Strategic Assessment of Women Involvement in Combating Covid-19 Pandemic

BY

DIM, Uchenna Miriam Eberechukwu
Department of Physical and Health Education
University of Uyo, Uyo

AND

UNEH, Christopher Asukwo
Public Health Department of Physical and Health Education
University of Uyo

ABSTRACT

The COVID-19 pandemic is harming health, social and economic well-being worldwide, with women at the centre. First and foremost, women are leading the health response: women make up almost 70% of the health care workforce, exposing them to a greater risk of infection. Women also face high risks of job and income loss, and face increased risks of violence, exploitation, abuse or harassment during times of crisis and quarantine. The paper highlighted the symptoms of covid-19 which include: fever, dry cough, fatigue etc. As well as it mode of transmission as: contact, droplet, airborne, fomite, fecal-oral etc. Also it preventive measures includes: washing your hands regularly with soap and water or with an alcohol based hand rub sanitizer, etc. The paper as well highlighted some antiviral agents used in treating of covid-19 such as: remdesivir, molnupiravir, etc. And covid-19 vaccines as: Pfizer-BioNTech vaccine, Moderna vaccine, etc. The paper also viewed different roles women play in combating Covid-19 both as a medical doctor, nurse or a pharmacist. The paper concluded that as covid–19 pandemic is creating a profound shock worldwide, with different implications for men and women. One of the recommendations was that the government should map out a plan of action to counter the short and long-term effects of the coronavirus on women keeping in view their health, livelihoods and domestic violence. For this purpose, large-scale consultations with women organizations especially with government, civil society, and women rights bodies need to be initiated.

KEYWORDS: Women Involvement, Covid-19 Pandemic, Female Medical Scientist and Akwa Ibom State

Introduction

The corona virus infects many animal species such as humans, causing acute and chronic diseases. In 2002, SARSCoV appeared in the human population in China, causing worldwide epidemics with severe morbidity and high mortality rates, especially in aged people (Weiss and Leibowitz, 2012). Corona virus is an RNA virus that is present and widespread in humans, other mammals and birds and which cause respiratory, enteric, liver and neurological diseases. The corona virus forms an envelope structure on the outer surface of the virion and its morphology is round with a diameter of 100-160 nm (Zhu, Zhang, Wang, Li, Yang, Song, Zhao, Huang, Shi, Lu, Niu, Zhan, Wang, Gao and Tan, 2020), and also contributes significantly to the spread of the virus in vivo and in the antagonist of the host cell response (Weiss and Leibowitz, 2012). Their genome is positive-sense (+) single-

stranded (ss) RNA and measuring 27-32 kb. Corona viruses have additional accessory genes in addition to genes for structural viruses of the virus (Huldani, Uinarni, Sukmana, Tommy, Said, Edyson, Eso, Sitepu, Arifin, Mawu, Polim, Effendi, Ariestiyanto, Martamba, Ahdiya, Ridhoni and Achmad, 2020). There are six species of corona viruses that cause disease in humans. Four viruses, 229E, OC43, NL63, and HKU1, usually cause the common cold symptoms in immunocompetent individuals. The other two types are SARS-CoV and MERS-CoV) originating from zoonoses and are associated with sometimes fatal diseases. SARS-CoV was the causative agent of a severe outbreak of acute respiratory syndrome in 2002 and 2003 in Guangdong Province, China. MERS-CoV is a pathogen responsible for the outbreak of severe respiratory disease in 2012 in the Middle East (Zhu, et. al., 2020). The first case was identified in December 2019, a group of patients with pneumonia whose cause was unknown was associated with the seafood wholesale market located in Wuhan, China (Huldani, et. al., 2020). The unknown Betacoronavirus was discovered through the application of unbiased sequencing in samples from patients with pneumonia. A new corona virus was isolated used human airway epithelial cells, named 2019-nCoV, which forms a clade in the sarbecovirus subgenus, the Orthocoronavirinae subfamily. 2019-nCoV is the seventh member of the corona virus family that infects humans (Zhu, et. al., 2020).

