

A Literature Review of Depression in Pregnant Women during COVID-19 Pandemic

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Abstract

Background: During pregnancy, the risk of depression manifestation increased due to the major life event that happen on them. Major psychological and social change could happen due to the pregnancy, and it is associated with depression. Social isolation during pandemic causing people to get a stress as they were unable to work or engage with others. Feeling of loneliness, financial worries, fear of getting infected, and grief are some of the stressors that could lead to depression. Therefore, this literature review aimed to describe the prevalence of depression among the pregnant women during COVID-19 pandemic.

Method: The Literature Review approach was utilized in this article to analyze the depression prevalence among pregnant women during the COVID-19 pandemic. PubMed and Google Scholar were the databases used in the source search. The search terms were depression, pregnancy, and COVID-19.

Results: The total number of pregnant women that were assessed from all articles is 75410. The prevalence of depression in pregnant women during COVID-19 pandemic were vary on each country. It was ranging from less than 30% to nearly 60%. Studies revealed that the depression rate was increased compare to the pre-pandemic era.

Conclusion: The occurrence of COVID-19 pandemic had a significant impact on the depression level of pregnant women. Various factors could influence the rate of depression in this population. Depression in pregnant women could lead to many negative outcomes. Therefore, it is important to provide psychological support to these women in order to prevent unwanted events that could happen.

Keywords: depression, pregnancy, COVID-19, antenatal, mental health

1. Introduction

Depression is a mental health condition that negatively affects a person's feelings, thoughts, and acts. It can cause various mental and physical problem thus affecting someone's ability to do daily tasks (American Psychiatric Association, 2020). Some risk factors of depression include physical disease, treatments, stress, major life event, traumatic experience, and low socio-economic status (Freeman et al, 2016; National Institute of Mental Health, 2020). Depression affects roughly 20% of women at some point in their lives, with pregnancy being a particularly vulnerable time (Rich-Edwards et al., 2006). Depression during pregnancy is a public health concern for three main reasons: To begin with, the rate of depression during pregnancy is significant during the antenatal period (Pereira, 2009; Teixeira et al., 2009). Second, it is the most powerful risk factor for postpartum depression (Johanson et al., 2000; Heron et al., 2004; Wissart et al., 2005). Third, it has a negative impact on mother and fetal outcomes (Bansil et al., 2010). As a result, depression during pregnancy is a major concern (Ajinkya et al, 2013).

Depression rate during the COVID-19 pandemic was increased. It is reported by the WHO (2022), the prevalence of anxiety and depression around the world during the first year of COVID-19 era was increased by

25%. One key reason for the rise in depression is the unusual stress created by the pandemic's social isolation. This was linked to limitations on people's capacity to work, seek assistance from loved ones, and participate in their communities. Loneliness, concern of infection, pain and death for oneself and loved ones, bereavement sadness, and financial problems have all been identified as stressors that contribute to anxiety and depression. According to the latest Global Burden of Disease study, the pandemic has had an impact on young people's mental health, and they are significantly at risk of suicidal and self-harming behaviors. It also suggests that women have been affected harder than men, and that persons with pre-existing physical health illnesses like asthma, cancer, and heart disease are more likely to develop symptoms of mental illnesses (WHO, 2022).

Pregnancy is a particularly susceptible time when psychological stress can harm both mother and child. Because women report higher levels of anxiety and depression during illness outbreaks than males (Al-Rabiaah et al., 2020; Hamel and Salganicoff, 2020; Wang et al., 2020), pregnant women may be particularly vulnerable during the COVID-19 pandemic. Prenatal anxiety and sadness feelings that persist raise the chance of postpartum depression, in addition to prenatal infection and sickness rates (Bayrampour et al., 2016; Coussons-Read, 2013). Prenatal anxiety and depression symptoms can alter physical activity, nutrition, and sleep, affecting maternal mood and fetal growth (Coussons-Read, 2013).

