Review Article

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20204769

Impact of COVID-19: nursing perspective and concern

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Received: 01 August 2020 Accepted: 16 September 2020

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ABSTRACT

The Nurses' contribution to the Health care sector globally is always delightful. The abrupt and undetected spread of Coronavirus disease 2019 (COVID-19) worldwide, with variant mortality and morbidity rates in different countries, had put the health system into crisis. Response to the outbreak, preventing the spread of infection and control strategies, and nursing care during the pandemic is vital to attain goals of present medical emergency. Authors took efforts to discuss the perspective of nurses being front line health care workers, in an imperative situation in which the human population is undergoing with uncertainty, along with issues and concerns involved in managing the situation. The leadership qualities among nurses to overcome the complex COVID-19 is once again proved in this episode of the pandemic. The concern to individual nurse in preserving the ethical and moral values with the fundamental framework and training undergone is recalled and channelized. Nurses play an essential job responsibility in numerous ways while dealing with mankind, sick or well; either in a health care setting or at the community level. Vital domains involved in full filling nurses role during pandemic (COVID-19) noticeably creating awareness, screening services, and support for the general public who are high-risk conditions, infection prevention and surveillance, implementing appropriate preparations and precautions in health care settings, protecting the patients with immunodeficient and or co-morbidities, care of COVID-19 patients with acute and chronic illness.

Keywords: COVID-19, Pandemics, Nurse, Infection control, Health Professional, Infections

INTRODUCTION

The increased demand for trained nurses in developing countries and developed countries witnessed from decades. Stipulation for nurses initially started from military camps and later from civilian hospitals; while in military camps, health workers recruited were susceptible to infection and the disease spread rapidly multiplying thousands in number falling ill. Hundreds of nurses became infected during the ongoing epidemic, and many lost their lives. Also, Nurses working at camp Cody hospital in New Mexico were infected by flu in 100:75 ratio, and at camp Jackson, South Carolina 5 nurses died after falling sick;

approximately 127 nurses working for military camps lost their lives during epidemics.¹

During the Spanish flu pandemic in 1918, killed about 50 million people globally was the highest tragedy reported and underlining Nurses played a pivotal role in this session. Indeed, advancement in science and technology, the health care system has made humanity much safer and secure. Perhaps these advancements and modern development have simultaneously increased the risk of more pandemic outbreaks worldwide.²

Globally reported pandemic outbreak in the present era is Coronavirus disease 2019 (COVID-19), a novel

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Coronavirus. The infection initially identified in Wuhan city, China during November-December 2019 and WHO declare it as public health emergency on January 30, 2020, and at present, it is a pandemic.3 The exposed person may show initial signs and symptoms within 2-14 days as cough, body pain, fever, sore throat breathing difficulty and worsen to severe complicating to pulmonary edema and acute respiratory distress syndrome. There is no specific treatment or vaccine available for this infection; hence prevention is the only known solution till today.⁴ The pandemic outbreak reported in 213 countries and territories by victimizing 50 lakh people and causing 3 lakh deaths, globally.⁵ COVID-19 pandemic primarily spreads from person to person by droplets from the respiratory tract. The spread of pandemic is very high and going undetected leading to increased mortality rate related with pneumonia have created present medical emergency; which is costing significantly on countries health, economy and social life as a whole.6

The Instant response to novel coronavirus (COVID-19) continues all over the world. Health care professionals, especially nurses' efforts to assist the sick in hospitals and address the community fears and factors, are outstanding. Nurses denoting the largest sector of the healthcare system in every country play a crucial role in facing this pandemic.²

DISCUSSION

Nursing care in a pandemic

In the annual report of World health organization (WHO) 2019, it was mention that "the world is not prepared adequately for a global health crisis. Since pandemic outbreaks are unpredictable, global health agencies have to develop plans that provide appropriate and timely responses; those who must be involved in the planning are nurses". The role of nurses in these sessions begins with disease preparedness before it causes widespread devastation in the human community, and nurses work as frontline healthcare professionals in different kinds of healthcare settings in the central, middle, and peripheral levels.²