Conceptual Review

Concept of Coronavirus and Covid-19 Pandemic

Coronaviruses are a large family of viruses which may cause disease in animals or humans (World Health Organization, 2020). Seven coronaviruses can produce infection in people around the world but commonly people get infected with these four human coronaviruses: 229E, NL63, OC43, and HKU1. They usually cause a respiratory infection ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) and the most recently discovered coronavirus (COVID-19) causes infectious disease (Hafeez, Ahmad, Siddqui, Ahmad and Mishra, 2020; WHO, 2020). An outbreak of COVID-19 subsequently named SARS-CoV-2 caused by the 2019 novel coronavirus now called severe acute respiratory syndrome coronavirus 2 began in Wuhan, Hubei Province, China in December 2019, the current outbreak is officially a pandemic (Murphy and Bell, 2020). It was initially reported to the WHO on December 31, 2019. On January 30, 2020, the WHO declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic (Akpan and Umoudo, 2020). According to Mediawati, Susanto and Nurahmah (2020), the spread of the COVID-19 virus can be droplets or aerosol. Droplets of more than 20 microns are produced, for example when coughing, sneezing and screaming. Droplets follow the earth's gravitational force so that within 1-2 meters will fall to the ground. Whereas aerosols are fine particles whose diameter is below 10 microns which can travel several meters before falling to the ground or the surface of other objects. Among them are 10-20 micron particles that behave like droplets. There are smaller particles that are less than 5 microns so they can enter the lungs even to the alveolar and cause pneumonia. For particles between 5-10 microns, it can only penetrate the glottis and stop at the tracheal branch (Liu, 2020). Problems become complicated when droplets dry in the air (droplet nuclei) and are affected by winds that will float longer and reach further before falling to the ground or sticking to the surface of objects.

The COVID-19 pandemic is a wake-up call for Africa (Lone and Ahmad, 2020). The high burden of infectious diseases, weak health systems, and poverty are some major factors which particularly make the continent one of the most vulnerable to this current pandemic.

According to the Infectious Disease Vulnerability Index (IDVI, 2016), out of 25 countries most vulnerable to infectious diseases, 22 are in the African region (World Health Organization 2020). The WHO Africa estimated that there are 26 million people infected with HIV, 2.5 million with tuberculosis, 71 million with hepatitis B or C and 213 million with malaria in the African region (World AIDS Day, 2019; World Tuberculosis Day, 2019; World Hepatitis Day, 2019; World Malaria Report. (2019). Moreover, the double burden of noncommunicable diseases (NCDs) such as cardiovascular diseases, cancers, chronic respiratory diseases and diabetes are also immensely significant in Africa, and all these conditions compromise the body's immunity (Mudie, Tan and Kendall, 2019). Therefore, it could be reasonably hypothesized that the majority of the African population, due to their immunocompromised conditions, will be at high risk for COVID-19.

Covid-19 Preventive Measures

According to WHO (2021), to take care of your health and protect others subsequent steps should be noted:

Take Steps to Protect Yourself

- Wash your hands regularly and thoroughly with soap and water for at least 20 seconds or with an alcohol based hand rub (hand sanitizer that contains at least 60% alcohol) completely cover your hands and rub them together until they do not dry especially after you have been visited a public place, or after blowing your nose, sneezing or coughing.
- Hands touch many surfaces and pick up viruses and these contaminated hands, can transfer the virus to your nose, eyes or mouth So, avoid touching these organs with unwashed hands. Because from there, the virus can enter the body and may cause persons to sick (Hafeez, et. al., 2020).
- Maintain social distancing (maintain at least 1 metre or 3 feet distance between yourself and anyone) and avoid close contact with people who are sick (who is coughing or sneezing). When infected individuals cough or sneezes, they spray small droplets from their nose or mouth which may contain COVID-19 virus. The person can breathe in these droplets (WHO, 2021).
- Avoid large events and mass gatherings