2. Methods

The Literature Review approach was used in this paper to assess the prevalence of depression among pregnant women during the COVID-19 pandemic. PubMed and Google Scholar were the databases used for the source search. The search terms were depression, pregnancy, and COVID-19. The search for publications began by compiling topics linked to the discussion of the depression rate in pregnant women during the pandemic era. The papers for the review were chosen using the following criteria: meta-analysis, prospective study, preliminary study, cross-sectional study, cohort study, and review. Following a thorough search and evaluation, 8 high-quality articles on the subject were obtained, and the conclusions for this literature review study were collected from them.

3. Results

This study identified 8 articles through an electronic database search. The total number of pregnant women that were assessed from all articles is 75410. Table 1 Is the summary of the articles reviewed. The prevalence of depression in pregnant women during COVID-19 pandemic were vary on each country. It was ranging from less than 30% to nearly 60%. However, one study stated that there was no significant differences of depression prevalence among geographical regions. Three studies revealed that the depression rate was increased compare to the pre-pandemic era. Almost all of the studies using Edinburgh Postnatal Depression Survey (EPDS) as their parameter for assessing the depression. Other parameter that were also used in these studies include Hospital Anxiety and Depression Scale (HADS), Inventory of Depression and Anxiety Symptoms II (IDAS II), Kuwait University Anxiety Scale (KUAS), Center for Epidemiological Studies Depression Scale, Beck Depression Inventory II, Patient Health Questionnaire 9, Patient Health Questionnaire Anxiety–Depression Scale (PHQ-ADS), Depression Anxiety Stress Scales 21, Social Support Effectiveness Questionnaire (SSEQ), Interpersonal Support Evaluation List (ISEL), Godin-Shephard Leisure-Time Exercise Questionnaire.

Table 1. Summary of Articles Reviewed

Reference	Research Design	Country/Region	Parameter	Participant	Finding
Akgor et al., 2021	Prospective study	Turkey	COVID-19-related questionnaire, Hospital Anxiety and Depression Scale (HADS).	297 pregnant women	Anxiety was related with a high HADS-D score and concern about the inability to access an obstetrician in multivariate analysis, and being in aging population, having such a high HADS-A score, and concern about the difficulty of accessing an obstetrician revealed profound impacts on HADS-D score.
Ayaz et al., 2020	Review	Turkey	Inventory of Depression and Anxiety Symptoms II (IDAS II)	63 pregnant women	Before and during the COVID-19 pandemic, the mean total IDAS II score increased from 184.78 ± 49.67 (min: 109, max: 308) to 202.57 ± 52.90 (min: 104, max: 329). Obesity and patient's relationship with her husband were found to be the greatest determinants of IDAS II scores according to the multivariate linear regression study.
Hessami et al., 2020	Review	Italy, China, Canada, Turkey, Greece	Edinburgh Postnatal Depression Survey (EPDS)	7750 pregnant women	In eight studies, 7750 women who were either pregnant or postpartum and experienced depression and anxious states were included. Women had a higher total pooled EPDS score during the pandemic (SMD= 0.40, 95% CI: 0.05 to 0.86, $p = .083$) than they had in earlier non-pandemic periods, but the difference was not statistically significant. The pooled STAI score as

					a whole was, however, noticeably higher during the pandemic (SMD= 0.82, 95% CI: 0.49 1.16, p .001). In the studies that were chosen, there was no detectable publication bias (p >.05.)
Khamees et al., 2021	Cross-sectional study	Egypt	Kuwait University Anxiety Scale (KUAS) and Edinburgh Postnatal Depression Scale (EPDS)	120 pregnant women	The majority of the participants were in the late second-early third trimester and highly educated but unemployed. Women who were nulliparous and multiparous received mean KUAS scores of 45.27±10.78 and 47.28±10.62, respectively. Women who were either nulliparous or multiparous had a rather higher chance of developing depression. The number of women experiencing fear connected to the COVID-19 pandemic was significantly correlated with both their KUAS and EPDS scores (p-values for both were 0.001).
Ahmad & Vismara, 2021	Review	Argentina, Canada, China, Turkey, Iran, Qatar, Spain, Italy, Pakistan, Japan	Edinburgh Postnatal Depression Scale (EPDS), Center for Epidemiological Studies Depression Scale, Beck Depression Inventory II, Patient	17256 pregnant women	The prevalence of depression in Qatar was 39.2%, while in Turkey was 56.3%. 32.7% participants were symptomatically depressed in Iran, 58% in Spain. The prevalence of depression in Canada were 37% and 40.7%. In China, the prevalence of depression were 29.6% and 33.71%. The COVID-19 pandemic had a moderate to severe

