

The Research Progress in Postpartum Depression in the Context of COVID-19

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Abstract

COVID-19 first began in December 2019 and has spread across the globe for nearly three years, and so far COVID-19 has caused more than 600 million infections and more than 6 million deaths worldwide. In terms of human health, COVID-19 as a respiratory disease, in addition to the direct damage to physical health caused by the disease itself, also has a direct or indirect impact on people's mental health, according to WHO reports that in the first year of the COVID-19 epidemic, the incidence of mental illnesses such as depression and anxiety increased by more than 25%, increasing the number of patients by about 1 billion people, and postpartum women are one of the most important populations, with postpartum depression being the most common. Studies from around the world have shown that the prevalence of COVID-19 affects postpartum women and postpartum depression to varying degrees and shows a diversity of influencing factors. In this paper, the effects of COVID-19 on postpartum women and postpartum depression around the world and the related responses and effects are reviewed in the hope of providing a reference for clinical management of postpartum depression in the COVID-19 setting.

Keywords

COVID-19, postpartum depression, postpartum women, mental health

1. Overview of postpartum depression

Postpartum depression (PPD) is a common puerperal psychiatric disorder that is characterized by a number of symptoms such as insomnia, pessimism, and, in severe cases, impairment of the ability to care for the newborn, including persistent and severe depression during the puerperium. Some studies have shown [1] that the prevalence of PPD is 10-20%, while it may vary from region to region. Some studies have shown [2] that postpartum women are more likely to suffer from depression compared to non-pregnant women and that the perinatal period is a vulnerable period for depression. It is now generally believed that the causes of PPD include environmental factors, abnormal hormone levels, and genetic factors [3], and the role of the environment is particularly prominent in the context of the global epidemic of COVID-19. PPD has become one of the most prominent diseases of COVID-19 affecting women worldwide today, and has a huge impact on the daily life and physical and mental health of women worldwide, so sorting out and understanding the global The extent of the impact of COVID-19 on PPD and the measures to address it are crucial

2. The effect of COVID-19 on PPD

In Kenya, May Sudhinaraset et al. [4] conducted a follow-up survey of 2332 women, 1197 from patients with

outpatient visits in 2019 and 1135 from patients after March 16, 2020, which showed that the proportion of positive PPD screening results was higher in women who delivered during COVID-19 than in pre-COVID-19 women who gave birth were 2.5 times more likely to have positive PPD results than those who gave birth before COVID-19. In Japan, Soichiro Obata et al. [5] used an online questionnaire to survey 7775 pregnant or postpartum women (4798 pregnant women and 2977 postpartum women) and classified them into high, medium, and low risk categories according to the prevalence of the disease in their area. In Belgium, Tzanka Vatcheva et al. [6] conducted a follow-up survey of the Edinburgh Postpartum Depression Scale (EPDS) in mothers presenting with preterm delivery, with 34 cases in the study group (during the COVID-19 epidemic) and 108 cases in the control group (before the COVID-19 epidemic), showing that the prevalence was significantly higher in the study group than in the control group, and that the risk of PPD risk was associated with the COVID-19 epidemic. In New Jersey, USA, Michael J. McFarland et al. [7] conducted a follow-up survey of postpartum women with EPDS and then used linear regression models to analyze changes in the prevalence of PPD before and after the COVID-19 epidemic in central New Jersey, showing higher levels of depressive symptoms during the COVID-19 epidemic than before the COVID-19 epidemic. In Oregon, USA, Hanna C. Gustafsson et al. [8] administered periodic questionnaires to 393 women (247 during pregnancy and 146 in the first postpartum year) during the COVID-19 epidemic and showed that the prevalence of PPD during the COVID-19 epidemic was 45%, and in addition researchers found that subclinical levels of depression over time subsequently decreased. In the UK, Victoria Fallon et al. [9] recruited 614 mothers (12 weeks \leq) by sampling methods and collected data including EPDS, STAI-S and showed a higher prevalence of clinically relevant depression and anxiety compared to self-reported depression and anxiety diagnoses and pre-COVID-19 epidemic data, and it is worth noting that the study was conducted It is noteworthy that the study was conducted at a time when social distance blocking measures were introduced in the UK. In Turkey, Gulden Guvenc et al. [10] surveyed 212 postpartum women with EPDS, STAI-I, etc. The prevalence of PPD increased significantly during the COVID-19 epidemic, and its anxiety level correlated with patients' level of concern about COVID-19. Meysam Safi-Keykaleh et al. [11] conducted a meta-analysis of 24 articles A meta-analysis was conducted and showed that the results of this study showed a relatively high prevalence of PPD in women during COVID-19, and similar conclusions were reached in meta-analyses by Kamran Hessami et al. [12] and Qianqian Chen et al. [13]. In China, Peiqin Liang et al. [14] conducted a questionnaire survey of 864 women at the beginning of the COVID-19 epidemic, which included EPDS and related factors, and the results showed that about one-third of women had PPD.

