outbreak, later updated framework mitigated during COVID-19. The aim of this framework included implementing a large scale to promote national public health outcomes. However, in most countries find struggles to implement it due to a lack of regulatory authorities in integrating these services during emergency and outbreak situations. Some nations have overcome the
challenges in adhering to telehealth to fight against crises during a pandemic. Telehealth, as a critical tool, helps in easing the burden of FHW by motivating the public with mild or moderate signs and symptoms to receive care through online or phone calls [23,24].

4.2 A Shift in Therapeutic Relationship

There is a shift in traditional paradigm rapport that happened the way nurses care for COVID-19 patients. Nurses face tremendous barriers in maintaining the nurse-patient relationship during this pandemic situation [25]. Two categories of personal and professional challenges for both clients and therapists lead shared traumatic reality, being exposed to collective threats or disasters [26]. The WHO as of April 2020 [27], in the State of the World's Nursing Report, urged the governments and all stakeholders to react to the developing and advancing technologies and models of health and social integrated care, and the policies in considering the issues known to affect the nurses' retention in the healthcare settings, which can leverage perspective arising from digital health technology.

The most beneficial nurse-patient interaction is required for both nurses and patients, which usually starts on patient admission to the hospital. Currently, visiting restrictions made nurses adhere to the social distancing guidelines strictly. In such cases, masks, gowns, and gloves prevent the infected person from viewing health care providers, which creates a substantial challenge to efficient communication [25]. Despite the direct and indirect challenges of psychosocial ramification, nurses are consistently rendering holistic care to the needy population in the hospital, community, and care homes.

4.3 Multidisciplinary Health Care Team Effort

Healthcare providers, including nurses, faced unprecedented stress and lacked self-confidence in caring for patients with this new coronavirus disease. Even though it is well understood concerning the risk of the COVID-19 pandemic outbreak, transmission, genetic mutation and pathogenicity, and treatment of illness, health professionals or the healthcare team members join together to combat pandemic situation from several specialties and different hospitals, there might be the existence of differences in cultures, communication, and procedures while delivering health care. A recent qualitative study captured nurses' perceptions of working with the new multidisciplinary team in a different setting with various protocols [26]. Surprisingly pharmacist and nurses are the primary service providers working at the frontline during the COVID-19 response, to provide quality, respectful treatment and efficient care that would also act as a community dialogue agent to address questions about stress, anxiety, and in some situations, collecting data for clinical researches too.

The global nursing workforce is calculated at 27.9 million, of which 19.3 million are professional nurses. However, the world does not have a global workforce for nursing professionals commensurate with the comprehensive health coverage and Sustainable Development Goal (SDG) earmark [27]. Clinical nurses, while working in the team in the health institutions, are more vulnerable to a higher level of risk of infection but also mental health issues [28]. The term “Resilience” is a vital factor in coping and functioning in such crisis times; however, others caution that characteristics could be viewed narrowly as an individual's responsibility where in reality, it is organizational responsibility [29].

4.3.1 Training program

Numerous educational campaigns deliver updated knowledge about coronaviruses, including the protocol on staff morale and patients' safety for health care workers of all disciplines to regulate quality and satisfied services for the community. Further, the effectiveness of dissemination of knowledge related to COVID-19 has also been studied by researchers to shed light on proving the accessibility and impact to training programs. However, the existing gap with limited knowledge about emerging infectious disease and infection control practices significantly exists and positively correlates to the insufficient knowledge transfer due to less number of experience and young age [30]. Alsahafi et al. [31] also acknowledged that sub-optimal knowledge was found among HCW and recommended the dire necessity of further training and education primarily of personal protective equipment, controlling infections by appropriate measures, and isolation techniques.

Although exceptional efforts have been made to prohibit the barriers in exchange of information, studies moved to shed lights on recognizing the
hinder factors and demonstrated the associated factors such as lack of compliance with articulating the required details, personal opposition, inefficient communication technology quality, cultural and language barriers, expertise deficiency, lack of interest due to work atmosphere, incentives, and organizational factors [32]. If staff is stressed and struggling psychologically through lack of resources or ethical and emotional challenges as in COVID-19, nurses can feel it is their "fault" because they have not been "resilient enough." So caution should be applied in the interpretation of factors related to so-called 'resilience.'

Even though several institutions implement strategies to develop nurses’ knowledge and skill, it needs to be monitored routinely and evaluated for better coordination within the team of healthcare, including specialists, physicians, and health care assistants. Comprehensive concerted efforts for the safety of nurses by regular and consistent training is essential to empower critical managing incidents with appropriate preparedness.