			Health Questionnaire 9, Hospital Anxiety and Depression Scale (HADS), Patient Health Questionnaire Anxiety– Depression Scale (PHQ- ADS), Depression Anxiety Stress Scales 21		impact on pregnant women's mental health; in fact, the prevalence of psychological symptoms (mostly depression and anxiety) has dramatically increased with the spread of COVID-19.
Lebel et al., 2020	Cohort study	Egypt	COVID-19 questionnaire (infections, isolations, job loss), Edinburgh Postnatal Depression Survey (EPDS), Social Support Effectiveness Questionnaire (SSEQ), Interpersonal Support Evaluation List (ISEL), Godin- Shephard Leisure-	1987 pregnant women	The depression symptoms rate were increased compared to similar pre- pandemic pregnant cohorts, 37% reported clinically meaningful depressive symptoms. Higher levels of depression and anxiety were related with greater concern about COVID-19 dangers to the mother and baby's lives, as well as concerns about not receiving critical prenatal care, social isolation, and relationship strain as a result of the COVID-19 pandemic.

			Time Exercise Questionnaire.		
Tomfohr-Madsen et al., 2021	Review and meta-analysis	East Asia, West Asia, Europe, North America	N/A	47677 pregnant women	Depression was evaluated in 37 articles (N = 47,677), with a total prevalence of 25.6%. There were no significant differences in depression prevalence among geographical regions ($Q = 0.54$; $p < .92$).
(Durankuş & Aksu, 2020)	Preliminary study	United Kingdom	Edinburgh Postnatal Depression Scale (EPDS), Beck Depression Inventory	260 pregnant women	On the Edinburgh Postpartum Depression Scale, 35.4% of respondents ($n = 92$, case group) scored higher than 13. (EPDS). The comparison of groups based on years of education revealed statistically significant impacts of COVID-19 on social isolation, psychology, and mean Beck Depression Inventory scores (BDI)

4. Discussion

Based on all articles that had been mentioned above, it is revealed that COVID-19 could impact the mental health of pregnant women. Previous studies found that even before COVID-19 pandemic, Approximately 10% of pregnant women suffer from a mental medical issue during their pregnancy and the postpartum period (Smith et al., 2019). Pregnancy and the postpartum period have been characterized as delicate phases in a woman's life that are accompanied by major social, psychological, and physiological changes (Darvill et al., 2010; George et al., 2013). As a result, pregnant women have been classified as a high-risk population (Ahmad & Vismara, 2021). Several studies have demonstrated that the perinatal period is associated with an increased risk of psychological disorders such as depression, anxiety, and trauma-related illnesses, particularly when stress is present (Bener et al., 2012; George et al., 2013; Dennis et al., 2017). During the COVID-19 pandemic, pregnant women may indeed be concerned about their own health and the well-being of their unborn infants, and they may exhibit pregnancy, childbirth, or both fears. It is in accordance with the study conducted by Lebel et al (2020), whose found that higher levels of depression and anxiety were related with greater concern about COVID-19 dangers to the mother and baby's lives, as well as concerns about not receiving critical prenatal care, social isolation, and relationship strain as a result of the COVID-19 pandemic. Furthermore, feelings of uncertainty (typical of an outbreak) are a substantial stressor that might exacerbate

discomfort in pregnant women (Brooks et al., 2020). As a result, the COVID-19 pandemic and related factors may cause additional stress for women during perinatality, exacerbating this tendency of getting depressed (López-Morales et al., 2021).

