

Pregnancy and Postpartum in the Context of Covid-19

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ABSTRACT

As the COVID-19 pandemic unraveled in 2020, the world came to a standstill. However, millions of women continued to become pregnant, making what is usually a cherished event a matter of concern and immense duress for the mothers. What ensued was a series of emotional, socio-cultural and physical repercussions on pregnant mothers, making especially COVID-19 positive mothers highly vulnerable to the negative impacts in all these aspects. This article aims to explore these repercussions in the light of emerging evidence from ongoing research alongside how healthcare systems responded to overcome the barriers in provision of care to pregnant mothers. Various prenatal and postnatal implications are elaborated upon, including the possibility of vertical transmission of COVID-19 to the fetus, the importance of institutional delivery and breastfeeding. Moreover, the distribution of risk for COVID-19 is discussed to shed a light on how ethnicity, income and resource-poor settings can act as determinants for increased mortality, gender-based violence and depression in pregnant mothers during the pandemic.

Keywords: Covid-19; Pregnancy

INTRODUCTION

COVID-19 continues being a progressive pandemic, wreaking fatal consequences on people across the globe. Despite the difficulties of being amidst a pandemic, millions of women are becoming pregnant around the world and pregnancy is undeniably a vital event in each of those women's lives. WHO (World Health Organization) reported that during pregnancy COVID positive mothers had milder symptoms than COVID positive non-pregnant women. While during delivery COVID positive mothers faced more severe complications compared to their peers and needed intensive care. It was also found that mothers with comorbidities, like diabetes, hypertension and/or being overweight, might have severe complications at the time of delivery. Moreover, these mothers are more likely to have stillbirth and premature delivery; although, new-born deaths were found to be low.[1]

Program managers in reproductive healthcare programs across the globe are concerned about the couples who are planning to have babies in this pandemic situation. It is their recommendation that couples during this time ensure informed decision-making while weighing the risks associated with pregnancies during COVID, and if they choose to, defer the conception until the COVID becomes more controllable. In this case, long term contraceptive methods such as implants, and Intrauterine Device (copper T) might be beneficial.

Little is known about the effect of COVID-19 on pregnancy and

postpartum. The virus makes pregnant women's bodies more vulnerable partly because of an unequal adjusted immune system and partly because the target site of the disease are lungs, which naturally require to function at a larger capacity during pregnancy. Recently, a meta-analysis by Weiss et al. focused on the global burden of the disease but no clear evidence was generated on the impact of COVID-19 on foetuses. [2] Pregnancy is an immune-tolerant condition of the body so that the foetus would normally not be rejected. It was initially thought that the virus cannot cross through the placental barrier and vertical transmission of the virus from mother to foetus does not occur. However, reports have emerged indicating the presence of SARS-COV-2 virus in the placenta detected by immunohistochemical and molecular analysis [3] as well as a fully recorded case study that demonstrated transplacental transmission of the virus to a neonate. [4] Mulvey et. al further confirmed in their histopathology investigation that vascular malperfusion might exist in the placenta. [5]

Some studies have found elevated anxiety and depression among COVID positive pregnant mothers. For instance, Lebel et al. found 10% and 25% prevalence of anxiety and depression respectively among COVID positive pregnant mothers which is associated with an increased risk of preterm birth, postpartum depression, and behavioural difficulties in children. [6] Another study even found higher rates of anxiety and depression among COVID

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positive pregnant mothers with prevalence of 64.5% and 56.3% respectively.

This study added that factors associated with anxiety and depression included working status, physical activities status, discomfort with hospital visits, and access to information about COVID-19 from health workers. [7] Moreover, other situational factors that could potentially be involved might be social distancing, lack of social support, and financial constraints. In such cases, telemedicine and virtual support groups might be helpful ways to extend support and minimize the isolation these mothers experience.

It is recommended for COVID positive mothers to have institutional delivery because they might require additional care, especially if their physical condition deteriorates suddenly. According to Ashokka et al. women in pregnancy are at greatest risk when they undergo labour, even more if they are acutely ill. Moreover, key decisions about their health condition during labour must be made depending on adequate maternal oxygenation, stabilisation of maternal blood pressure and any indication of maternal/foetal compromise which can be best monitored in an institutional setting. [8] However, it becomes further challenging to arrange institutional delivery for a mother during this pandemic situation especially for those located in a low income setting. In a recent collaborative study conducted by IEDCR-icddr, in Dhaka, the capital of Bangladesh, it was reported that among 3,277 households 553 patients were symptomatic whereas 817 individuals were asymptomatic based on IgG and IgM evaluation. [9] Therefore, asymptomatic pregnant mothers in a low-income country setting might have financial constraints and other additional difficulties arranging for institutional delivery in urgent needs.