However, not all findings show an increased prevalence of PPD in COVID-19 epidemic settings, and the COVID-19 epidemic was positively associated with PPD. In Israel, Gali Pariente et al. investigated 223 women who gave birth during COVID-19 and showed that the incidence of PPD was negatively associated with the COVID-19 epidemic.

There are also studies that found the prevalence of PPD before and after the COVID-19 epidemic as not in a significant difference, or a non-significant increase. In the United States, a study by Michael E et al. [15] found little difference in the change of depression or anxiety symptoms in postpartum women in the pre- and pre-pandemic period of COVID-19, and even some postpartum women's mood improved after the implementation of some series of prevention and control measures. In Japan, Kazuya Hiiragi et al. [16] investigated the psychological status of postpartum women before and after the COVID-19 epidemic, in which $n=339$ before the COVID-19 epidemic and $n=279$ during the epidemic, and the results showed no significant change in PPD before and after the COVID-19 epidemic. In France, Sylvie Viaux-Savelon et al. [17] conducted a telephone follow-up of 164 postpartum women at the beginning of the COVID-19 epidemic, including EPDS, and showed that the incidence of PPD during the COVID-19 epidemic (16.5%) was similar to that before the epidemic [18] (13%), with insignificant differences, but 20.7% of the population exhibited depressive symptoms. In the Netherlands, Boekhorst et al. [19] studied 669 women with $n=401$ before and $n=268$ during the COVID-19 epidemic and showed no significant increase in the prevalence of PPD (7% before the epidemic and 8.5% during the epidemic).

The above study shows that the overall trend in the incidence of PPD during the COVID-19 epidemic across the globe or the increase is not statistically significant, but it is evident that the COVID-19 epidemic has had a negative impact on the psychology of most postpartum women with increased psychological stress. However, factors contributing to the negative impact are diverse lack of social support, concerns about their own health and that of the newborn, etc., which are described in detail next.

3. Influencing Factors

In fact, there are many causes of PPD, which can be summarized into endocrine factors, genetic factors, obstet-

ric factors, and psychosocial factors, etc., while psychosocial factors are mostly predominant in PPD during COVID-19. And psychosocial factors are divided into many, personal cognition, economic level and the economic status of the external environment, social support, social restrictions, etc. [20-21], in the environment of COVID-19 epidemic, with the development of the epidemic produced new influencing factors or the original influencing factors produced new changes and new manifestations.

3.1 Economy and Employment

A study by May Sudhinaraset et al. found that about 5-8% of respondents reported needing PPE costs during pregnancy or postpartum visits, and that those who needed to pay for PPE had higher positive rates of PPD than those who did not. 94% reported at least one employment-related effect of COVID-19, and the most reported effect was unemployment, at about 70%, and each unit increase in employment-related score was associated with a 28% increase in the odds of being positive for PPD. However, other results have emerged in the broader context, with Mira A et al. [22] showing that the incidence of PPD was lower in areas with higher mortality and unemployment due to COVID-19, which may be explained by the fact that higher unemployment and mortality rates lead to more time for family members to get together, which has a positive psychological impact on postpartum women and reduces the chance of PPD. Clayton J et al. [23] studied the risk factors of COVID-19 and PPD and showed that the proportion of positive PPD in people fed infant formula was as high as 92% compared to breastfeeding, and 73% in severe cases, and the analysis pointed out that it may be due to the decrease in social and economic support in the COVID-19 epidemic environment, and the increased economic burden caused by formula milk, thus increasing the risk of PPD.

3.2 Racism

Wanjikū et al. [24] studied the relationship between endemic racial discrimination and PPD in the COVID-19 setting and found that high levels of racial discrimination were associated with higher levels of PPD in the population, while low levels were associated with lower levels. In addition the study also found that there was also a high association between PPD and racial discrimination in COVID-19; pre-prevalence.

