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Title	COVID-19 pandemic and perinatal mental health: a commentary on the impact, risk factors, and protective factors
Type	Article
URL	https://clock.uclan.ac.uk/47779/
DOI	https://doi.org/10.1111/birt.12747
Date	2023
Citation	Ibiwoye, Oluwaseun Helen and Thomson, Gill (2023) COVID-19 pandemic and perinatal mental health: a commentary on the impact, risk factors, and protective factors. Birth. ISSN 0730-7659
Creators	Ibiwoye, Oluwaseun Helen and Thomson, Gill

It is advisable to refer to the publisher's version if you intend to cite from the work.
<https://doi.org/10.1111/birt.12747>

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COMMENTARY

COVID-19 pandemic and perinatal mental health: A commentary on the impact, risk factors, and protective factors

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1 | INTRODUCTION

Inequalities in access to mental health services are prevalent and often overlooked.¹ The consequences of mental health inequalities include continued unnecessary suffering and premature death, increased stigma and marginalization, lack of investment in mental health workforce and infrastructure, and limited or lack of treatment for people suffering from these conditions.¹ Since the COVID-19 pandemic, evidence suggests a further increase in global mental health inequalities, particularly among women, and those who are younger and have a lower income.² While pregnancy and childbirth are known to increase the risk of emotional instability and vulnerability to poor mental health,³ these risks have been magnified during the recent pandemic, particularly for certain population groups.

Evidence reported prior to the pandemic highlights that up to 20% of women and childbearing people can experience poor mental health during the perinatal period, with the costs of perinatal mental illness estimated at 8.1 billion per 1-year birth cohort.⁴ There are serious consequences of poor mental health during pregnancy and in the postpartum period. Before childbirth, these include risk of abortions, intrauterine growth restriction, and preterm labor.⁵ Postnatally, poor maternal mental health can affect

mother–infant relationships which in turn impacts the social, cognitive, and emotional development of the child.⁶ There are also intergenerational risks with children of mothers who had depression and/or anxiety during pregnancy being at higher risk of such illnesses later in life.⁵

During the COVID-19 pandemic, there were concerns about the increased susceptibility of women and childbearing people to a relapse of mental illness or new onset of mental illness. Prior to the pandemic, perinatal depression and anxiety ranged between 10% and 25%.^{6,7} However, there is growing evidence from recent studies of the increased prevalence of both conditions since the onset of the pandemic.⁶ While these increased risks are an obvious cause for concern, this work has also highlighted key protective factors that help maintain and support positive mental health.

Here, we report on three systematic reviews (Table 1) that consider the impact of the COVID-19 pandemic on perinatal mental health^{8,9} and draw on some of the wider literature to help explain observed variations. Overall, this work suggests that the prevalence of clinical depression has been about one in four pregnant women and clinically significant anxiety in nearly one in every three pregnant women. The reviews also highlight a longitudinal relationship with an increase in clinically significant depression and anxiety as the pandemic continued. Moreover,

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TABLE 1 Systematic reviews included in the commentary.

Review	Population	Country/continent of studies included in each review	Outcomes
Tomfohr-Madsen et al. ⁸	Pregnant women ≥18 years	East Asia, West Asia, North America, Europe, South Asia	a. Prevalence of anxiety and depression during the pandemic
Hessami et al. ⁹	Pregnant and postpartum women	Canada, Italy, China, Turkey, Greece	a. Mean EPDS Score during the pandemic b. Difference in mean EPDS and STAI scores pre-pandemic and during the pandemic
Iyengar et al. ¹⁰	Pregnant women (up to 1.5 years postpartum)	Belgium, Iran, USA, Qatar, China, Turkey, Ethiopia, Spain, Italy, Singapore, Canada, Hong Kong, Brazil, Ireland, Israel, Japan, United Kingdom, Norway, Switzerland, the Netherlands, Argentina, Poland, Greece, Sri Lanka, Pakistan	a. Prevalence of mental health outcomes in pregnant or postpartum women during the COVID-19 pandemic b. Mental health outcomes in pregnant or postpartum women before vs. during the COVID-19 pandemic, mental health outcomes in pregnant vs. nonpregnant women during the COVID-19 pandemic, mental health outcomes in pregnant or postpartum women with vs. without COVID-19 c. Perinatal mental health outcomes during COVID-19 as a function of pregnancy-related factors, cultural or geographical factors, severity of anxiety or depression, and factors not examined elsewhere d. Modeling of intervention studies of perinatal mental health outcomes during the COVID-19 pandemic

evidence from the reviews highlights that factors such as social support, exercise, and access to quality prenatal health care are associated with better mental health in women and childbearing people.