American Nurses Association (ANA) brief, in its 2018 policy, nurse leaders who have the skill and knowledge to direct and coordinate with health care network prevent and control the spread of disease. Nurses are working day and night globally by filling the role of frontline warriors and assisting other health professionals to overcome this pandemic.⁷

At present, there is no routine treatment exists to treat Covid-19 infection; hence the best-known strategy witnessed till now is prevention and control. The concept of social distancing, social isolation, and early identification of agent and host can be achieved by developing linkage between trained nurses, health care agencies, and the community.⁸

In developed countries like the United Kingdom, policies are formulated to recall experienced and retired nurses, voluntarily dedicate and render their service to health agency and spring break camps as nurses lead the role in managing the crisis. Simultaneously, the Washington state nurse association is safeguarding staff nurses and other healthcare workers who are considered front line responders for this pandemic. The essential protocols are developed for protecting and updates from responders who come in direct contact with the primary source of infection.⁹

Nurses have numerous roles and responsibilities, especially during pandemic (COVID-19) outbreak, such as: creating awareness, screening services, to support community people for who are at high-risk, infection prevention and surveillance, implementing appropriate preparations and precautions in health care settings, protecting the patients with immunodeficient and or comorbidities, care of COVID-19 patients with acute and chronic illness.¹⁰

Infection control strategies

Infection control practices have been recognized as the first action to respond in any outbreaks. The re-emergence of Severe acute respiratory syndrome (SARS) in 2003, Ebola virus in 2014 at West Africa and present COVID-19 as pandemic has made more people as victims. Disease preparedness and initial response can only halt the condition to some extent. Nurses and doctors are trained for infection control during their courses; also, they get lots of training on the job as well. Basic measures for infection control such as hand washing, personal protection equipment (PPEs), use of respirators would be the cornerstone in infection control. Focusing on other areas covering patient flow, Outpatient departments (OPDs), Emergency, triage department and visitors area for health safety, isolation, restriction and environmental hygiene.

COVID-19 is a highly infectious disease transmitted through direct or indirect contact. Face masks are recommended for professionals and non-professional during this pandemic to prevent droplet infection and aerosol prevention since it is considered as the first line of transmission. Infection control strategies and necessary guidelines are described as follows.¹²

COVID-19

Covid-19 is a disease that is caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2). The transmission of Covid-19 is through droplets (a person is within 1 meter of distance), fomites, direct (with an infected person) and indirect contact (objects of an infected person, example: surface, pen, mobile, stethoscope, etc.). Also, in a recent study, airborne transmission is reported. Patient with Covid-19 infection shows various symptoms, including body pain, fever, cough, sore throat, fatigue, dyspnoea, Gastrointestinal (GI) disturbance initially. 13,14

To diagnose Covid-19, Centre for disease control (CDC) recommended swab specimens collection from nasopharyngeal / oropharyngeal / nasal mid-turbinate swab or bronchoalveolar lavage, by a trained health worker in a specified setting after wearing complete PPEs. There is no defined treatment has been established for Covid-19; the patient is given symptomatic treatment with standard isolation practices. 14,15

More than half (56%) of patients are recovering from COVID-19 infection, while 8% of mortality has reported globally, whereas countries like the USA, deaths were around 1,31,000 in number, and 18,000 in India.⁵

Screening and quarantine in covid-1916

The screening process should take place in an adequately ventilated or negative pressure rooms with at least 12 hours air changes to minimize the risk of spreading transmission. The number of staff should be reduced to a minimum in the process to reduce the risk of exposure. All the articles to be disinfected with 70% alcohol solution and cleaned for the next usage. Infection control professional or microbiologist should be trained for sample collection or any investigation which comes with close contact of patients. Professional should use proper PPE kit and mandatory respirator for sputum swab collection (nasopharyngeal and oropharyngeal) due to aerosol generation. Records to be maintained of every suspect as per hospital policy. The minimum duration of quarantine based on information for COVID-19 is 14 days from the day of exposure.

