



# Psychological Problems and Increased Stress in Pregnant Women during the Pandemic of Omicron Variant of COVID-19

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## Dear Editor,

The onset of COVID-19 pandemics has increased the incidence of mental health problems in the general population due to the mandates for severe health precautions such as wearing masks, quarantine, and social distancing. Besides, various factors such as altered physiology, compromised immunological functions, and susceptibility to infections have been identified that make pregnant women a unique vulnerable group.

During pregnancy, women may experience anxiety, stressfulness, and depression, which may be related to some adverse obstetrical outcomes (such as concerns over quarantine-related loneliness during and after delivery, limited access to healthcare services due to fear over affliction, increased requests for delivery by elective Cesarean section, concerns related to the frequent use of disinfectants, breastfeeding, childrearing, neonatal health, fetal death, and vaccination) or increased levels of mental health problems due to the infectious diseases such as COVID-19 pandemic (1,2).

On the other hand, the pregnant women are one of the high-risk groups in which a higher rate of infection, transmission and mortality due to COVID-19 have been reported in them and even during pregnancy, more severe disease is expected that might lead to maternal and neonatal complications, so this group needs a special care (3).

Thus, the COVID-19 pandemic has created a challenging situation that leads to anxiety and depression of the pregnant women during the pregnancy and after it, that might lead to cognitive and behavioral problems in the neonate (4). These psychological problems can be associated with other health-related problems including premature birth, hyperactivity, intrauterine growth restriction, cleft lip and palate, autism, still birth, neurodevelopmental disorders and neonatal death (2). On the other hand, the emergence of new variants of SARS-CoV-2 such as

Omicron (B. 1.1. 529), which have multiple mutations, high transmission strength, and the ability to escape the body and vaccine immunity, have the potential of increasing the psychological problems.

Omicron is an African variant of COVID-19 which vaccines and antibodies (due to previous infection in the body) are less effective on this variant. Although, like the previous variants, the receptor for this variant of virus is ACE2, the numerous mutations in the proteins of the virus, especially the spike and S2 proteins, have led to vaccine escape and increased transmissibility (5). The rapid spread of this variant, prompted the countries around the world to report the virus in a short time, and even some countries, such as Japan, took strict measures and quickly closed the country's borders to prevent the virus spreading.

The British government also encouraged people to follow the World Health Organization (WHO) protocols, such as wearing masks in crowded places such as schools and prioritized vaccination of people aged under forty and ordered a 10-day quarantine for those who were in contact with a patient (6). Although, it has been suggested that vaccines may be less effective on the Omicron variant compared with the Delta variant (due to the antigen distance), it was obligated to complete the vaccination to elevate the antibody levels that would compensate the lack of compliance (6). Besides, the reduction in IgM, IgA, and IgG binding to the Spike Ag or receptor binding domain of Omicron compared to previous mutated variants, Spike-specific FcγR2a- and FcγR3a-receptor binding, were almost maintained by the mRNA vaccines against the Omicron. Although there is a lack of potent neutralizing responses against Omicron, the maintenance of Spike-specific Fc receptor binding immunity probably led to the clearance of this variant, resulting in developing a constant protection against death and severe disease (7).

On the other hand, many countries were surprised and could not take the necessary measures to prevent

the entry and transmission of Omicron, had not finished vaccinations or had not taken enough booster doses. Thus, the inability of some governments in appropriate controlling of the pandemics, caused an increased stress, anxiety and mental problems in the civilians, especially high-risk individuals such as the pregnant women. In such a sensitive situation, where the next generation of civilians are depends on the health of pregnant women, we presented suggestions in this article that can help to reduce the psychological problems such as stress, fear, and anxiety in the pregnant women:

- The Omicron variant is specific to previous variants in terms of high spread rate and escaping the immune system, so early detection of the infected individuals and quarantining them and those in contact with them can help to reduce the spread of this variant.
- Governments should rapidly and seriously consider the implementation of the WHO protocols such as mask mandates, hand washing, social distancing, and the prohibition of unnecessary gatherings in the general population.
- Early detection of mental and psychological health-related alterations in the pregnant women by healthcare team (e.g. independent midwives, private gynecologists-obstetricians, psychologists, or family physicians,...) and taking the necessary steps as soon as possible to prevent poor maternal and fetal outcomes is crucial.
- According to the special circumstances of the pregnant women, which classify them high risk for COVID-19 infection, the healthcare systems should provide online visits for follow-ups to monitor the health condition of the pregnant women in order to reduce the attendance of these high-risk people in the infected and crowded areas of hospitals and health centers.
- Loneliness and quarantine is another important cause of psychological problems in this situation in which the psychologists can play a crucial role in reduction of these problems. In this situation, the policy makers can produce the TV programs inviting the psychologists for presentation in the national media channels about the management and control of the psychological problems of the pregnant women to reduce the need of their presence in health centers.
- Vaccination and booster doses should be prioritized for the pregnant women.
- The presence of midwives which are separated from

the teams involved in COVID-19, for home visit and follow-up of the pregnant women during the COVID-19 waves, provides a safer care and as a result creates more psychological peace for these women.

Many pregnant women around the world suffer from anxiety, depression, and fear during the pregnancy, which was exacerbated in the COVID-19 pandemic condition. Lack of definitive treatment for COVID-19, limited information about the effect of new variants on pregnant women and their infants, uncertainty about the duration of quarantine, delay in vaccination, fear of hospitalization and treatment centers are among the main causes of psychological problems during pregnancy. Although the effects of the Omicron variant on pregnancy and the relevant psychological problems are still unclear, the healthcare personnel such as midwives and psychologists should work together to prevent the probable psychological problems in the pregnant women and maintain the health of the mother and their babies.

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