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COMMENTARY

Corona Virus Disease 2019 Pandemic Contributed to Pregnancy Devastating Outcomes in Low Income Countries

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ABSTRACT

Corona Virus Disease 2019 (COVID-19) pandemic has been a public health threat of the 21st century. This pandemic has unexpectedly occurred, and countries have faced challenges to implement the preventive strategies against this unexpected killer. Pregnancy is a critical state among women, and special care should be provided to prevent pregnancy related complications as early as possible. COVID-19 pandemic has restricted services provided to pregnant women due to some prevention measures and treatment programs. Previous studies reported the high increase of obstetric complications among women infected or ever infected by COVID-19. Depression, suicidal intention, low quality of life during pregnancy, gestational hypertension and gestational diabetes mellitus, the premature rupture of membranes, miscarriage, preterm delivery, edema, maternal death, and hypoxia and other respiratory conditions were observed among women infected by COVID-19. Strategies for protecting pregnant women during pandemics should be enhanced to prevent pregnancy related complications and maternal death. There should be home health care nurses and midwives working with community health workers to assist pregnant women at home. Governments shoulddevelop policies and plans about maintaining maternal and child health during pandemics requiring travel ban and other prevention measures.

INTRODUCTION

At the end of December 2019, an outbreak of Corona Virus Disease was declared in Wuhan, China. As its spread was quick, the outbreak of the disease became a worldwide pandemic, declared by the World Health Organization (WHO) on March 11, 2020.[1]Corona Virus Disease, clinically occurs as severe pneumonia like symptoms with high fever and uncontrolled body weakness, was given a name of 'coronavirus disease 2019' (COVID-19) by WHO. COVID-19 is caused by the severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2) invading the human vascular and respiratory systems.[2] The virus can be transmitted via droplets and air.[3]

Up to date, COVID-19 has contributed tolow living standards and 6,078,162 people havelost their lives from 470,783,178 cases that occurred worldwide.[4]In Africa, the first case was reported in Egypt on February 14, 2020. It was speculated that Africa would be the most affected continent due to the lack of standardized health infrastructure, human resource, and poverty.[5] However, the prevention measure that were put in place like lockdown, contact tracing, and COVID-19 testing contributed to the control and prevention of the epidemic.[6]

As the spread of COVID-19became critical, both high income and low and middle income countriesstruggled to put in place preventive measures including social distancing, the shift from face to face conferences to virtual conference, testing, screening, mask wearing, use of hand sanitizers and lockdown.[7]However, low income countries were directly forced to go to lock down to prevent the high spread of the pandemic which could lead to the failure of the control of the pandemic.[8]COVID 19 Pandemic has impacted important health services including maternal and child health services that contributed to adverse maternal and child health outcomes when delayed.[9]

Low and middle-income countries faced the double burden of the preparedness of COVID 19 policy prevention and increasing maternal and child health service during the pandemic. Maternal and child health care is still critical in low and middle income countries and not accessible for millions of women.[10]COVID 19 pandemic is likely to have contributed to the three main delays associated with adverse maternal and neonatal outcomes. These delays include, delay in the decision to seek care because of COVID-19 prevention measures that required permission in some cases,delay in arrival at a health facility because of the transport problem,since-

motorcycles, bicycles, and cars were all banned, and the delay in obtaining adequate treatment because hospitals and health centres were busy dealing with COVID-19 patients. Travel ban was a barrier to the work of community health workers on maternal and child health, and could leadto the negative maternal health outcomes.[11]

Pregnancy is a critical period and may expose womento the development of severe clinical conditions after coronavirus invasion due to pregnancy relatedimmunosuppression.[12]COVID-19 has contributed to the high fatality rate and other pregnancyrelated complications.[13]In 2004, during SARS pandemic, the rate of complications and deaths werehigh among pregnant women compared to non-pregnant women.[14] Similarly, adverse health complications were reported among women in gestation during the pandemic of H1N1influenza in 2009.[15]

The Centre for Disease Control and Prevention (CDC) has recommended that there should be rigorous precautionary measures to protect pregnant women against the COVID-19 pandemic due to their relatively low immunity that cannot deal with pregnancy and infections.[16,17] Previousstudies reported that there is an association between pregnancy immune-suppression and increaseof adverse health outcome when infected with viruses.[18]

