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Mental Health in Pregnant Women in the COVID-19 Era

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Dear Editor,

Coronavirus disease (COVID-19) is caused by a new virus from the coronavirus family, which first appeared in late December 2019 in Wuhan Province, China (1). The virus was officially announced by China on January 20, 2020, and then spread rapidly to other countries throughout the world (1). Following the spread of the virus, its negative physical and psychological effects gradually emerged. Through the years, experiences of the world in the face of the crises caused by plague pandemics over several different years (2), Spanish flu in 1918 (3), severe acute respiratory syndrome (SARS) in 2002 (4), H1N1 in 2009 (5), middle-east respiratory syndrome (MERS) in 2012 (6), and Ebola virus disease (EVD) in 2014 (7) indicate the psychological, physical, economic, and social effects of pandemics on people. All the studies investigating the issue of pandemics have indicated that vulnerable groups suffer more anxiety than others (2-7).

Pregnant women are among the most vulnerable groups during pandemics due to various physical and psychological reasons (3-6). Pregnancy causes immunological, physiological, and psychological changes in women. Studies have shown that pregnant women are prone to respiratory infections (8, 9). Numerous specific issues of pregnancy, symptoms, physical changes, body fitness, physiological, social, and emotional changes, financial problems, parental worries, relationships with others, body image and medical problems, anxiety about childbirth, and worries about the health of the baby can be mentioned as important psychological issues and a source of stress in pregnant women (10). Any stressful issue, exacerbation of stress, anxiety caused by pregnancy, and fear of the COVID-19 pandemic can affect the health of mothers and babies (11). Prenatal stress can influence many physical, mental, and social dimensions of pregnant women and the unborn baby's health, increasing the risk of autism and brain developmental disorders, schizophrenia, obesity, insulin resistance, hypertension, preterm delivery, low birth weight, gestational diabetes, preeclampsia, hyperemia, lack of follow-up prenatal care, and mental disorders at birth (12, 13). Additionally, there are many factors that can influence pregnant women's health during the COVID-19 era, such as fear of contracting the virus, the risk of vertical transmission of the infection to the infant, enhanced risk of human-to-human infection transmission, reduction of social support due to social distancing regulations, limited daily or part-time activities, being required to be at work, fear of the closure of medical and non-medical facilities, low level of education, financial problems, lack of accurate information and misinformation about COVID-19, the spread of the virus across the residential area, and concerns about being poisoned with disinfectant solutions (14, 15). A study investigated perinatal depressive and anxiety symptoms during the COVID-19 outbreak among 4124 pregnant women in 25 hospitals in 10 Chinese provinces. It was mentioned in this study that the crisis caused by the COVID-19 could be a risk factor for psychological disorders in pregnant women; Therefore, the provision of psychological interventions may be particularly useful to prevent destructive outcomes in women, fetuses, and infants (16). Another retrospective study on the impacts of infectious diseases like SARS in 1184 pregnant women reported stress, anxiety, and depression as risk factors for mothers' and their infants' health (17). Another study investigated

the perception of pregnant women about the SARS epidemic and its impacts on them in Hong Kong. In the recent study, 980 pregnant women were examined, and the prevalence of anxiety among pregnant women was reported to be high and related to their social, economic, and physical health factors. Moreover, this study emphasized the role of midwives in the psychological adjustment of pregnant women (18)

According to the national guide for midwifery and childbirth services in Iran in 2016, the mental health examination of pregnant women is advised during the provision of prenatal care at the 6 - 10th, 16 - 20th, 31 - 34th, 35 - 37th, and 38 - 40th weeks of pregnancy to check the mother's complete history and especially, the risk factors of psychological problems, psychiatric disorders, and domestic violence (19). However, due to the recent critical situation of the COVID-19 pandemic, the World Health Organization has suggested close physical and mental health screening for pregnant women at shorter intervals (20). Among the important reasons for shorter screening intervals in critical situations, some are more important than others, like mental health before pregnancy and before the onset of the crisis, current physical health status, number of children, planned or unplanned pregnancy, history of domestic violence, previous experiences of crises, and prior pregnancy experiences, history of infertility, access to social support, place of residence, economic situation, familial relationships, and the most important, history of contact with a person infected with the COVID-19 (19, 21). Considering the importance of mental health during the epidemic period, some countries have launched preventive and therapeutic interventions for mental disorders. The successful experiences of psychological interventions during epidemics such as SARS and influenza accelerated the implementation of instructions for starting psychological interventions during the COVID-19 pandemic (3, 4). Accordingly, China was the first country to take extensive measures in this area. Setting up mental health teams, training medical staff, providing professionals with specific guidelines and articles for different groups of people, broadcasting educational packages and videos for the general public in the national media, conducting appointments and counseling about self-care on the phone, and establishing online or in-person mental health screening centers during the COVID-19 pandemic (22). These measures were provided to all people, especially vulnerable ones. A study in China reported that psychological interference based on dialectical behavior therapy reduced depression, anxiety, and stress in a pregnant woman during late pregnancy and early childbirth (23).

