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Psychopathology associated with coronavirus disease 2019 among pregnant women



We thank Dr Olabisi Ogunbiyi for the interest and the important comments on our study.¹

Our systematic review published at the end of March 2020 explored pregnancy and perinatal outcomes of coronavirus infections occurring during pregnancy, and therefore, it was limited to few case reports and series coming from China.¹ The aim of this review was to help physicians make decisions based on the limited information available at that time, and these findings could be considered as an early answer to several urgent questions raised by specialists dealing with coronavirus disease 2019 (COVID-19) during pregnancy.¹

Despite the relatively short time after the COVID-19 outbreak, a multitude of studies have been published, aiming to better elucidate the effect of this disease on both the physical and psychological health of pregnant women.^{2–5}

We agree and share Dr Olabisi Ogunbiyi's concerns about the psychological impact of COVID-19 on pregnant women.

In an Italian cross-sectional survey aimed to assess the psychological response of 100 pregnant women at the beginning of the pandemic, the COVID-19 outbreak had a moderate psychological impact on women, with more than half of the respondents rating the psychological impact as severe and more than two-thirds reporting anxiety higher than normal, mostly in women in the first trimester of pregnancy and regarding the risk of vertical transmission.⁴

Dr Olabisi Ogunbiyi's letter also highlighted other important issues that we should seriously take into account for maternal psychological well-being, such as women's concerns about inadequate prenatal care and social isolation from support networks.

It is well known that life stressors might be exacerbated by the biological, social, and psychological changes occurring during pregnancy, and external stressors, such as a global pandemic, might even increase maternal stress during pregnancy.³

Mitigation measures adopted worldwide to reduce the impact of viral spread resulted in smart working from home, less physical and no shift work, better support systems from the partner and family, and more time for exercise and proper nutrition; in this scenario, positive benefits, such as the reduction of the incidence of preterm birth, have been shown by few reports.⁶

In our opinion, all pregnant women should undergo a thorough assessment of social and psychological well-being to better understand whether interventions, such as expressive writing, meditation, mindfulness, yoga, and physical exercise, would be enough to improve psychological outcomes or whether a dedicated in-person or online counseling

performed by an experienced operator is required to improve women's psychological health.

Moreover, women should be followed up not only during pregnancy but also in the early postpartum weeks, as suggested by the American College of Obstetricians and Gynecologists in the Committee Opinion on routine postpartum care that recommends a comprehensive postpartum visit no later than 12 weeks after birth, mostly focusing on mood and emotional well-being.⁷

Finally, further research on the effect of the pandemic on pregnant women with or without severe acute respiratory syndrome coronavirus 2 infection is necessary to evaluate the risk factors associated with adverse psychological outcomes and their effects on perinatal and long-term health. ■

Daniele Di Mascio, MD

Department of Maternal Child Health and Urological Sciences and Urological Sciences
Sapienza University of Rome
Rome, Italy

Gabriele Saccone, MD

Department of Neuroscience, Reproductive Sciences and Dentistry
School of Medicine
University of Naples Federico II
Naples, Italy

Francesco D'Antonio, PhD

Centre for Fetal Care and High-Risk Pregnancy
Department of Obstetrics and Gynecology
University of Chieti
Chieti, Italy

Vincenzo Berghella, MD

Division of Maternal-Fetal Medicine
Department of Obstetrics and Gynecology
Sidney Kimmel Medical College
Thomas Jefferson University
833 Chestnut
Philadelphia, PA 19107
vincenzo.berghella@jefferson.edu

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REFERENCES

1. Di Mascio D, Khalil A, Saccone G, et al. Outcome of coronavirus spectrum infections (SARS, MERS, COVID-19) during pregnancy: a systematic review and meta-analysis. *Am J Obstet Gynecol MFM* 2020;2: 100107.
2. Breslin N, Baptiste C, Gyamfi-Bannerman C, et al. Coronavirus disease 2019 infection among asymptomatic and symptomatic pregnant women: two weeks of confirmed presentations to an affiliated pair of New York City hospitals. *Am J Obstet Gynecol MFM* 2020;2: 100118.
3. Traylor CS, Johnson JD, Kimmel MC, Manuck TA. Effects of psychological stress on adverse pregnancy outcomes and

nonpharmacologic approaches for reduction: an expert review. *Am J Obstet Gynecol MFM* 2020;2:100229.

4. Saccone G, Florio A, Aiello F, et al. Psychological impact of coronavirus disease 2019 in pregnant women. *Am J Obstet Gynecol* 2020;223:293–5.

5. Preis H, Mahaffey B, Heiselman C, Lobel M. Pandemic-related pregnancy stress and anxiety among women pregnant during the coronavirus disease 2019 pandemic. *Am J Obstet Gynecol MFM* 2020;2:100155.

6. Berghella V, Boelig R, Roman A, Burd J, Anderson K. Decreased incidence of preterm birth during coronavirus disease 2019 pandemic. *Am J Obstet Gynecol MFM* 2020;2:100258.

7. ACOG Committee Opinion no. 736: optimizing postpartum care. *Obstet Gynecol* 2018;131:e140–50.

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