Home quarantine

"Stay home, stay safe" is a widely used slogan in this pandemic. Self-isolation for a certain period in a particular living area without social contact would break the chain of infection and a pivotal concept to prevent and control the disease.

Infection control professional involved in screening and history taking process can adapt to assessing for contact history as defined by WHO:¹⁷

Exposure during two days prior and the 14 days later the onset of symptoms. Face to face contact with a possible or confirmed case within one meter and for more than 15 minutes. One to one physical contact with a suspected or a confirmed Covid-19 positive case. Direct care for a patient with possible or a confirmed COVID-19 infection without using proper PPE.

Confirmed case

A person with laboratory investigation confirmed with COVID-19; irrespective clinical symptoms.

Possible case

A suspect case for whom testing for the COVID-19 virus is inconclusive.

Suspected case

Person with acute respiratory illness/fever; and travel history to COVID-19 zone during in last 14 days (or) person with respiratory symptoms and has been contacted with a confirmed or probable COVID-19 case (or) client with respiratory symptoms/fever; and in the absence of alternative diagnosis that thoroughly explains the clinical features.

Role of hospital administration

Hospital administration needs to act promptly during COVID-19 global health emergency and form a multidisciplinary team. Also, administrators should plan for proper use of resources, training and develop an effective communication system for smooth functioning. Furthermore, motivation, psychological preparation is also an essential dimension during this frightening situation.¹⁸ Hospital administration and engineering departments should focus on prevention and control of infection on campus. As per the Medical Council and NABH guidelines, most health agencies are framed to a minimal transition of pathogens and hospital-acquired infection. Due to pandemic outbreaks, mass casualties, and concern to health care workers are certain basic measures to be followed:19

Reframing of infrastructure especially Isolation ward/ COVID-19 block. Access and availability of all the essential items to treat infected persons in one block. Maintenance of entry and exit separate to health personals and patients. Facility access to well-equipped laboratory investigations and transportation. A well-trained team of health care professionals for OPDs, and screening services. Equal nurse/doctor and patient ratio to overcome health professional crisis due to quarantine policies. Adaptation of social distancing in the wards/units, in between patients and health care workers to prevent overcrowding. Provision for hand sanitizers, PPE kits, Respirators and inservice screening strategies. Separate quarantine policy to be applicable for staff working in COVID block. Safe drinking water and healthy meal for health care workers, considering safety precautions.

Standard precautions and hospital disinfection²⁰

Components of standard precaution and hospital disinfection during COVID-19 pandemic outbreak as per BMW rules and regulations are as follows:

Frequent hand hygiene process. Compulsory respiratory hygiene/ cough etiquette and respirator usage on duty. Use of Personal protective equipment (PPEs): gloves, mask, shoe cover, gown, face shield, hood, apron. Safe waste

disposal (considering the categories and classification as per BMW guidelines). Hospital disinfection and sterilization process: High touch area and low touch area:

- High touch areas, such as doorknobs, case sheet, telephone, computer, stationeries, call bells, bedrails, switchboard, taps, toilets, table, chair, stethoscope, ECG machine, ventilator, oximeter etc.
- Low touch area: such as walls, cupboards, mirrors etc.

Sterilizing items

Gown, tablecloth, bed sheets, procedure instruments etc. 0.05%-1% of sodium hypochlorite solution is used for floor disinfection and spill management. 70% of alcohol solution is used for disinfecting touch surface. 70% isopropyl alcohol hand rub may be used for cleaning metallic items.