Pregnancy outcomes during COVID-19 Pandemic

Previous studies about perinatal health during COVID-19 focused on pregnancy outcomes associated with SARS-CoV-2. The pregnancy outcomes such as caesarean section[19], foetal distress, preterm birth[20], and maternal death were observed among women infected by SARS-CoV-2 during pregnancy.[21]Researchers have investigated the negative consequences of COVID-19 pandemic on the mental health of pregnant women and foetal outcomes.[22]The fear of COVID-19 was reported to be associated with depression, suicidal intention, and the low quality of life during pregnancy.[23]

Other studies reported the high obstetric complications among pregnant women including few maternity places due to many COVID-19 patients in hospitals, high risk of pregnancy complications, and other maternal and neonatal outcomes. The COVID-19 pandemic contributed to gestational hypertension and diabetes mellitus (GDM)[24], and premature rupture of membranes among women.[25] During the pandemic, a higher admission rate of women was reported in intensive care unit compared to the period before the pandemic occurred. During lockdown, increased institutional stillbirth rate was reported across the world.[26]

Some studies reported the pregnancy outcomes associated with the COVID-19 pandemic. The study conducted by Li et al. reported four pregnant women out of seven with SARS-CoV-2 who faced spontaneous miscarriages.[27]In the Second/third-trimester, some studies reported that pregnant women with SARS were exposed to higher rate of maternal mortality.[14] Serious complications like miscarriage, preterm delivery, and small for gestational age neonates have been observed.[28]Systemic infections and inflammatory states contributed to preterm delivery among COVID-19 virus infected women. Pregnant women infected by COVID 19 virus should be highly considered for the mode and timing of delivery to avoid the comorbidity related obstetric complications.[29]

Challenges facing pregnant women in low-income countries during COVID-19 pandemic

Some countries in Africa have not established the new modalities that pregnant women can attendpregnancy related health care particularly intrapartum care that requires a period of hospitalization. Some other countries with good health maternal care system were not prepared because the pandemic occurred suddenly.[30] There was a dilemma of how safe deliverywas at the hospital during the pandemic and how possible the COVID-19 prevention measures such as wearing a face mask during the active phase of labour, hand washing, and social distancing could apply in the labourrooms.[31] This has contributed topregnancy related complications caused by the delay in seeking care resulting from the fear of the unknown source of SARS-CoV-2 transmission,lack of accessing care because of the national lockdowns and the delay in care provision resulting from the lean staff at the health facility maternity units.[32]

The women are required to attend antenatal care regularly at health centres, and hospitals under qualified and skilled health care professionals. This routine antenatal care became sharply curtailed since COVID 19 pandemic eruptedwhen most countries were not prepared to fight against it, which affected the foresight on essential care including pregnancy, intrapartum and postpartum care for mothers from pregnancy to childbirth. The fear of SARS-CoV-2 infection have been a barrier to pregnant women to attend antenatal care, and no special counselling and guidelines have been provided to prepare them and reassure them of their safety and that of their unborn baby.[33] If women skip the routine antenatal care, the aims of care during pregnancy are grossly affected. The aim of antenatal care includes the early detection and treatment of pregnancy related complications. Examples of such complications include urogenital tract infections, toxaemias of pregnancy, communicable and non-communicable disorders of pregnancy, and obstetric conditions complicating pregnancy and birth such as haemorrhage, obstructed and prolonged labour that could predispose to intrauterine infections.[34]

Community health workers provide home based care for pregnant women, but following the lockdown, they have not been authorised to carry out home visiting, to prevent the spread of SARS-CoV-2 infection.[35] Pregnant women have developedpsychological outcomessuch as depression, anxiety, and distress resulting from the lack of pregnancy related counselling during COVID-19 pandemic.[36] The nutrition of a pregnant woman is hampered by food supplies at the family unit, and if the head of the family is in employment that has been suspended temporarily due to COVID-19Pandemic, it may have contributed to nutritionalanaemia among pregnant women which predisposes them to preterm labour, low birth weight, maternal malnutrition, and weight loss which is a cause of early pregnancy loss.[37] Pregnant women need social support, motivation, and s-

ecurity. During lockdown, it has not been possible for pregnant women to receive social support which contributed to stigma among this group with critical health conditions.[38]