3.3 Prevention and Control Policy

Özlem Erten et al. [25], in a follow-up of PPD in an uninfected population in a COVID-19 setting, found that the proportion of patients with PPD was higher among those who were isolated (29.0%) than those without PPD (12.2%), and that patients isolated at home were 3.068 times more likely to have PPD than those who were not isolated at home. PW Hui et al. [26], in a study comparing maternal before and after the epidemic Pregnancy data and EPDS were compared and the study showed that the number of deliveries decreased after the outbreak and the number of EPDS scores and high scores showed an increase, especially at the beginning of the outbreak when the changes were most dramatic, and this was associated with the most severe prevention and control policies proposed at the beginning of the outbreak.

3.4 COVID-19 infection

Nabia et al. [27] studied COVID-19 positive and negative women during the COVID-19 epidemic and showed that the percentage of PPD was higher in the COVID-19 positive population (31%) than in the negative population (19%). There is no doubt that COVID-19 infection has a direct and severe psychological impact on women, which increases the risk of PPD and aggravates the disease.

3.5 Social restrictions and lack of social support

Carolina et al. [28] studied the relationship between maternal satisfaction with delivery and PPD during COVID-19, and found that the duration of delivery was shorter during COVID-19 than before the epidemic, and maternal satisfaction with delivery and care was lower than before the epidemic, which may be due to the shortage of human and material resources during COVID-19, leading to decreased satisfaction and increased stress, and also indirectly leading to Kanami et al. [29] conducted a study on the changes in the effects of relevant factors on PPD before and after COVID-19, and showed that social restrictions and lack of support from family, friends, and hospitals may increase the risk of developing PPD in the form of companionship and communication from family

and friends, and follow-up counseling from health care professionals. Shunji [30] conducted a study on postpartum women's psychological well-being during the COVID-19 epidemic. The study showed that the highest rates of PPD positivity and mother-infant relationship positivity were achieved during the period when the most severe social restrictions were imposed.

3.6 The use of personal protective equipment

Hadar et al. [31] investigated women during the first blockade of the COVID-19 epidemic and showed that those with higher scores had higher scores of EPDS and a higher risk of PPD compared to those with lower protective equipment impact scores home, and the reason for the impact [32] may be that the use of personal protective equipment may be an obstacle to communication between doctors and patients, and the psychological support patients receive would be correspondingly reduced.

4. Treatment

Alan W et al. [33] administered a web-based treatment approach called "Mum2BMoodBooster" to 27 pregnant women with EPDS scores >11 during the COVID-19 epidemic, which included mood testing, relaxation training, and reading of articles on related topics. The patients' mood improved significantly after the treatment, and the scores decreased significantly at week 8 with stable levels. In addition, 87% of patients found the treatment "moderately useful" or "very useful." Ryan J [34] recruited 403 patients with PPD (EPDS ≥ 10) during COVID-19, and 202 patients (intervention group) were treated with a 1-day treatment in addition to regular treatment. conventional treatment in addition to a 1-day interactive workshop including teaching and group discussion, and for 201 patients (control group) conventional treatment only, the results showed a more significant decrease in EPDS scores in the intervention group compared to the control group, with 87% of those who attended the workshop expressing great satisfaction and 89% saying they would recommend it to other friends. There are also exercise therapies that have good results, such as walking [35] and Pilates [36].

The above study shows the following characteristics of the treatment of PPD during the COVID-19 epidemic: psychotherapy is the mainstay and the treatment route is mostly through online networks. Obviously, in the environment of COVID-19 epidemic, the internet is a good bridge that helps patients and doctors to communicate and even treat each other. However, some current treatments still have limitations [37], such as the lack of scientificity and accuracy in diagnosis and screening, and the lack of professional training for relevant practitioners.

5. Conclusion

We can see that most studies show an increasing trend in the risk of PPD in postpartum women during COVID-19, with more prominent factors and more comprehensive effects. A Lancet article [38] points out that COVID-19 has led to a dramatic increase in depression and anxiety disorders worldwide, with women and young people being the most affected, and that the majority of pregnant and postpartum women are one of the most important populations, so we need to closely monitor information about psychological and PPD in postpartum women and actively intervene and support them. However, we also need to recognize the limitations of some of the studies. First, because of the emergent nature of COVID-19, data from before the prevalence of COVID-19 were not included in many studies, which led to a lack of control groups in the studies and limited the scientific validity of the findings. Second, COVID-19 has persisted for three years now, and during this time there have been differences in policies and differences in the evolution and associated properties of the virus in each country over the same period, making it difficult to determine the exact extent of the psychological and PPD impact of COVID-19 on postpartum women, and the study by Vera Mateus et al. [39] also suggests that these differences do exist. Third, some studies have now also identified recurrent infections [40] or long covid [41], and how this affects postpartum women and PPD should also be of interest.

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