5. SUPPORT SYSTEM AND PROFESSIONAL OBLIGATION

COVID-19 outbreak severely compromised the well-being of the health services community and the nurses in terms of the psychosocial impact of huge workload, need for their safety, and anxiety, and the fear about their family. There is mounting evidence by researchers all over the world on the poor outcome of a lack of support system. A recent study documented a high-level psychosocial morbidity that is associated with nurses' emotional turmoil with frustration due to fear of either having an infected family member or worried about infecting their family members [33,34]. Another cross-sectional large-scale descriptive study anecdotally reported that during this COVID-19 outbreak, nurses might be exposed to long-term consequences with high risk than others in the team [35].

However, nurses are quite challenging to continue their service, as they feel holistic care is incredibly important to embrace the ethical and professional obligation to their profession [36]. A survey among nurses working in ICU demonstrated the underlying causes of psychosomatic illness such as less appetite or improper digestion of food, sleeping difficulties, crying spells, and even suicidal intention. Most importantly, nurses who do not have adequate training and experience of caring for patients admitted at an intensive care unit pose a more significant mental crisis [37]. Several challenges become more evident as the health crisis of COVID-19 gets unfolded. A solid record is available globally about the concerns of nurses concerning acquiring theoretical knowledge and competence in practical skills, which are the two different sides of the coin as an indicator. One of those challenges in the current scenario is, although nurses expressed interest in having the training, they have practical difficulties to detach themselves from the busy wards during a crisis. They are stressed about attending it, added to regular shift with extended hours decrease the number of HCW participating in a session [38]. Historically professional nurses deliver empathetic, efficient care to catastrophe response, though the nature of their work puts them on risk. Nurses are apprehensive concerning ethical, legal, and professional protection while caring for patients in the COVID-19 pandemic crisis. Nurses are equally obligated to the patient and to the self [39] (American Nurses Association Code of Ethics Provision 2&5), which is more likely to be a conflicting statement. Moreover, nurses consistently care critically ill under extreme circumstances, including lack of or insufficient resources and uncontained contagion. They need to be embraced in this heart-wrenching resolution by the systems in which they deliver needed care and by society (ANA, 2020).

Also, the guidance provided by the Code of Ethics (ANA.2015) in the situation of crisis for nurses states that nurses must decide how much the care can be delivered with high quality? There might be choices based on moral grounds, to perpetuate professional integrity. Consequently, healthcare institutions, administrators, managers, and health professionals must recognize employers' and employees' expectations.

6. RESEARCH: EVIDENCE-BASED PRACTICE (EBP)

Even in a well-staffed facility with a professional, supportive environment, the unprecedented nature of COVID-19 aspects makes confrontation with healthcare providers with high risk and strains of emotion. Such strain and risk cause the nurses to undergo ethical dilemmas whose desires to meet up their professional obligation of ethical practice might establish a conflict with
priorities and personal values. The emotional strain complicates the ethical strain. Amid deep strain, nursing research could suggest the proper evidence-based supportive messages related to having a positive ethical environment and the better support from an institution to manage ethical issues that are the crucial elements to overcome ethical dilemmas [40].

The evidence-based solution to the confronting challenges is the appropriate platform to during the period of enormous upheaval, strain, and risk. Nevertheless, national policy guidelines and preparedness at the level of the institution take a role as a complementary approach that would deliver empirical support through nursing researches [41]. The professional experiences, strategies, and institutional policies concerning confrontation, exploration, and management of pandemic crises are essential to all health professionals and nurses in managing an outbreak of any infectious diseases [38].

In addition to basic scientific clinical research performing studies on infection-transmission-prevention, addressing the crucial issues about the physical and psychological experiences of supporting the victims is a mandatory paradigm of the crisis period [42]. Besides, the pandemic disease requires exploration of the cultural diversity on the perception, and prevention of COVID-19 will be a significant aspect of the transmission and management of COVID-19 [43,44].

Interrupted services of (EBP) in collecting data have been modulated with an alternative protocol that could enhance the efficacy and safety assessment, includes a system of central data monitoring, digital technology methods, home care, and central lab. Even in a pandemic outbreak, HCW holds a primary role as a team to implement and assess the site to retain participants of ongoing clinical trials and to promote the clinical outcome [45].

Nevertheless, the pharmacist also had been exposed to the negative impact on their psychological well being that is predominantly detrimental. Unfortunately, in many nations, FHW, including nurses and pharmacist, are overlooked and unrecognized. Finally, the resulting increased physical and mental exhaustion among FHW will drive them burnout that would compromise the quality of care [46]. The underlying literature reveals that the HCW is woken up in a different atmosphere, with a diverse set of norms both at home and hospital settings. The necessity for health professionals has never been more outstanding, while the world is contemplating the ramifications of the current rapidly moving crisis due to COVID-19. The strong take-home message derived here is that the challenging role of healthcare professionals (HP) is mandatory to sustain ever-evolving challenges that are essential during an unprecedented crisis [47]. Hence it is inevitable to remind ourselves of their values that the HCP takes drastic interventions and succumb to feasible acceptable plans to ensure safety that also employs alongside consciousness of provision of health services for better health measures, treatment, prognosis, and outcome, in times of the crisis COVID-19 pandemic.