This work is important for understanding how the COVID-19 pandemic impacted perinatal mental health and to help prioritize interventions to ameliorate the negative consequences on the mother and child, and in preparation for future crises.

Using the JBI checklist for systematic review, the reviews included in this commentary met most of the criteria assessed as highlighted in Table 2. Two areas where the evidence was unclear for the reviews by Tomfohr-Madsen et al.⁸ and Hessami et al.⁹ related to which critical appraisal tool was used and whether two or more reviewers were involved in the critical appraisal process.

In the following sections, we highlight the findings from the systematic reviews and draw on wider literature to consider the impact of the pandemic on depression and anxiety, as well as the identified risk and protective factors.

2 | DEPRESSION

Evidence from the three reviews shows a longitudinal increase in the prevalence of depression as the pandemic continued. Although there were some mixed findings

with some studies reporting reduced depression symptoms or no changes in symptoms, in the majority, pregnant and postpartum women reported higher levels of depression during the pandemic compared to before.^{9,10} COVID-19 status impacted perinatal mental health with a higher level of depression in pregnant and postpartum women that tested positive for COVID compared to those that tested negative¹⁰ possibly due to concerns of vertical transmission from mother to child.¹² Furthermore, the review by Iyengar et al.¹⁰ highlighted that more women had depression in the first trimester of pregnancy during the pandemic compared with the second and third trimesters. The authors argue that this may be because women paid more attention to improving their mental health in the later trimesters of pregnancy.¹⁰ In the same review, there were mixed findings when pregnant women were compared to nonpregnant women with some studies included in the review reporting increased depression especially during the isolation/lockdown period while others reported decreased depression symptoms.¹⁰ These variations may be explained by a qualitative study that reported that some mothers benefited from the social distancing rules as the opportunities to work from home and spend more time with their families helped to promote family bonding.¹³ However, another study highlighted that 43% and 61% of women, respectively, had clinically significant depression and anxiety during the

TABLE 2 Quality of the reviews included in the commentary.

Joanna Briggs Institute (JBI) checklist ¹¹	Tomfohr-Madsen et al. ⁸	Hessami et al. ⁹	Iyengar et al. ¹⁰
Is the review question clearly and explicitly stated?	Yes	Yes	Yes
Were the inclusion criteria appropriate for the review question?	Yes	Yes	Yes
Was the search strategy appropriate?	Yes	Yes	Yes
Were the sources and resources used to search for studies adequate?	Yes	Yes	Yes
Were the criteria for appraising studies appropriate?	Unclear	Unclear	Yes
Was critical appraisal conducted by two or more reviewers independently?	Unclear	Unclear	Yes
Were there methods to minimize errors in data extraction?	Yes	Yes	Yes
Were the methods used to combine studies appropriate?	Yes	No	Yes
Was the likelihood of publication bias assessed?	Yes	Yes	No
Were recommendations for policy and/or practice supported by the reported data?	Yes	Yes	Yes
Were the specific directives for new research appropriate?	Yes	Yes	Yes

first lockdown period in the United Kingdom.¹⁴ In the review by Iyengar et al.¹⁰ the authors found that the severity of depression contributed to poor outcomes, with a higher level of depression resulting in lower attachment between the mother and infant.¹⁰ This review also found that postpartum women during the pandemic were significantly more likely to report problems with bonding with their infants when compared to postpartum women before the pandemic.¹⁰