Take Steps to Protect Others

- Stay home if you are feeling unwell, unless you're going to get medical care.
- If you have a cough, fever and difficulty breathing, seek medical attention consult online to your doctor
- If possible, stay isolated in a separate room from family and pets and wear a facemask when you are around other people (e.g., sharing a room or vehicle). If you are unable to wear a facemask (due to its causes trouble breathing or other reason) then you should cover your coughs and sneezes (Hafeez, et. al., 2020).
- Avoid direct physical contact (including physical examination and exposure) to respiratory and other body secretions. For instance, move potentially infectious people to isolation rooms and close the doors. In a working place, make the distance in workers, customers, and other visitors, especially from potentially infectious individuals' location.
- Restrict the number of individuals entering isolation areas, including the room of a patient with suspected and confirmed COVID-19.

Treatment of Covid-19

According to Bergman (2021), WHO has embarked on an ambitious global "megatrial" called SOLIDARITY, which is an unprecedented multinational coordinated effort to collect rapidly robust clinical and scientific data during the SARS-CoV-2 pandemic, giving hope and planning to eradicate the SARS-CoV-2 virus with randomized to standard care or one of four active treatment arms (remdesivir, chloroquine or hydroxychloroquine, lopinavir/ritonavir, or lopinavir/ritonavir plus interferon beta-1a) (WHO, 2020).

Antiviral Agents

Remdesivir: Remdesivir was originally developed by Gilead Sciences to combat Ebola and other related viruses by inhibiting viral replication (Kumar and Khodor, 2020). Remdesivir is an adenosine analogue with broad-spectrum antiviral activities (Warren, Jordan, Lo, Ray, Mackman, Soloveva, Siegel, Perron, Bannister and Hui, 2016). A nucleoside analogue competes with natural nucleosides during replication for the RdRp active site, thus inhibiting the viral replication (Elfiky, 2020). This drug is currently being extensively evaluated against SARS-CoV-2 in the United States and Europe, the efficacy of Remdesivir is found ambiguous against severely infected patients (Silverman, 2020). Despite its controversial results, the US Food and Drug Administration (FDA) approved the emergency use of the experimental Remdesivir to treat hospitalized SARS-CoV-2 patients (US FDA, 2020).

Remdesivir Use in Children: Remdesivir emergency use authorization includes pediatric dosing that was derived from pharmacokinetic data in healthy adults. Remdesivir has been available through compassionate use to children with severe COVID-19 since February 2020. A phase 2/3 trial (CARAVAN) of remdesivir was initiated in June 2020 to assess safety, tolerability, pharmacokinetics, and efficacy in children with moderate-to-severe COVID-19. CARAVAN is an open-label, single-arm study of remdesivir in children from birth to age 18 years (U.S. National Library of Medicine, 2020). Data were presented on compassionate use of remdesivir in children at the virtual COVID-19 Conference held July 10-11, 2020. Results showed most of the 77 children with severe COVID-19 improved with remdesivir. Clinical recovery was observed in 80% of children on ventilators or ECMO and in 87% of those not on invasive oxygen support (Chiotos, Hayes, Kimberlin, Jones, James and Pinninti, 2020).

Remdesivir Use in Pregnant Women: Outcomes in the first 86 pregnant women who were treated with remdesivir (March 21 to June 16, 2020) have been published. Recovery rates were high among women who received remdesivir (67 while pregnant and 19 on postpartum days 0-3). No new safety signals were observed. At baseline, 40% of pregnant women (median gestational age 28 weeks) required invasive ventilation compared with 95% of postpartum women (median gestational age at delivery 30 weeks). Among pregnant women, 93% of those on mechanical ventilation were extubated, 93% recovered, and 90% were discharged. Among postpartum women, 89% were extubated, 89% recovered, and 84% were discharged. There was 1 maternal death attributed to underlying disease and no neonatal deaths (Burwick, Yawetz, Stephenson, Collier, Sen and Blackburn, 2020). Data continue to emerge. A case series of 5 patients describe successful treatment and monitoring throughout treatment with remdesivir in pregnant women with COVID-19 (McCoy, Short, Srinivas, Levine and Hirshberg, 2020).

