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# Covid – 19 Pandemic: Roles of The Perioperative Nurses

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**Abstract:**

Covid-19 has had severe economic, social, political and cultural consequences on human life and these consequences will be experienced well into the future. The emergence of this pandemic has been a massive test for health-care systems in terms of their capabilities and weaknesses. Concerns for personal safety are to be expected. Although everyone is under immense stress from trying to cope with the pandemic, perioperative nurse are faced with unique challenges ranging from protecting themselves, their families, and patients, to working longer hours, and in some cases, being forced to stretch their personal protective equipment (PPE) in very risky ways. In addition, their concentration, comprehension, and decision-making ability can be affected by these psychological difficulties, which could, in turn, affect infectious disease management. Therefore, the study examined the roles of perioperative nurses in managing Covid-19 pandemic.

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## Introduction

The newly discovered coronavirus (COVID-19) was found in December 2019, which emerged in Wuhan, China, and has infected millions of people worldwide. COVID-19 is a respiratory disease caused by a novel coronavirus that quickly spread worldwide, resulting in a global pandemic. Coronavirus is a communicable disease deriving from a large family of viruses that causes illness. It is similar to Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV), with typical symptoms such as fever, shortness of breath, cough, and acute respiratory failure. It is also complicated by the fact that patients may present with atypical symptoms (CDC 2020; Chew, et al 2020).

This means COVID-19 has clinical presentations ranging from asymptomatic to acute respiratory distress syndrome, and multiple-organ failure that leads to death. In addition, COVID-19 can be transmitted from person to person through respiratory droplets. On January 30, 2020, COVID-19 was announced as a pandemic public health emergency by the World Health Organization, and recently, cases of the virus surpassed more than 3 million worldwide with increasing mortality. As of November 2020, countries mostly affected by this outbreak are the United States (with 9,208,876 cases), India (with 8,229,313 cases), and Brazil (with 5,545,705) (Lai et al., 2020; Newby, et al., 2020).

In recent months, this COVID-19 infection has caused the unparalleled hastening of infection transmission worldwide, mostly affecting healthcare workers' well-being. For example, one recent study in Poland found that healthcare workers who are exposed to COVID-19 infection have greater risk of depression, anxiety, and sleep disorders (Renton & Berlinger, 2020). Similar results were also found in one study in Iran and China, it revealed that nurses experience greater stress, extreme physical fatigue, anxiety, and insomnia during rendering of care, leading to reduced quality of patient care (Thomas, 2020). In another study in Greece, nurses and doctors working in public hospitals had issues of sleep disorders during the pandemic. In one of the studies, in Spain, healthcare workers reported that they were overwhelmed about their workload due to the increased number of COVID-19 patients admitted in the hospitals. One of the studies in Pakistan, regarding the mental health of nurses, discovered that healthcare workers' COVID-19 exposure has a substantial influence on their trauma, psychological distress, and turnover intention. In Nigeria, the first positive case was reported by the Nigerian Centre for Disease Control (NCDC 2021) on 27 February 2020, and the number doubled in the country within one month, representing a critical challenge for healthcare professionals. Recently, the Nigeria Centre for Disease Control (NCDC) reported over 213000 cases as at November 17$^{th}$ 2021 82 new cases were recorded.

Knowing that those working in hospitals are at higher risk of secondary infection or spreading the virus to colleagues, family members, and friends, perioperative nurses should be aware and also have knowledge of the disease and infection control measures to prevent its spread. However, empirical data reports that COVID-19 pandemic is challenging to nurses due to the novelty of the disease, lack of information, training, and seminars to care for patients with the virus, and the psychological trauma resulting from patient deaths. Since it is such a new infection, misunderstanding COVID-19 signs and symptoms and incorrect treatment by nurses might speed the spread of hospital infection (Thomas, 2020). However, there is limited information regarding COVID-19 pandemic awareness, transmission and

prevention among perioperative nurses. Thus, it is crucial to understand what perioperative nurses know about the virus, how the virus can be transmitted and preventive measures.