In Iran, on February 19, 2020, the Ministry of Health officially announced the entry of the COVID-19 disease to the country (24). Afterward, extensive actions were performed to prevent and control the disease. In the field of mental health management, mental health teams were formed to improve the mental health of the general public (25-27). In order to protect pregnant women, the hospitals receiving COVID-19 patients were separated from other health facilities (25). For example, in Mazandaran province, one of the northern provinces of Iran, from February 24 to May 2, seven hospitals were responsible for admitting pregnant women diagnosed with COVID-19 (26). Psychological interventions for the general public were initially presented as a guideline, and then the guideline was presented to medical teams, including nurses and psychiatrists. In some cases, in addition to these instructions, initial training was provided also to health teams (27). Prenatal care and psychological screening started to be carried out virtually and in-person in a shorter period of time than before. In the case of the presence of COVID-19 symptoms in the pregnant women referring to prenatal clinics, the resident health team present in the hospital would be assisted to perform the necessary psychological interventions until full recovery to maintain mothers' calm and mental health (25-27).

Because of the great importance of mental health, psychological measures still need to be expanded and completed. It is recommended that the necessary interventions for pregnant women be developed, specifically in two stages: before and after childbirth, both directly (to pregnant women) and indirectly (to families and all active medical staff in hospitals). Because smart facilities (ie, mental health online education and screening services) are not accessible to low-income groups of society, broadcasting educational videos about mental health on the national media, such as radio and television, can also be particularly helpful. Finally, it is suggested that in addition to online psychological screening, all pregnant women be checked during admission to the hospital.