The Government of Bangladesh has started following guidelines for protecting pregnant mothers. Pregnant mothers are advised to take 8 antenatal care visits but 4 of these visits can be taken via telemedicine. There should be 4 postpartum visits after delivery to ensure maternal and neonatal health, but these also can be taken by telemedicine unless there are some complications of mothers or new-born babies. If the family members have to step outside the household frequently, the mothers should wear a mask when coming into contact with them. [10]

During the postpartum period, the major health care components are establishment of breastfeeding, preparation for immunization of the new-born baby, family planning, and contraception choice of the couple, particularly if the baby is not exclusively breastfed. Therefore, the newly delivered mother needs to be connected with a designated health care staff so that she can take appointments in advance, consequently reducing the waiting time at the health care facilities. At present there is not enough evidence to conclude vertical transmission of COVID-19 through breastfeeding. However emerging evidence indicates that the possibility cannot be completely discounted. In a review by Rorigues et al. it was found that 4 out of 92 breast milk samples tested positive for SARS-CoV-2 by RT-PCR. Other indicators of the possibility of vertical transmission included intrauterine samples among which 11.9% of placenta (n = 8/67), 1.8% of amniotic fluid (n = 1/54) and 2.4 % of umbilical cord (n = 1/42) samples tested positive for COVID-19. [11] Despite the potentiality, the risk of COVID-19 in infants is generally low, with the infection being mild or the presentation being asymptomatic.

In a hospital-based study conducted in Bangladesh, 60% of the COVID positive children were found to be asymptomatic.

Moreover, among the COVID positive children 14% were zero to 28 days old and 30% were one month to one year old. [12] While neonates are at risk of contracting infection, the effects of separation between mother and infant in the postpartum period can also be detrimental.

WHO recommends that COVID positive mothers should be encouraged to initiate and continue breastfeeding. Mothers should be counselled that the benefits of breastfeeding substantially outweigh the potential risk for transmission of infection. It is also suggested by WHO that there are potential risks of mortality and morbidity associated with not breastfeeding, the inappropriate use of formula milk as well as lack of protective effect by absence of mother to baby skin-to-skin contact. A clear guidance plan for breastfeeding mothers was put forward by WHO which recommends practicing respiratory hygiene during breastfeeding, cleaning hands, disinfection of surfaces touched during breastfeeding, using express milk or using donor human milk. [13] It is imperative that mothers get psychological support for exclusive breastfeeding from their family, appropriately trained community-based healthcare providers and peer breastfeeding counsellors.

The pandemic has increased the risk of gender-based domestic violence in many societies. An estimated 243 million girls and women aged 15-49 globally have been subjected to physical and/or sexual violence in a period of 12 months and this number is expected to continue to increase. [14] It has also been highlighted that pregnant mothers are particularly vulnerable to becoming victims of violence in during the duress of the pandemic. [15] Domestic violence is again associated with low birthweight, preterm birth, postpartum depression, difficulty in breastfeeding and physical harm.

Diamond et. al in their work reported that a mother might face some social and system related problems during COVID. Stress, loss of income and social isolation might cause perpetuation of violence in the family. Additionally, many of the rituals related to pregnancy and postpartum might remain incomplete due to social distancing leading to psychosocial impacts. [16] Due to family level barriers and social protectiveness, a newly delivered mother may also be afraid to see a formal health care facility. In summary, there may be risk of violence, insecurity, uncertainty, financial difficulty and inability to get support from others because of social detachment during the pregnancy and post-partum period in the times of this pandemic.

It has been indicated in multiple studies that COVID-19 has a geospatial distribution [17] [18]. Rejaur Rahman et al reported in their study done in Bangladesh that within this highly populated country there are some pocketed areas where the burden of the disease is higher compared to the others. [19] Populations and groups which have more vulnerability, such as pregnant individuals having comorbidities and elderly people, might have additional risks of acquiring the disease. Moreover, it should be noted that ethnicity could play a role in determining pregnancy risk during COVID. A study involving 427 women conducted in the UK reported that 1 in 10 COVID positive pregnant mothers admitted to the hospital required intensive care and respiratory support. Additionally, more than half admitted (56%) were of Black and other ethnic minorities [20]. A Brazilian study also reported that maternal mortality in Black women due to COVID-19 was almost 2 times higher than that observed for Caucasian women [21]. These findings are supportive of the observations from the United States and United Kingdom that women from ethnic minority groups are

struggling to survive pregnancy and the postpartum period during COVID-19.

CONCLUSION

Pregnant mothers are advised to follow the national guideline of staying alert and safe by maintaining social distancing, practicing caution when outside the home and ensuring appropriate use of face masks. They should take additional care by keeping mobile and hydrated to reduce blood clot, be active via regular exercise, having a healthy and balanced diet, and taking essential supplements like folic acid and Vitamin D.

Although extensive research is being done across the world with urgency to understand the impact of COVID-19 on pregnancy and postpartum, there is a long way to go to truly understand the big picture. Whether timing of pregnancy and entry time of the infection in the body have different outcomes at delivery needs to be investigated by conducting large clinical trials in different geographical and cultural settings. Cohort studies might investigate long term consequences of this virus on neonates and infants.

Fortunately, we are on the verge of breakthrough for a number of incredible vaccines that can begin to bring an end to this pandemic. The fast availability and accessibility of these vaccines to pregnant women is key in alleviating their current risk. It is absolutely crucial to assess safety of these vaccines for pregnant mothers as well as ensure an equitable distribution across the world irrespective of geographic locations, socioeconomic status, culture and ethnicity.

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