Prevention and control of infection policy

Doctors and Nurses have been identified as frontline worriers during this pandemic outbreak. The health care professionals partially or completely serving through health agencies, hospitals, Nursing homes, and community area has a crucial role in taking part in the prevention and controlling of disease.²¹ The initial step would go with health education, assessment, screening, and supporting the general public in the high-risk area. Education and counselling should involve all the strategies of infection control and prevention.²²

The second step may focus on disease surveillance and prevention of hospital-acquired infections. The suspected and symptomatic cases may be recorded in disease surveillance and prevention of hospital infection may include the standard precaution and infection control strategies.⁴

The third reach is towards patients who are all already diagnosed with chronic pulmonary conditions, cancer, Chronic obstructive pulmonary disease (COPD), metabolic disorders and high-risk group. This category of people who live in the community are more prone to get the infection when exposed; hence fourth, social distancing and isolation for small duration may keep them safe by all means.²³

Issues and concern

Nurses, being frontline COVID-19 pandemic warriors to render direct and indirect patient care at community and centre level, the health care settings face enormous challenges. COVID-19 pandemic is a recently detected viral infection, effective vaccine and definitive treatments are under surveillance and yet to develop. As discussed, the patients are presented with a dynamic disease profile

and its new situation every time. It is vital to the nursing personnel to update their knowledge about the pandemic and reduce the gap.⁶

Understanding the chain of infection is a key point to control any infection, either pandemic or epidemic. The role of the nurses in this cycle is critical because a trained nurse being the bridge between patient and other health care professionals can respond to every uncertain situation. Infection risk assessment at a different level during the patient stay and critical thinking in managing the risk factors finally safe discharge of patient would remain as fundamental in caring infected patients. Skills to notice subtle changes in patient condition, whether getting worse or getting better would go with the experience of service. Nurses even manage health crisis, response to various health problems and harmonious approach in-patient care. Analyzing patient response to medical treatment, their education with psychological support and relaying the assessment findings to providers.

The impact of coronavirus is affecting a large population at a time; many patients who are diagnosed positive and with severe symptoms required Intensive care unit (ICU) care and intubation. Trained nurses being the front-line warriors may protect themselves by using mandatory respirators and PPE in an isolation ward. Self-quarantine from the family who come in direct contact with suspects, shower before going to living area, self-check for any signs and symptoms is notifying point. It is also important to remember staying home, frequent hand washing and taking care of mental health during this crisis. In this pandemic condition, everyone is trying to cope up with the situation and adjust to a new lifestyle. Many professionals disciplined themselves regarding work protocol and much serious about infection control measures. But still, stress and anxiety triggers in the workplace and key to overcoming it is choosing alternative means like frequent breaks, healthy relationship with family and friends, balanced diet and adequate sleep.²⁴

Adding to this, nurses have the challenge to generate empirical evidence based on lived experiences with patients and circumstances to develop strategies and policies to manage the situation in a better way. Need to take into account the impact of the pandemic in psychosocial aspects of health care workers experienced and how to cope with the situation. It is essential to keep in the priority about health administrative issue and cultural aspects role in disease prevention and control.

CONCLUSION

COVID-19 pandemic has put a huge burden on health and other aspects of the life of mankind; a severe impact on public health, social life, communication and economy as a whole. The complexity of the world in medical issues and challenges faced by health professional globally has vast difference comparing to years ago. The preparedness response for these pandemic diseases should continue by

strategic planning and evidence-based practices. Nurses and health care workers being frontline health care workers have a significant role in halting the crisis called COVID-19. Also, nurses are a vital resource to render direct patient acre round the clock. However, there are numerous challenges to face and come across to battle with COVID-19 pandemic.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required.