Migration of people also aided the transmission of the infectious disease. Globally many hospitals could not cope with the influx of patients with acute respiratory distress syndrome for intensive care treatment and those requiring surgical intervention of some underlying conditions. These patients arriving in the theatre were being cared for by the perioperative nurses though not immune against the infection. With the report of shortage personal protective equipment, the experienced nurses influences the planning and maintenance of safety precaution and aseptic techniques to ensure limitation of the spread of the disease within perioperative system. It is imperative that the hospital governing bodies in their policies should make adequate provision for continuous training of the nurses and personal protective equipment made available routinely would help the nurses to provide safe surgical environment for the patients and the surgical team members with positive outcomes of surgical care and prevent hospital acquired infection in the patients.

**History and Conceptual Analysis of Coronavirus (COVID-19)**

The novelty of Coronavirus infection makes it a scourge that is sweeping across continent increasing frequency of zoonotic spillovers leading to human infections and transmission. Coronavirus also known as COVID-19 belongs to the same family of viruses responsible for severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome for which zoonotic and person- to-person transmission have been confirmed (WHO, 2020).

Coronavirus popularly known as Covid-19 was first reported in China, specifically in the city of Wuhan in late December 2019. World Health Organization (WHO) and Chinese authorities worked together and the etiological agent was established to be a new virus and was named Novel Corona Virus (2019-nCoV). China announced its first coronavirus related death of a 61-year-old man on 11th January (WHO, 2020). The infection spread across the globe in rapid pace over a period of few weeks (WHO, 2020).

The novel Corona virus originated from the human seafood market at Wuhan, China where bats, snakes, raccoon, dogs and other animals are sold, and rapidly spread to 109 countries. The zoonotic source of SARS-Cov-2 is not confirmed, however sequence based analysis suggested bats as key reservoir of COVID-19. Bhagavathula and Shehab (2020) submitted that COVID-19 is among the deadliest infectious diseases to have emerged in recent history, like other pandemics, the mechanism of its emergence remains unknown. Nevertheless, a large body of virologic, epidemiologic, veterinary and ecologic data establishes that the new virus, SARS-Cov-2 evolved directly or indirectly from a Beta-Corona virus in the Sarbecovirus group (SARS like virus) group that naturally infects bats and pangolins in Asia and South – East Asia. Scientists have warned for decades that the Sarbeco viruses are poised to emerge again and again identified risk factors and argued for enhanced pandemic prevention and control efforts. Unfortunately, few of such preventive actions were taken resulting in the latest emergence detected in late 2019 which spread quickly.

Official names have been announced for the virus responsible for COVID-19 (previously known as 2019 novel Corona virus) and the disease it causes (WHO, 2020a). The official names are COVID-19 caused by SARS-Cov 2. The reason for the name of the virus is that the

virus is genetically related to the corona virus responsible for the SARS outbreak in 2003, though related the two viruses are different.

Bhagavathula, et al., (2020) revealed in a survey that loneliness level had increased tremendously, 40% of respondents revealed they are lonely, their relationships are not meaningful and they feel isolated. They also stated that lack of connection heightens health risks and make people more prone to alcohol and smoking. Man are social animals, daily exposure to news about Coronavirus may result in a range of reactions which may be emotional, physical, mental or behavioral. Coping with isolation has brought unprecedented challenge for daily life especially physical separation as a result of social distancing of 2 meters guidelines, no hugs and pats like before but elbow greetings. It is obvious human needs social gathering, social interaction, contacts and connection to survive, if not seen with positive perspective, social distancing may be seen as social isolation (Bhagavathula, et al., 2020; Renton & Berlinger, 2020).