Footnotes

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References

1. Azizi M, Kamali M, Moosazadeh M, Aarabi M, Ghasemian R, Hasannezhad Reskati M, et al. Assessing mental health status among Iranian healthcare workers in times of the COVID-19 pandemic: A web-based cross-sectional study. *Brain Behav*. 2021;**11**(8). e2304. doi: 10.1002/brb3.2304. [PubMed: 34333852]. [PubMed Central: PMC8413818].
2. Huremović D. Brief History of Pandemics (Pandemics Throughout History). *Psychiatry of Pandemics*. 2019. p. 7–35. doi: 10.1007/978-3-030-15346-5_2.
3. Del Rio C, Hernandez-Avila M. Lessons from previous influenza pandemics and from the Mexican response to the current influenza pandemic. *Arch Med Res*. 2009;**40**(8):677–80. doi: 10.1016/j.arcmed.2009.12.005. [PubMed: 20304256].
4. Maunder R, Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, et al. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *Cmaj*. 2003;**168**(10):1245–51.
5. Reskati MH, Shafizad M, Aarabi M, Hedayatizadeh-Omran A, Khosravi S, Elyasi F. Mental health status and psychosocial issues during Nationwide COVID-19 quarantine in Iran in 2020: A cross-sectional study in Mazandaran Province. *Curr Psychol*. 2021:1–17. doi: 10.1007/s12144-021-02011-z. [PubMed: 34253946]. [PubMed Central: PMC8263010].
6. Jack A. Why the panic? South Korea's MERS response questioned. *BMJ*. 2015;**350**:h3403. doi: 10.1136/bmj.h3403. [PubMed: 26108610].
7. Shultz JM, Cooper JL, Baingana F, Oquendo MA, Espinel Z, Althouse BM, et al. The Role of Fear-Related Behaviors in the 2013-2016 West Africa Ebola Virus Disease Outbreak. *Curr Psychiatry Rep*. 2016;**18**(11):104. doi: 10.1007/s11920-016-0741-y. [PubMed: 27739026]. [PubMed Central: PMC5241909].
8. Longman RE, Johnson TR. Viral respiratory disease in pregnancy. *Curr Opin Obstet Gynecol*. 2007;**19**(2):120–5. doi: 10.1097/GCO.0b013e328028fdc7. [PubMed: 17353679].
9. Mor G, Cardenas I. The immune system in pregnancy: a unique complexity. *Am J Reprod Immunol*. 2010;**63**(6):425–33. doi: 10.1111/j.1600-0897.2010.00836.x. [PubMed: 20367629]. [PubMed Central: PMC3025805].
10. Yuksel F, Akin S, Durna Z. Prenatal distress in Turkish pregnant women and factors associated with maternal prenatal distress. *J Clin Nurs*. 2014;**23**(1-2):54–64. doi: 10.1111/j.1365-2702.2012.04283.x. [PubMed: 23305376].
11. Xiang Y, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*. 2020;**7**(3):228–9. doi: 10.1016/s2215-0366(20)30046-8.
12. Chuang LL, Lin LC, Cheng PJ, Chen CH, Wu SC, Chang CL. The effectiveness of a relaxation training program for women with preterm labour on pregnancy outcomes: a controlled clinical trial. *Int J Nurs Stud*. 2012;**49**(3):257–64. doi: 10.1016/j.ijnurstu.2011.09.007. [PubMed: 21968280].
13. Glover V. Maternal depression, anxiety and stress during pregnancy and child outcome; what needs to be done. *Best Pract Res Clin Obstet Gynaecol*. 2014;**28**(1):25–35. doi: 10.1016/j.bpobgyn.2013.08.017. [PubMed: 24090740].
14. Carbone L, Mappa I, Sirico A, Di Girolamo R, Saccone G, Di Mascio D, et al. Pregnant women's perspectives on severe acute respiratory syndrome coronavirus 2 vaccine. *Am J Obstet Gynecol MFM*. 2021;**3**(4):100352. doi: 10.1016/j.ajogmf.2021.100352. [PubMed: 33771762]. [PubMed Central: PMC7985679].
15. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*. 2020;**395**(10227):912–20. doi: 10.1016/s0140-6736(20)30460-8.
16. Wu Y, Zhang C, Liu H, Duan C, Li C, Fan J, et al. Perinatal depressive and anxiety symptoms of pregnant women during the coronavirus disease 2019 outbreak in China. *Am J Obstet Gynecol*. 2020;**223**(2):240 e1–9. doi: 10.1016/j.ajog.2020.05.009. [PubMed: 32437665]. [PubMed Central: PMC7211756].
17. Lee DT, Sahota D, Leung TN, Yip AS, Lee FF, Chung TK. Psychological responses of pregnant women to an infectious outbreak: a case-control study of the 2003 SARS outbreak in Hong Kong. *J Psychosom Res*. 2006;**61**(5):707–13. doi: 10.1016/j.jpsychores.2006.08.005. [PubMed: 17084150]. [PubMed Central: PMC7094779].
18. Ng J, Sham A, Tang PL, Fung S. SARS: pregnant women's fears and perceptions. *British Journal of Midwifery*. 2004;**12**(11):698–702. doi: 10.12968/bjom.2004.12.11.16710.
19. Torkestani F, Abedini M, Radpooyan L, Rahimi Ghasabeh. S, Hadipour Jahromi L, Bakhshandeh M. *National Guide to Providing Midwifery and Childbirth Services*. 3rd ed. Tehran, Iran: Ministry of Health and Medical Education; 2017.
20. Reilly N, Kingston D, Loxton D, Talcevska K, Austin MP. A narrative review of studies addressing the clinical effectiveness of perinatal depression screening programs. *Women Birth*. 2020;**33**(1):51–9. doi: 10.1016/j.wombi.2019.03.004. [PubMed: 30954483].
21. Azizi M, Behboodi Moghadam Z, Aarabi M, Elyasi F. COVID-19 Pandemic and Domestic Violence Against Women: Implications of Strategies to Protect Women. *Iran J Psychiatry Behav Sci*. 2021;**15**(2). doi: 10.5812/ijpbs.112460.
22. Liang T. *Handbook of COVID-19 prevention and treatment*. The First Affiliated Hospital, Zhejiang University School of Medicine,; 2020.
23. Huang JW, Zhou XY, Lu SJ, Xu Y, Hu JB, Huang ML, et al. Dialectical behavior therapy-based psychological intervention for woman in late pregnancy and early postpartum suffering from COVID-19: a case report. *J Zhejiang Univ Sci B*. 2020;**21**(5):394–9. doi: 10.1631/jzus.B2010012. [PubMed: 32425005]. [PubMed Central: PMC7110264].
24. World Health Organization. *Coronavirus Disease 2019 (COVID-19) Situation Report -69*. World Health Organization,; 2020.
25. Mazandaran University of Medical Sciences. *[List of admission centers for pregnant women with corona]*. Mazandaran University of Medical Sciences,; 2021. Persian. Available from: https://www.mazums.ac.ir/corona.
26. Ministry of Health and Medical Education. *[Psychological Interventions Program for Pregnant Women in Coronavirus Crisis New Virus]*. Ministry of Health and Medical Education,; 2020. Persian. Available from: https://behdasht.gov.ir/.
27. Psychialrists. *[Guide to Telephone Psychological Interventions in Corona Epidemic in Iran]*. Psychialrists; 2020. Persian. Available from: http://ravanpezeshkan.com/.