REFERENCES

- 1. Byerly CR. Fever of war: the influenza epidemic in the US Army during World War I. NYU Press, 2005.
- 2. Pandemic preparedness. WHO. 2020. Available: http://www.who.int/influenza/preparedness/pandemic/en/. Last accessed on July 04, 2020.
- 3. Statement on the Second Meeting of the International Health Regulations. Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). WHO. 2005. https://www. who. int/news-room/detail/30-01-2020-statement-onthe-second-meeting-of-the-international-health-regulations. Last accessed on July 04, 2020.
- Coronavirus (COVID-19) events as they happen. WHO. https://www.who.int/emergencies/diseases/novelcoronavirus-2019/events-as-they-happen. Last accessed on July 04, 2020.
- 5. Worldometer. Coronavirus Cases, Worldometer. 2020. Last accessed on July 04, 2020.
- 6. Chen SC, Lai YH, Tsay SL. Nursing Perspectives on the Impacts of COVID-19. Journal of Nursing Research. 2020;28(3):e85.
- ANA. Coronavirus Resources, COVID-19, ANA Enterprise. Available at: https://www.nursingworld. org/coronavirus?utm_campaign=261605 COVID-19 MKT&utm_source= house&utm_medium=digitalad &utm_content=covidresourcepage. Accessed on 04 July 2020.
- 8. CDC. Coronavirus Disease 2019 (COVID-19). https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html. Last accessed on July 04, 2020.
- 9. ECDC. COVID-19 situation update for the EU/EEA and the UK, as of 3 July 2020. Available at: https://www.ecdc.europa.eu/en/cases-2019-ncoveueea. Accessed on July 04, 2020.
- Patel A. Initial public health response and interim clinical guidance for the 2019 novel coronavirus outbreak - United States. Morbidity and Mortality Weekly Report. 2020;69(5.):140-46.
- 11. Nurses Responding to Global Pandemics. Available: https://onlinenursing.duq.edu/blog/nurses-responding-to-global-pandemics/. Accessed on 04 July 2020.

- 12. Lopez V, Chan KS, Wong YC.Nursing care of patients with severe acute respiratory syndrome in the intensive care unit: Case reports in Hong Kong. International Journal of Nursing Studies. 2004;41(3):263-72.
- 13. Zhang R, Li Y, Zhang AL, Wang Y, Molina MJ. Identifying airborne transmission as the dominant route for the spread of COVID-19. Proceedings of the National Academy of Sciences. 2020;202009637.
- Clinical management of COVID-19. WHO. https://www.who.int/publications/i/item/clinical-management-of-covid-19. Last accessed on July 04,2020.
- 15. Interim Guidelines for Collecting, Handling, and Testing Clinical Specimens for COVID-19. WHO. 2020.
- 16. Guidelines for home quarantine. MOHFW. Available at: https://www.mohfw.gov.in/pdf/Guidelinesfor homequarantine.pdf. Last accessed on July 04, 2020.
- 17. The ABCDE and SAMPLE History Approach Basic Emergency Care Course, WHO. 2020. Accessed on 04 July 2020.
- 18. Gupta S, Federman DG. Hospital preparedness for COVID-19 pandemic: experience from department of medicine at Veterans Affairs Connecticut Healthcare System. Postgraduate Medicine. 2020;1.
- Infection Control Guidance for Healthcare Professionals about Coronavirus (COVID-19). CDC. 2020. Available at: https://www.cdc.gov/ coronavirus/2019-ncov/hcp/infection-control.html. Accessed on 04 July 2020.
- 20. Bio-Medical Waste Management (Amendment) Rules. 2018;GSR:234 (E).
- Emanuele N. Pandemic influenza and the role of Infection Control Professionals - Infectious Disease Advisor. Available at: https://www.infectiousdise aseadvisor.com/home/decision-support-in-medicine/ hospital-infection-control/pandemic-influenza-andthe-role-of-infection-control-professionals/. Accessed on 04 July 2020.
- Jernigan DB. Update: Public health response to the coronavirus disease 2019 outbreak - United States. 2020.
- COVID-19 Patient Care Information. American Society of Clinical Oncology. Available at: https://www.asco.org/asco-coronavirusinformation/care-individuals-cancer-during-covid-19. Accessed on 04 July 2020.
- 24. The role of nurses in the COVID-19 pandemic UB Now: News and views for UB faculty and staff University at Buffalo. 2020. http://www.buffalo.edu/ubnow/stories/2020/04/qasands-nurses-covid.html. Last accessed on July 04, 2020.

Cite this article as: Sharma R, Vishwas AS, Jelly P. Impact of COVID-19: nursing perspective and concern. Int J Community Med Public Health 2020;7:4648-52.