**Mode of Spread of COVID-19**

In the scientific brief of WHO in March, mode of transmission of COVID-19 were explained; respiratory infections can be transmitted through droplets of different sizes; when the droplet particles are less than 5 micrometer in diameter, they are referred to as droplet nuclei, but when greater than 5 micrometer, they are referred to as respiratory droplets. Current evidence showed it can be transmitted through contacts and respiratory droplets (WHO 2020).

Droplets transmission occurs when a person is in close contact (within 1m) of with someone who has respiratory symptoms (e.g coughing and sneezing) and is therefore at risk of having his or her mucosae (mouth and nose) or conjuctiva (eyes) exposed potentially to respiratory droplets, also through formites in immediate environment of the infected person (Thomas, 2020). Direct contact with infected person or indirect contact with objects used by the infected person can also be a mode of transmission. Airborne transmission of nuclei can occur in settings where procedures that support aerosols are performed like endo-tracheal intubation, tracheostomy, cardio pulmonary respiration among others.

Coronavirus is a respiratory virus known to cause illness such as common cold, headache, breathing problem and severe acute respiratory syndrome. Coronavirus can be transmitted from animal-to-human and human-to-human. The coronavirus is spread from human to human through feco-oral, droplets and direct contact with an incubation period of 2-14 days (Baud, et al., 2020). So far, no treatment or vaccine has been recommended explicitly for coronavirus. Application of the preventive measure to control coronavirus is the paramount critical intervention.

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On average it takes 5-6 days from when someone who is infected with the virus for symptoms to show. The virus is transmitted primarily through respiratory droplets and contacts with infected persons. People with underlying medical conditions like cardiovascular conditions, diabetes, chronic respiratory disease and cancer will develop serious complications if they contract COVID-19. Till date, there is no cure for COVID-19, clinical trials however are ongoing and prevention is the only available way to manage the virus (Azlan, 2020; Thomas, 2020; Baud, et al., 2020; Bhagavathula & Shehab, 2020).

The infection source of coronavirus (COVID-19) is mainly patients with SARSCoV-2 infection. Asymptomatic infected patients may also become the source of infection, mainly via aerosols from the respiratory tract, but also through direct contact. Elderly people with underlying diseases are more likely to be infected with the virus and develop severe disease and children and infants are also at risk (Thomas, 2020).

**The Essence of Nursing and Care giving**

Nurses, as a major population of healthcare professionals serving in the COVID-19 pandemic, continue to serve in diagnosing, treating and caring for patients for weeks with limited resources (Newby, et al., 2020). The literature states that nurses, who are faced with this critical condition and who are at risk of infection, are exposed to significant stress, and this intensely experienced stress brings psychosocial problems along with it (Huang, et al., 2020; Lai, et al., 2020).

Nursing is the assistance of individual to help them recover from illnesses, to promote their health and improve on their quality of life. It focuses on promotion of health, recovery from illness and diseases. Caring has remained the art and science of nursing's essence (Lisa, 2016). It is the central core and the essence of nursing. Nursing is considered an art and a science with caring forming the theoretical framework. It involves the bringing about of a conducive health promotion and wellbeing. It is a life-giving and life-receiving career that will lead to life-time growth and learning when caring is infused into it (Waston, 2016). Nursing care encompasses physical, emotional, mental and social aspects of life, in order to improve patient health and wellbeing.

The relationship between the nurse and the patient being caring for can be more effective when the art of caring is included in the management of the patient. The unique function of nursing is to provide assistance and to meet the need of the client, to achieve this; there is need for person-centred care in which the care recipient is seen as an individual and not just an object. One of the main purpose of nursing is patient satisfaction with nursing care which depends on holistic care taking into consideration all the domains of caring behaviour (Naghnen, et al.,2017).

In collaboration with other healthcare professionals, nurses' skill, competence, compassionate care can help prevent the patient's functional decline, eliminate knowledge

deficits for the patient and family, and promote their engagement in health care thus leading to care satisfaction (Melissa, 2015). Nurses are the frontline healthcare professional that patient meet up with, spend the highest amount of time with and rely upon for recovery during hospitalization, they play a prominent role in determining the overall satisfaction of patient's hospitalization experience.