Molnupiravir: Molnupiravir (MK-4482 [previously EIDD-2801]; Merck) is an oral antiviral agent that is a prodrug of the nucleoside derivative N4-hydroxycytidine. It elicits antiviral effects by introducing copying errors during viral RNA replication of the SARS-CoV-2 virus. Preliminary results from the phase 2a dose-ranging MOVe-OUT study (n = 2020) showed at

an average of 10 days after symptom onset, 24% of patients in the placebo group remained culture positive for SARS-CoV-2; whereas, no infectious virus could be recovered at study day 5 in any molnupiravir-treated outpatients. The inpatient molnupiravir study (MOVe-IN) has been halted, but the phase 3 trial in outpatients who have at least 1 risk factor for poor outcomes (eg, advanced age, obesity, diabetes) will proceed with patients receiving 800 mg orally twice daily (U.S. National Library of Medicine, 2020).

Favipiravir: Favipiravir (Avigan; Appili Therapeutics) is an oral antiviral approved for treatment of influenza in Japan. It is approved in Russia for treatment of COVID-19. Favipiravir selectively inhibits RNA polymerase, which is necessary for viral replication. An adaptive, multicenter, open label, randomized, phase 2/3 clinical trial of favipiravir compared with standard of care I hospitalized patients with moderate COVID-19 was conducted in Russia. Both dosing regimens of favipiravir demonstrated similar virologic response. Viral clearance on Day 5 was achieved in 25/40 (62.5%) patients on in the favipiravir group compared with 6/20 (30%) patients in the standard care group ($p = 0.018$). Viral clearance on Day 10 was achieved in 37/40 (92.5%) patients taking favipiravir compared with 16/20 (80%) in the standard care group ($p = 0.155$) (Ivashchenko, Dmitriev, Vostokova, Azarova, Blinow and Egorova, 2020).

COVID-19 Vaccines

As of early April 2021, the World Health Organization (WHO) estimates that there are at least 96 vaccines in clinical development and 186 in preclinical development around the globe (Rauf and Laube, 2021). The following are the vaccines that have been given the nod by the FDA:

Pfizer-BioNTech Vaccine: As of 11th December, 2020, the FDA gave its first emergency use authorization for a coronavirus vaccine to Pfizer-BioNTech, making it available to people age 16 and older (U.S. Food and Drug Administration, 2020). Research published at the beginning of April 2021 involving 927 confirmed symptomatic cases of COVID-19 demonstrated that the Pfizer vaccine was 91.3 percent effective against COVID-19. The inoculation proved to provide protection for at least six months, and was 100 percent effective in preventing severe disease as defined by the CDC, and 95.3% effective against severe COVID-19 as defined by the U.S. Food and Drug Administration (FDA) (Liu, Liu, Xia, Zhang and Fontes-Garfias, 2021).

Johnson & Johnson Vaccine: The Johnson & Johnson (J&J) single-shot vaccine is the newest weapon in the fight against COVID-19 in the United States. On 27th February, 2021, the FDA issued emergency use authorization for the J&J vaccine for people age 18 and older (U.S. Food and Drug Administration, 2021). Johnson & Johnson shared phase 3 trial data indicating that its Janssen vaccine had an overall efficacy rate of 72 percent in the United States. The vaccine demonstrated complete protection against COVID-related hospitalization and death and was shown to be 85 percent effective at preventing severe disease (Rauf and Laube, 2021).

Moderna Vaccine: On 18th December, 2020, the FDA granted emergency use authorization for the Moderna vaccine for people age 18 and up. The FDA go-ahead came after clinical trials in which 14,134 volunteers received the vaccine and 14,073 received placebo. The vaccine was 94.1 percent effective in preventing COVID-19 disease among these clinical trial participants, with 11 cases of COVID-19 in the vaccine group and 185 in the placebo group. At the time of the analysis of these 196 COVID-19 cases, none in the vaccine group and 30 in the placebo group were classified as severe.