3 | ANXIETY

Like depression, the prevalence of anxiety increased longitudinally as the pandemic continued, with the maximum level reported at the peak of the pandemic.⁸ Women in the first trimester of pregnancy reported higher anxiety symptoms compared to women in the second or third trimester or postpartum period.¹⁰ Although the reason for this was unclear in the reviews, it is possibly due to concerns around early miscarriages coupled with the uncertainty of the implications of COVID-19 on pregnancy.¹⁵ A qualitative study by Mizrak et al. (2020) in Turkey showed that fear of the unknown, disruption of routine prenatal care and disruption of social life because of quarantine caused anxiety in pregnant women during the COVID-19 pandemic.¹⁶ The review by Iyengar et al.¹⁰ also reported higher pregnancy-related anxiety in nulliparous women than in multiparous women; this could be related to first-time

mothers demonstrating higher levels of childbirth-related fears.¹⁷ Women who reported higher depression symptoms also had high anxiety levels, thereby indicating high levels of comorbidities.¹⁰

Iyengar et al.¹⁰ reported that a previous history of anxiety and depression resulted in higher levels of post-traumatic stress disorder (PTSD)-related symptoms in pregnant women during the pandemic.¹⁰ There was also evidence of higher state-trait anxiety inventory (STAI) scores during the pandemic compared to before particularly in high-risk pregnancies.^{9,10} Moreover, women who delivered during the pandemic reported higher acute stress level compared to those who did not. This may be associated with reported concerns about increased stress and frustration in women that lacked companions for antenatal contacts, ultrasound scans, during labor and childbirth, and in the early postnatal period.¹⁸

4 | PROTECTIVE FACTORS

Numerous protective factors were associated with depression and anxiety (Table 3). First, as more information and guidelines on COVID-19 became available, women reported decreased depression and anxiety symptoms.¹⁰ Additionally, the review by Iyengar et al.¹⁰ highlighted that access to prenatal care information reduced the risk of poor mental health, and knowledge of the impact of COVID-19 on pregnancy was associated with less anxiety.

TABLE 3 Associated risk and protective factors for maternal mental health during the COVID-19 pandemic.

	Factors	Risk	Protective
Biological	Prior mental health problems or diagnosis	Yes	
	Pregnancy complications/high-risk pregnancy	Yes	
	Prior history of traumatic birth or abortion	Yes	
	Placenta abnormality	Yes	
	Obesity/underweight in the third trimester	Yes	
	Good sleep		Yes
	Exercise		Yes
	COVID-19-related symptoms and infections	Yes	
	Low maternal age	Yes	
Social	Availability of social support		Yes
	COVID-19-related financial stress	Yes	
	Social isolation	Yes	
	Low social support	Yes	
	Large household size	Yes	
	Marital distress	Yes	
	Single mother	Yes	
	General conflict	Yes	
	History of abuse	Yes	
	Access to prenatal care		Yes
	Fewer years of education in perinatal women and partners	Yes	
	Poor family functioning	Yes	
	Full-time employment status	Yes	
	High stress at work	Yes	
	Delayed/reduced prenatal care	Yes	
Psychological	Emotional eating	Yes	
	Pandemic-related stress	Yes	
	Knowledge of the impact of COVID-19 on pregnancy	Yes (earlier in the pandemic)	Yes (later in the pandemic)
	Lack of knowledge of the impact of COVID-19 on pregnancy	Yes	
	Partner's perceived fear of COVID-19	Yes	

Women with good social support reported less depression and anxiety symptoms.¹⁰ Like other studies, positive support from family, friends, and healthcare professionals was reported to be an important strategy to mitigate loneliness and isolation during the pandemic among perinatal women.¹³ In a UK study that explored resilience and post-traumatic growth in the transition to motherhood during the COVID-19 pandemic, women who optimized the lockdown and social distancing period by investing in exercise, new interests, and emotion-based activities such as mindfulness appeared to be better able to cope with their mental health.¹³

Findings from the review by Tomfohr-Madsen et al.⁸ suggested a geographical difference in risk with women

in East and West Asia less likely to experience prenatal anxiety and depression compared to women in North America and Europe. Although the reason for this finding was unclear, it may be explained by possible underreporting of mental health problems in perinatal women in the Asian region possibly from cultural expectations and/beliefs, and the stigma that can be associated with mental health.¹⁹