They have major roles to play in all types of health settings in order to ensure that acceptable and satisfactory care is delivered to older adults. Nursing is the major factor to the provision of a safe, effective, and compassionate care at individual, family and community levels. With the improvement in healthcare environment, nursing remains the only healthcare profession that has closest proximity with the patients hence their behaviour and relationship influences patient satisfaction and ultimately promote quality of life.

Studies reported by Flynn (2016), showed the psycho-social as the most important caring behaviour, it concluded that when nurses demonstrate good psychological and social behaviour the dignity of the older adults are well maintained. The purpose of nurse caring behaviour is not focused on patient's physical needs alone but also on his/her emotional, mental and social needs (Farehani, et al., 2016). Caring behaviours improve the quality of care and thus, cause a sense of security, reduction of anxiety, and consensus between caregiver and care recipient (Bergdahl, et al., 2019) which subsequently may enhance patient satisfaction (Janet & Bronya,2019). With demonstration of positive caring behaviour, the quality of care increases the sense of security in patients and reduces patient's anxiety. When nurses provide good nursing care to the patients, it has a positive impact on patients' life and also on his satisfaction (Öztunç, 2015).

Caring behaviours can enhance the quality of care provided thereby creating a sense of belonging, allowing the patient to accept care and promote nurse-patient relationship, ultimately enhancing patient satisfaction (Batbaatar, et al., 2016). Touch, guidance, investing time and attitudes that promote healing by the nurses were reported by patients as reflecting caring (Benbenishty & Hannink, 2017). Nurse caring behaviours are also most important in some other ways, it boost the sense of security in many patients and had an important role in minimizing the anxiety level of the patients thus increasing the patients' satisfaction (Bergdahl, et al., 2019). When there is a harmony between patients' expectation and care received patient satisfaction with caring behaviour of nurses is achieved. The nurse caring behaviours that is structured around the needs and frailties of older adults could be a significant influence on their care satisfaction and positive health outcomes (Kathyrine, et al., 2018).

**Roles of the Perioperative Nurse in Prevention of Spread of Covid-19**

a) Regard every patient received into the theatre as a potential Covid -19 positive patient
b) Maintaining social distancing of 2-3 meters
c) Hand washing with soap and water, while providing care in – between two patients
d) Adherence to maintenance of safety precautions
e) Provision and judicious use of personal protective equipment like barrier caps, goggles, boots, gloves, face masks
f) Proper waste management especially secretions from the patients while suctioning

g) Travel bans to reduce spreading of the virus
h) Surveillance of contact
i) Taking temperature of non – staff visiting the theatre or patient
j) Vaccination of hospital workers working within the perioperative environment
k) Suspension of elective cases for emergency only to reduce traffic of person to the theatre and operating rooms
l) Separation of an induction room for inducing patient with anaesthesia before transfer to the table because of release of aerosol during intubation that can cause infection to an uninfected person
m) Judicious maintenance of safety precaution
n) Aseptic technique and sterile technique highly observed even in infected cases

**Conclusion**

Perioperative nurses are at high risk of infection and are also fearful. Meanwhile, they have great burdens in clinical treatment and public prevention. High expectations, lack of time, skills and social support may cause occupational stress, and stresses and challenges can lead to anxiety, post-traumatic stress disorder, great distress, and burnout or physical illness. Perioperative nurses and their families may feel stigmatised, angry, stressed, fearful, guilty, helpless, lonely, tense, sad and anxious under the influence of the pandemic process and quarantine. They may also exhibit avoidance behaviour. Therefore, supportive interventions may be helpful, such as keeping the quarantine process as short as possible, informing the individual and society about the pandemic process and quarantine, providing adequate material to meet the basic needs of the quarantine nurse.

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