Women Involvement in Fighting Covid-19 and the Implications

The COVID−19 pandemic is creating a profound shock worldwide, with different implications for men and women. Women are serving on the frontlines against COVID−19, and the impact of the crisis on women is stark (Adema, Clarke and Queisser, 2020). Women face compounding burdens: they are over-represented working in health systems, continue to do the majority of unpaid care work in households, face high risks of economic insecurity (both today and tomorrow), and face increased risks of violence, exploitation, abuse or harassment during times of crisis and quarantine. The pandemic has had and will continue to have a major impact on the health and well-being of many vulnerable groups. Women are among those most heavily affected (OECD, 2020). Women are at the forefront of the battle against the pandemic as they make up almost 70% of the health care workforce, exposing them to greater risk of infection, while they are under-represented in leadership and decision making processes in the health care sector. Wenham, Smith and Morgan (2020) noted that majority of women plays nursing roles in the frontlines against the virus. Moreover, due to persistent gender inequalities across many dimensions, women's jobs, businesses, incomes and wider living standards may be more exposed than men's to the anticipated widespread economic fallout from the crisis. Among seniors, globally, there are more elderly women living alone on low incomes – putting them at higher risk of economic insecurity during this pandemic (Adema, Clarke and Queisser, 2020). Women are playing a key role in the health care response to the COVID−19 crisis. Women constitute an estimated two-thirds of the health workforce worldwide, and while globally they are under-represented among physicians, dentists and pharmacists, they make up around 85% of nurses and midwives in the 104 countries for which data are available (Boniol, 2019). In OECD countries, almost half of doctors are women (OECD, 2019). Women also make up the overwhelming majority of the long-term care (LTC) workforce – just over 90%, on average across OECD countries. Despite the fact that the majority of the health care workforce is female, women still make up only a minority of senior or leadership positions in health (Downs, 2014).

Roles of Female Nurses in Combating Covid-19

Female nurses play a very important role both locally and globally. They are on the front lines caring for these patient's "day in and day out" (Anzalone, 2020). They are the ones to see what is working, as well as things that can be done differently to provide more effective and efficient care, and offer suggestions for improvement. In the case of pandemic occurrence (COVID-19), female nurses play an integral role in mitigating the spread of such infectious disease, and as well ty to accomplish one objective which is to reduce patient deaths and slowing the spread of the disease in such a way that they are able to manage the numbers of patients when the surge hits. And this puts them at high risk of contracting such diseases including COVID-19 (Chimbwanda, 2020). In expanding nursing's role in responding to global pandemics, the American Academy of Nursing asserts that nurses are prepared for the leadership roles in policy decisions of health systems and government agencies, and can prepare for, identify, respond to, and direct recovery efforts from global pandemics that require an informed, internationally coordinated response (American Academy of Nursing, 2017). Jordan (2020) highlighted the following steps on how nurses fight coronavirus daily which include:

Patient Care: While researchers battle viruses like SARS-CoV-2 in laboratories and clinical studies, nurses are facing this threat head on, directly interacting with countless patients who may be carrying the virus. Their role is critical to the entire health care operation and pandemic response—processing, assessing, and triaging patients quickly and efficiently.

Managing Medical Supplies & Equipment: Another role that nurses play during a pandemic is maintaining supplies of medical equipment and protective items such as masks, gloves, and hand sanitizer. These resources can easily become scarce during a crisis, and nurses play a vital role in safeguarding these supplies from theft or hoarding.

Enforcing Sanitation: Proper sanitation is one of the most important factors in turning the tide of a pandemic. Viruses such as COVID-19 can remain on surfaces for hours, sometimes longer, making regular and thorough cleaning a life-or-death necessity. Because nurses work so closely and so regularly with patients, it often falls on them to enforce sanitation rules and procedures.

Working Overtime: During a pandemic, nurses can expect to work longer shifts, especially as the virus spreads and healthcare workers themselves fall ill, leaving gaps in the workforce. In some certain cases, nurses are being asked to return to work from retirement to help fill the need. Other nurses, particularly ones whose age puts them at additional risk of COVID-19, have found other ways to help—such as manning the emergency health lines for hospitals and clinics (Jordan, 2020).