5 | RISK FACTORS

The risk factors associated with poor mental health are highlighted in Table 3. To a large extent, this information

reiterates what is already known about risk factors for poor mental health, such as depression being associated with histories of trauma, financial difficulties, and mental illness.²⁰ Social support is a well-known buffer for poor mental health,²¹ and low social support is significantly associated with risks for depression, anxiety, and self-harm during pregnancy.²² The pandemic greatly reduced social opportunities for women and childbearing people due to parent-related groups such as antenatal education classes, or mother and baby groups being stopped. The findings that low social support and social isolation were linked with an increased prevalence of depression and anxiety in perinatal women¹⁰ are therefore not a surprise. It is also important to note that these risk factors do not consider wider sociocultural factors such as unsafe or inhumane work environments, gender oppression, community violence, and structural racism that impact and perpetuate poor mental health, particularly among historically marginalized communities.²³

6 | DISCUSSION

Overall, evidence suggests an increase in poor mental health in perinatal women during the COVID-19 pandemic.²⁴ The reviews also highlight factors that could help to ameliorate poor mental health in perinatal women in future crises.

First, information sharing is key. Transparency of information and guidelines on COVID-19 was associated with reduced symptoms of anxiety and depression in perinatal women, whereas inaccurate information or misinformation exacerbated poor mental health. In a qualitative study that explored barriers to health care seeking in perinatal women and childbearing people during the lockdown, it was found that women delayed seeking help because of negative media reports.²⁵ To this end, clear information about the potential impacts of COVID and the management of maternity care during a pandemic is needed.

Social support is another key factor that can influence good or poor mental health. It is well established that lack of social support can be a predisposing, precipitating, and perpetuating factor for poor mental health in the general population.²⁶ Pregnancy is a vulnerable state for new onset or relapse of mental illness, and lack of social support during this period can further increase the vulnerability.^{3,27} Women and childbearing people who had good social support during the pandemic reported less anxiety and depression symptoms.¹⁰ In a study conducted on perinatal women in the United Kingdom, women and childbearing people reported significant benefits from parents' groups and the support bubble system where single adults living alone—or single parents whose children are under

18—could form a support bubble with one other household.²⁶ These insights highlight how consistent and available social support should be provided for childbearing women such as via Facebook, or social media groups, in the hospital and the community to help optimize emotional well-being.

Access to prenatal and postnatal mental health care is imperative. The COVID-19 pandemic further impacted access to care as many services turned to online platforms. Unfortunately, it is estimated that over 40% of the global population do not have access to the Internet²⁸ and not every woman and childbearing person is technologically savvy which impedes accessibility. Furthermore, as mental health matters are sensitive, some women and childbearing people may struggle to talk about them on the phone or during a video consultation, and remote consultations can mask symptoms pertinent for diagnosis. To this end, virtual service provision of perinatal care has the potential to be perceived as less supportive or to be risky.²⁹ This is not to say that there have not been added benefits of virtual consultations in perinatal health care. Telehealth, for example, reduces inconvenience and travel costs.³⁰ Additionally, it reduces contact with people which could reduce the risk of contracting COVID-19. Policymakers have also highlighted the cost-effectiveness potential of virtual consultations to health care provision.³⁰

Overall, the perinatal period remains a high risk time for poor mental health, especially during an ongoing pandemic. The findings from our commentary highlight the effects of COVID-19 pandemic on depression and anxiety together with the identified risks and protective factors. In the event of another pandemic, it is imperative that we learn from the COVID situation for better planning, tailored interventions, risk management, and/or prevention. Policymakers and health-care professionals should continue to work together to apply the lessons learned to future proof service provision and to help protect, support, and optimize positive mental health. However, this work also raises wider issues of mental health inequalities mostly because people cannot access the treatment they need.¹ In particular, many countries, including high resource nations lack policies to address the basic needs and rights of people with mental illness, which contributes to poor prioritization of mental health in health planning, insufficient allocation of resources, and a lack of workforce development, creating further inequalities.¹ There also needs to be further recognition of wider intersecting and structural factors that impact poor mental health such as gender oppression, racism, community violence, and abject poverty.²³ A more holistic and socioecological approach for addressing poor mental health from micro, meso, and macro perspectives are urgently needed.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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How to cite this article: Ibiwoye OH, Thomson G. COVID-19 pandemic and perinatal mental health: A commentary on the impact, risk factors, and protective factors. *Birth*. 2023;00:1-6. doi:10.1111/birt.12747