Staying at home contributes to poor circulation and persistent lower limb oedema among pregnant women, which is a cause ofadverse pregnancy outcomes including a poor quality of life related to discomfort due to lack of exercises and simple movements.[39] Pregnant women need good aeration and physiologically take deeper and more breaths to maintain normal oxygen circulation for themselves and the growing foetus. The fact that they sometimes suffer from breathing conditions, there are no special masks provided to help them maintainoxygenation without feelings of suffocation especially during the labour intensive second stage of labour.[40]

Masks could reduce the amount of oxygen that enters the lungs, and this could be the cause of negative respiratory health outcomes among pregnant women due to hypoxia and subsequent respiratory acidosis. Persistent low-level oxygen exposes women to congenital birth defects similar to the risk of smoking cigarettes during pregnancy. Persistent foetal hypoxia predisposes to complications such as microcephaly and mental retardation in the new born.[41] There was no special transport support provided by health facilities for emergency cases of pregnant women which could lead to maternal death due to interventional delays as discussed earlier.[42]

Evidence of the rise of pregnancy devastating outcomes during COVID-19 pandemic

During COVID-19 pandemic, the increase of pregnancy devastating outcomes was observed. In Nepal, the study conducted on the effect of the COVID-19 pandemic response on intrapartum care, stillbirth, and neonatal mortality outcomes reported the increase of institutional stillbirth rate that changed from 14 per 1000 total births before lockdown to 21 per 1000 total births during lockdown, intrapartum foetal heart rate care decreased by 13·4%.[26] In South Africa, Thrombocytopenia and lymphocytopenia was reported among 9% and 15% of the women, respectively.[43] Some other studies reported a comparative pregnancy outcomes where 14.7% maternal deaths occurred among COVID-19 admitted women, which is 8 times women (1.8%)admitted for other health outcomes.[44]

During this pandemic, adverse mental health outcomes among pregnant women were observed. In a study carried out on mental health outcomes in Nigeria among pregnant women, thesevere and extremely severe depression wereobserved in 7.2% (n=33) and 6.4% (n=29) of women, respectively. The study also reported that 3.3% (n=15) and 7.7% (n=35) of participants experienced severe and extremely severe anxiety, respectively. About 23% (n=105) of the participants have developed severe stress while 16.7% (n=76) experienced extremely severe stress.[45] A qualitative study carried out in Kenya reported the high maternal outcomes among womenrefugees. There was an increase of home delivery, and the delay of antenatal and post-natal services among refugees.[46] A study carried out in Nigeria reported that more than 10% pregnant women admitted for COVID-19 had difficulty in breathing, while 54.6% had caesarean section.[47]

In Romania, a study reported that 78.8% parti-cipants (n=439) mental affected by the pandemic. About 45.8% had the fear that their pregnancy could be affected by the virus.[48]

THE WAY FORWARD

Governments of low-income countries should establish policies to support pregnant women in sudden situations like COVID 19 pandemic. Phone based counselling could be provided during lockdown, health education could be emphasised especially on how pregnant women should behave during lock down. This can be provided through the ministry of health trough radio and television programs. Community health volunteers should be allowed to work closely with pregnant women in their community units to make sure that pregnant women are safe during the lockdown. Special care should be provided for pregnant women especially for mask wearing with the healthcare worker having to wear a double mask and allow the woman to take deep breaths that maintains oxygen saturation levels within normal particularly during labour.

Community midwifery or health visiting by nurses and midwives is a practice that has a chance for revival as health care systems leverage on the COVID 19 restriction whereby the provider meets women in their households to prevent their unnecessary travel to the hospital which can expose them to COVID 19 infection, hypoxia and other nosocomial infections.

Health visiting also improves the ability for personalised care and early diagnosis of conditions that are risky for the mother and foetus. If home visiting becomes a viable option, then home based nurse or midwife should be tested for COVID 19 before they make the home visit. Nutritional support should be emphasized for pregnant women during lockdown. Some families have suffered from poor nutrition even before COVID 19 pandemic in least developed countries. This is because COVID 19 pandemic has complicated the way of food availability and the supply chain for essential food commodities at the dining table. This has exposed pregnant women to poor nutrition and poor birth outcomes. Families need health education for decision making personal preferences and choices on contraception, pre-conception care, pregnancy, and labour care during lockdown for better reproductive outcomes.

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