Alongside globally, the pharmaceutical sector undergoes numerous long and short term impacts associated with the health market that needs to be identified and analyzed to overcome the crucial challenges, especially in developing countries with a lack of healthcare resources [48].

7. CONCLUSIONS

Globally, COVID-19 highlights the significant role of HCW, including nurses, in healthcare prevention and promotion. Even though nurses are aware of the challenges posed due to the pandemic crisis of COVID-19, nurses continue demonstrating and delivering high standard quality care. However, long term exposure to the psychosocial associated stress-inducing environment would develop physical and mental crises that need to be explored, especially in a pandemic situation in order to draw the meticulous attention of the administrators, to sustain competent practices while caring patients of an unprecedented panic that will eventually relieve the psychological impact on nurses.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.
REFERENCES

1. WHO. Situation report. Coronavirus disease. World Health Organization. 2020; 73(2).
2. Lone bear DR, Barcel NE, Akee R, Carroll SR. American Indian reservations and COVID-19: Correlates of early infection rates in the pandemic. 2020;26(4):371-377.
3. Sharma B. Role of nursing in COVID-19 management, health care radius; 2020. Available:https://www.healthcareradius.in/clinical/26006-role-of-nursing-in-covid-19-management
4. John Hopkins University and Medicine. Coronavirus resource center; 2020.
5. Science News; 2020. Available:https://www.sciencenews.org/article/covid-19-coronavirus-sense-smell-brain-nerve-cells
6. Cascella M, Rajnik M, Cuomo A, Rafaella D, Napoli D. Features, evaluation, and treatment coronavirus. Statpearls; 2020.
7. Shu-Ching C, Yeur-Hur L, Siow TH, Ng OT, Wong MS, et al. Surface environmental, personal, protective equipment contamination by severe acute respiratory syndrome COVID-19-2 from a symptomatic patient. JAMA. 2020; 323(16):1610-1612.
8. Wang W, Xu Y, Ruqin G, et al. Detection of SARS-CoV-2 in different types of clinical specimens. JAMA. 2020;3786.
9. Lauer SA, Grantz KH, Bi Q, et al. The incubation period of coronavirus disease. 2019 From Publicly reported Confirmed Cases: Estimation and Application, Ann Intern Med; 2020.
10. Tayyib NA, Ramaiah P, Alsolami FJ, Alshemri MS. Immunomodulatory effects of zinc as a supportive strategy for COVID-19. J Pharm Res Int. 2020;32(13):14-22.
11. Woelfel R, Corman V, Guggemos W, et al. Virological assessment of hospitalized cases of coronavirus disease; 2019.
12. Futurity. Nurses face unprecedented challenges during COVID-19; 2020. Available:https://www.futurity.org/nurses-covid-19-2329212-2/
13. Morley G, Grady C, McCartney J, Ulrich CM. COVID-19: Ethical challenges for nurses. Wiley Online Library; 2020.
14. Fowler M. Heritage ethics: Toward a thicker account of nursing ethics. Nursing Ethics. 2016;1:7-21.
15. Peter E, Liaschenko J. Moral distress reexamined: A feminist interpretation of nurses’ identities, relationships, and responsibilities. J Bioeth Inq. 2013;10(3): 337-45.
16. Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, et al. The experience of healthcare providers during the COVID-19 crisis in China: A qualitative study. Lancet Glob Health. 2020;8:790-98.
17. Andel C, Davidow SL, Hollander M, Moreno DA. The economics of health care quality and medical errors. J Health Care Finance. 2012;39(1):39-50.
18. Rozenblum R, Lisby M, Hockey PM, Levitzion-Korach O, Salzberg CA, Efrati N, et al. The patient satisfaction chasm: The gap between hospital management and frontline clinicians. BMJ Quality and Safety. 2013;22(3):242-50.
19. Speroni KG, Seibert DJ, Mallinson RK. Nurses perception of ebola care in the United States. A qualitative analysis. J Nurs Adm. 2015;45:544-50.
20. Stroetmann KA, Kubitschke L, Robinson S, Stroetmann V, Cullen K, McDaid D. How can telehealth help in the provision of integrated care? Health system and policy analysis. Presidencia Espanola; 2010.
21. Beheji M, Buhaid N. Nursing Human Factor During COVID-19 Pandemic. Int J Nurs Scie. 2020;10(1):12-24.
22. Portnoy J, Waller M, Elliot T. Telemedicine in the Era of COVID-19. J Allergy Clin Immunol Pract. 2020;895:1489-1491.
23. Smith AC, Thomas E, Snoswell CL, Haydon M, Mehrrot A, Clemmensen J, et al. Telehealth for global emergencies: Implications for coronavirus disease, Telemed Telecare. 2020;26(5):309-313.
24. Liaschenko J. Moral distress reexamined: A feminist interpretation of nurses’ identities, relationships, and responsibilities. J Bioeth Inq. 2013;10(3): 337-45.
25. ITU News. Covid-19: How Tech is helping nurses?; 2020.
26. Thompson DR, Lopez V, Lee D, Twinn S. SARS- A perspective from a school of
nursing in Hong Kong, J Clin Nurs. 2004; 13:131-135.

29. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by health care workers during the COVID-19 Pandemic, BMJ. 2020;368:121.

30. Aldohyan M, Al-Rawashdeh N, Sakr FM, Rahman S, Alfarhan AI. The perceived effectiveness of MERS-CoV educational programs and knowledge transfer among primary healthcare workers: A cross-sectional study, BMC Infec Diseases. 2020;19(1):273.

31. Alsaifi AJ, Cheng AC. Knowledge, attitudes, and behaviors of healthcare workers in the kingdom of Saudi Arabia to MERS coronavirus and other emerging infectious diseases, Int Environ Res Public Health. 2020;13:1214.

32. D'Ortenzio C, Uo C. Understanding change and change management processes: a case study. Australia, University of Canberra; 2012.

33. Khalid I, Khalid T, Qabajah MR, Barnard AG, Qushmaq IA. Health care workers' emotions perceived stressors and coping strategies during a MERS-CoV outbreak. Clin Med Res. 2016;14(1):7-14.

34. Ramaiah P, Mohammed AS, Albokhary AA. Integrative healthcare shift benefits and challenges among healthcare professionals. Int J Trend Res. 2020;2(4):425-428.

35. Deying H, Kong Y, Li W, Han Q, Zhang Z, Zhu LX, et al. Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during COVID-19 outbreak in China Wuhan. A large scale-cross-sectional study. E Clin Med. 2020;2.

36. Lee SH, Juang YY, Su YJ, Lee HL, Lin YH, Chao CC. Facing SARS: Psychological impacts on SARS team nurses and psychiatric services in a Taiwan general hospital, Gen Hosp Psychiatry. 2005; 27(5):352-8.

37. Zen Z, Zou X, Zhong X, Yan J, Li L. Psychological stress of ICU nurses in the time of COVID-19, Crit Care. 2020;24:200.

38. Kaiblingen A, Hietapakka L, Heponiemi T. Increasing cultural awareness: Qualitative study of nurses' perception about cultural competence training, BMC Nurs. 2019; 18:38.

39. ANA. Nurses, ethics, and the response to COVID-19 pandemic. American Nurses Association; 2020.

40. Ulrich C, O'Donnell P, Taylor C, Farrar A, Danis M, Grady C. Ethical climate, ethics stress and the job satisfaction of nurses social workers in the united states, Social Scie Med. 2007;65(8):1708-1719.

41. Chae D. Experience of migrant care and needs for cultural competence training among public health workers in Korea. Public Health Nurs. 2018;35(3):211-9.

42. Shu-Ching C, Year-Hur L, Siow-Luan T. Nursing perspectives on the impact of COVID-19. J Nurs Res. 2020;28(3):85.

43. Xing J, Sun N, Xu J, et al. Study of the mental health status of medical personnel dealing with new coronavirus pneumonia. Med Rexiv; 2020.

44. Year-Hur L, Siow-Luan T. Nursing Perspectives on the impact of COVID-19. J Nurs Res. 2020;28(3):85.

45. Fleming TR, Labriola D, Wittes J. Conducting clinical research during the COVID-19 pandemic: Protecting scientific integrity. JAMA. 2020;324(1):33-34.

46. Elbeddini A, Wen CX, Tayefehchamani Y, Anthony T. Mental health issues impacting pharmacists during COVID-19. J of Pharm Policy and Pract. 2020;13(46).

47. Jackson D, Bradbury-Jones C, Baptiste D, Gelling L, Morin K, Neville S, Smith GD. Life in the pandemic: Some reflections on the nursing in the context of COVID-19. J Clin Nurs. 2020;2041-2043.

48. Ayati N, Saiyarsarai P, Nikfar S. Short and long term impacts of COVID-19 on the pharmaceutical sector. DARU J Pharm Sci; 2020.

© 2020 Ramaiah et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/60709