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COMMENTARY

COVID-19 induced psychosocial stressors during gestation: possible maternal and neonatal consequences

Ghulam Nabi[1,2], Rabeea Siddique[1,3], Wang Xiaoyan[4], Rahim Ullah[5], Nawsherwan[6], Mengzhou Xue[1,3], Suliman Khan[1,3]

[1] Department of Cerebrovascular Diseases, The Second Affiliated Hospital of Zhengzhou University, Zhengzhou, China
[2] Key Laboratory of Animal Physiology, Biochemistry and Molecular Biology of Hebei Province, College of Life Sciences, Hebei Normal University, Shijiazhuang, China
[3] Henan Medical Key Laboratory of Translational Cerebrovascular Diseases, Zhengzhou, China
[4] Child Health Department, Maternal and Child Health Hospital of Hubei Province, Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China
[5] Department of Endocrinology, Children's Hospital, Zhejiang University School of Medicine, Hangzhou, China
[6] Department of Preventive Medicine, School of Health Sciences, Wuhan University, Wuhan, China

Correspondence: Suliman Khan and Ghulam Nabi, Department of Cerebrovascular Diseases, The Second Affiliated Hospital of Zhengzhou University, Zhengzhou, China. Email: Suliman.khan18@mails.ucas.ac.cn, ghulamnabiqau@gmail.com

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The ongoing highly infectious Coronavirus Disease 2019 (COVID-19) pandemic caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) started at the end of December 2019 in Wuhan, China [1, 2]. Currently, as of August 3, 2020, the COVID-19 has killed 689, 370 individuals and infected more than 18 million people globally [3]. Unfortunately, still, no specific treatment and vaccines are available against the COVID-19 [4]. However, to contain the spread, several key measures including safety, hospitalization, and quarantine has been suggested [5]. The COVID-19 pandemic is a serious challenge for the scientific community, healthcare authority, and the public. Currently, there is a global health emergency and public fear among the global communities. The COVID-19 affects the physical and mental health of the infected individuals; however, it can increase the psychosocial stress in non-infected individuals and can lead to serious mental health consequences, especially in pregnant women [6]. There are several typical reactions to the global pandemic including anxiety, fear, anger, loneliness, frustration, disturb wake and sleep routine, and boredom that could alter the psychological state and hormonal balance, and thus, can affect the hypothalamic-pituitary-gonadal axis [7, 8]. Furthermore, in pregnant women, gestation itself, fear of being infected, lockdown, economical, and several other stressors can cause pregnancy, neonatal, and child outcomes [9]. For example, in a cohort of 1.38 million births, the risk of schizophrenia and related disorders were higher in offspring whose mothers were exposed to adverse life events [10].

Maternal psychosocial stress (MPS) can affect fetal brain development and maturation in several ways. It includes elevated levels of maternal cytokines [11] and cortisol levels [12], abnormalities in serotonin homeostasis [13], and oxidative stress [14]. Furthermore, psychosocial stress can also alter the vaginal ecosystem and microbiome that can further disrupt fetal gut-brain axis, and ultimately, can develop neurodevelopmental disorders in the child [15].

The MPS during gestation acts as a developmental teratogen [9] and can influence fetal programming, life events, and increases susceptibility to several health disorders [16]. There are several adverse neonatal outcomes linked with the MPS including low birth weight [17], preterm birth [18], and smaller head circumference [19]. MPS can cause morphological and physiological alteration in fetal brain and increases the risk to several neurobehavioral disorders including schizophrenia, high levels of anxiety, autism, attention deficit hyperactivity disorder, learning disorders, behavioural problems, attachment difficulties, stress hyper-responsiveness, and mood disorders [16, 20, 21]. Furthermore, MPS has a higher risk to cause metabolic and immune alterations such as obesity, diabetes mellitus, hyperlipidaemia, asthma, allergic disorders, and cardiovascular diseases in offspring [16]. Fetal activity, movement, and sleep pattern [20] and pregnancy complications like gestational diabetes, pre-eclampsia, and shortened gestational length are linked with the MPS [21].

Ignoring the profound importance of the psychological health of pregnant women, ensued by the biological functioning during pregnancy, isolation, restricted social activities, troubled sleeping, lockdown, and infodemia can cause serious problems [22, 23]. Timely psychological interventions can help to resist the development of maternal mental aberrations as well as reducing the risks of fetal and child somatic and mental disorders. Therefore, clinical psychologists and psychiatrists should provide services that could help pregnant women to cope with stressful situations. However, most of the countries are lacking enough numbers of psychologists and psychiatrists to provide the utmost services to routine based cases. While the current scenario of the COVID-19 outbreak has further increased the burden. Therefore, the recruitment of more mental health professionals and training in psychological

therapies such as exposure-based therapies and resilience are necessary. In general, it is essential to provide psychoeducation for people using electronic and print media. Specifically, for pregnant women, psychological counselling should be provided either using telehealth or providing adequate numbers of clinical psychologists and psychiatrists in every hospital to assist pregnant women and neonates during this stressful pandemic.

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