Preeclampsia, depression, increased nausea and vomiting throughout pregnancy, premature labor, low birth weight, and a low APGAR score are all linked to anxiety and stress during pregnancy (Rubinchik et al., 2005; Alder et al., 2007; Littleton et al., 2007; Field et al., 2010; Qiao et al., 2012). Depression in pregnant women could be dangerous as it could lead to various negative outcomes, both for the mother and the fetus. Preterm birth (Alder et al., 2007; Grigoriadis et al., 2013), low birth weight, restriction of fetal growth (Grigoriadis et al., 2013; Ciesielski et al., 2015), and postnatal complications have all been linked to depression during pregnancy (Becker et al., 2016). It's also linked to hypertension, preeclampsia, and gestational diabetes (Mauri et al., 2016). Children whose moms experienced significant prenatal stress are more likely to develop cognitive and behavioral issues, as well as mental disease later in life (Brouwers et al., 2001; O'Connor et al., 2003; Huizink et al., 2004; Van den Bergh et al., 2005; DiPietro et al., 2006; Mennes et al., 2006; Weinstock, 2008; Kinsella and Monk, 2009; Glover, 2014; Stein et al., 20014). Prenatal anxiety and depression symptoms have been linked to alterations in brain structure and function in children (Sandman et al., 2015; Lebel et al., 2016; Adamson et al., 2018). Such changes in children development are understood to occur through a variety of mechanisms, including epigenetic, behavioral (e.g., lifestyle factors), hormonal (e.g., cortisol), and social (e.g., a lack of sufficient support) aspects (Beijers et al., 2014), all of which are modifiable and thus potential intervention/prevention targets.

However, the depression severity could be lowered by some mechanisms. According to several studies, higher perceived social support and support effectiveness were linked to decreased mental health symptoms and proved to be protective factors against anxiety and depression (Davenport et al., 2020; Lebel et al., 2020; Khoury et al., 2021). Similarly, a Japanese survey of 1777 pregnant women discovered that a lack of social support is highly connected to depression symptoms (Matsuhima and Horiguchi, 2020). These findings are consistent with prior research that found that increased social support was associated with decreased anxiety and depression symptoms during both pregnancy and postpartum (Gjerdingen et al., 1991; Negron et al., 2013). Life during a pandemic is known to be characterized by isolation, social distancing, restrictive measures, and limitations, all of which can lead to women experiencing a lack of emotional support from friends, relatives, and partners (Capparos-Gonzalez et al., 2020). Physical activity has also been studied in terms of its ability to protect against psychiatric disorders. Four research, in particular, found that physical activity is associated with less mental health problems. Regular physical activity during the COVID-19 pandemic is a protective factor for the emergence of anxiety and depression symptoms in pregnant women (Davenport et al., 2020; Lebel et al., 2020; Kahyaoglu Sut and Kucukkaya, 2020; Wu et al., 2020).

The prevalence of depression were vary in each regions. For example like one study in China were shown the prevalence of 29.6% whereas in Spain, it was found that the prevalence of depression was 58%. The depression rate could be vary due to several factors. Female gender was one of the most major factors of depression. These findings are consistent with the research, which implies that women are more likely than men to suffer from depression (Razzak et al., 2019). A comparable study conducted in Al Ain in 2002 discovered that lifetime rates of depression in males were 2.5% and 9.5% in females (Daradkeh et al., 2002). The findings of comparable female to male prevalence ratios around the world and across developed countries suggest that the differential risk is primarily due to biological sex differences and is less dependent on education, diet, culture, race, and other potentially confounding economic and social determinants. (Albert, 2015). Other significant risk variables identified in the study conducted by Razzak et al (2019) include stressful surroundings, financial problems, perceived poor social status, increased everyday stress leading to burnout in companies, and other cultural elements that may potentially play a significant role in producing depression. Previous studies have discovered that socioeconomic status and social support are directly related to depression symptoms (Li et al., 2007; Chou, 2009; Qiu et al., 2011).

Conclusion

The occurrence of COVID-19 pandemic had a significant impact on the depression level of pregnant women. Various factors could influence the rate of depression in this population. Depression in pregnant women could lead to many negative outcomes. Therefore, it is important to provide psychological support to these women in order to prevent unwanted events that could happen.

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