Spreading Knowledge & Awareness: Nurses must teach others everything they practice, from symptom awareness and sanitation to disease prevention. As the frontline of healthcare, nurses bear the additional responsibility of educating their patients and the general public on how to stay healthy and prevent the virus from spreading.

Roles of Female Community Health Worker in Combating Covid-19

As COVID-19 disproportionately affects the poor and vulnerable. Female community health workers are poised to play a pivotal role in fighting the pandemic, especially in countries with less resilient health systems (Ballard, Bancroft, Nesbit, Johnson, Holeman and Foth, 2020). Wiah, Subah, and Varpilah, (2020), point out the following roles of community health workers to interrupt the covid-19 pandemic such as:

- ✓ Leverage evidence-based behaviour change strategies and widely accessible mobile technologies to educate communities regarding signs, symptoms and transmission routes. Lead skill building for personal preventive measures such as social distancing, hand hygiene, coughing/sneezing into elbows and wash interventions.
- ✓ Organise hand hygiene stations in communities and health facilities and mobilise local residents to use them.
- ✓ Support, lead or reinforce community and facility-based infection prevention and control measures, such as construction of triage areas and use of PPE (Boyce and Katz, 2019).
- ✓ Community health workers with supervision from nurses, identify signs and symptoms in community members, support safe collection of samples in communities and health facilities, and facilitate rapid transport to laboratories for analysis, thus reducing risks of nosocomial transmission.
- ✓ Enter alerts into community events-based surveillance systems.
- ✓ Communicate rapidly and effectively to residents in COVID-19 areas, including delivering health information in a tailored, context-specific and relevant way28 while combating the spread of misinformation.
- ✓ Support contact tracing, symptom reporting and monitoring of contacts of patients with COVID-19 to ensure access to testing and treatment for those who develop signs and symptoms (de Vries, Rwemisisi, Musinguzi, Benoni, Muhangi, de Groot, Kaawa-Mafigiri and Pool, 2016).

- ✓ Monitor patients for clinical deterioration and support rapid referral of individuals who require hospitalisation, reinforcing links between the health system and communities.
- ✓ Support preparation of health systems and communities for the eventual introduction of still-in-development COVID-19 vaccines and treatments, including outreach to high-risk groups.

Roles of Female Medical Doctors in Combating Covid-19

Female doctors form an essential part of an effective response to the COVID-19 pandemic. They have critical roles in diagnosis, containment and treatment, and their commitment to treat despite increased personal risks is essential for a successful public health response (Anantham, McHugh and O'Neill, 2008). Despite the complexity and challenges inherent in the health care system and the unprecedented demands in and disruptions of clinical practice created by the coronavirus disease 2019 (COVID-19) pandemic, it remains a privilege to be a female medical doctor. This privilege comes with many responsibilities, including a responsibility to reflect on the profession and address the entrenched dysfunctional ways of the work involved in medicine (Brubaker, 2020). According to Lee, Loke and Ng (2020), some of the key roles played by female doctors in a pandemic, drawing examples from the current novel coronavirus disease 2019 (COVID-19) pandemic and past experiences include; (1) triage and treatment of suspected or confirmed cases, (2) resource allocation, (3) surveillance and monitoring, (4) preventive care, (5) provision of affordable care and (6) ongoing delivery of primary care to patients with other acute illnesses and chronic diseases (Lee, Loke and Ng, 2020). Similarly, World Health Organization (2020) noted the following roles and responsibilities of medical doctors in a pandemic, includes:

- ➢ assuming overall responsibility to ensure that all necessary preventive and protective measures are taken to minimize occupational safety and health risks;
- ➢ provide information, instruction and training on occupational safety and health, including;
  - ▪ Refresher training on infection prevention and control (IPC); and
  - ▪ Use, putting on, taking off and disposal of personal protective equipment (PPE);
- ➢ provide adequate IPC and PPE supplies (masks, gloves, goggles, gowns, hand sanitizer, soap and water, cleaning supplies) in sufficient quantity to healthcare or other staff caring for suspected or confirmed COVID-19 patients, such that workers do not incur expenses for occupational safety and health requirements;
- ➢ familiarize personnel with technical updates on COVID-19 and provide appropriate tools to assess, triage, test and treat patients and to share infection prevention and control information with patients and the public (WHO, 2020).

Roles of Female Pharmacists in Combating Covid-19

Female pharmacists worldwide are integral part within the healthcare system, and since the emergence of this viral outbreak they have experienced a challenging situation and hard time like never before. They are currently working in the frontline with other healthcare providers in fighting the battle of COVID-19 outbreak, and they are undertaking everything they can do to support their patients in all possible areas (Mukattash, Jarab, Mukattash, Nusair, Farha, Bisharat and Basheti, 2020). Keeping in view the previous contributions and current extended pharmacy services, pharmacists are involved at different levels in disease control and prevention, patient care, and treatment during the COVID-19 turmoil.

Role of Community Pharmacists:

- Disease Education and Counseling
- Education on Hand and Respiratory Hygiene
- Encouraging Social or Physical Distancing
- Telepharmacy Services
- Ensuring Appropriate Medicine Inventory
- Effective Medicine Supply System to Customers
- Medication and Disease Management
- Pharmacovigilance at the Community Level
- Provision of Facial Masks and Educating on Donning/Doffing Techniques
- Busting the Myths and Neutralizing the Misleading Narratives
- Active Surveillance of Suspicious Cases
- Extemporaneous Preparation of Sanitizers and Disinfectants

Role of Hospital Pharmacists:

- Inventory Management
- Pharmacovigilance at the Hospital Level
- Drug Utilization Evaluation (DUE)
- Active Member of the Clinical Trial Team
- Antimicrobial Stewardship Program
- Hospital Pharmacists' Educational Services
- Provision of Authentic and Updated Research Data
- Disinfection and Sterilization Services
- Development of Clinical Guidelines and Treatment Algorithms

Role of Industrial Pharmacists:

- Member of COVID-19 Research and Development
- Improving Access to Medicines
- Monitoring of Reported Adverse Drug Reactions (ADRs)
- Urgency to Comply with Legal Requirements

Pharmacists are known for reducing the work load of public health professionals during a pandemic outbreak. Being an easily available, accessible, and trustworthy professional, pharmacist ran vaccination plans and increased the vaccine awareness which ultimately resulted in vaccination acceptance rates (Singh, Smith-Ray and Taitel, 2020). Pharmacists provided patient-centered therapy with stringent infection control measures during the severe acute respiratory syndrome (SARS) outbreak. They delivered the medicines not only in wards but also in quarantine areas. Pharmacists have proved themselves as a valuable member of the team in health crisis by providing information services and patient care (Chin, Chant, Tanzini and Wells, 2004).

Conclusion

Corona virus infection called COVID-19 (Corona Virus Disease 2019) was appeared in Wuhan city, China. It was discovered in late December 2019. It has spread to almost all countries in the world and transmitted rapidly among humans, just in a few months. The characteristics of COVID-19 viruses are different from those in SARS and MERS, including the speed of spread and the severity of symptoms. As COVID−19 pandemic is creating a profound shock worldwide, with different implications for men and women. Women are serving on the frontlines against COVID−19, and the impact of the crisis on women is stark. They play different integral roles in combating covid-19 and reducing it spread both as a pharmacist, community health worker, medical doctor as well as being a nurse.

Recommendations

1. The government should map out a plan of action to counter the short and long-term effects of the coronavirus on women keeping in view their health, livelihoods and domestic violence. For this purpose, large-scale consultations with women organizations especially with government, civil society, and women rights bodies need to be initiated.

2. A disaster plan for pandemics should be kept in place that aims to guide nurses before, during, and after any health-related crises.

3. In restructuring existing health services to respond to the current public health crisis, it is important that governments, public health bodies, and policy makers review existing services and make full use of any unrealized potential among women working in various health sectors.

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