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REVIEW ARTICLE

## Postpartum depression during the Covid 19 pandemic: A systematic review

Georgia Konstantopoulou<sup>1\*</sup>, Angeliki Talantzi<sup>1</sup>, Eleni Mavroeidi<sup>1</sup>

<sup>1</sup>Department of Education and Social Work, School of Humanities and Social Sciences, University of Patras, Greece

[gkonstantop@upatras.gr](mailto:gkonstantop@upatras.gr)

### Abstract

Postpartum depression (PPD) is a serious debilitating psychiatric mood disorder and a major public health concern worldwide, as it may convey significant negative consequences to the mother and offspring. The symptoms including severe mood swings, sleep disturbances and emotional arousals, may lead to suicide or infanticide thus making the early diagnosis of postpartum depression crucial. This review based on data from studies in the United States of America, indicates that the COVID-19 pandemic lead to a significant increase of almost 36% in postpartum depression compared to pre-pandemic levels. The surge in the levels of anxiety, fear and insecurity about the future in women, the poorer medical care support, social distancing and the increased domestic violence incidents are factors linked to the raise of postpartum depression rates. Women with a history of depressive symptoms are more likely to experience a relapse, while the probability of developing postpartum depression is higher in cases where women give birth to their first child. Anxiety about the ability to make the necessary medical visits is a serious additional risk factor for the marginalized groups of women, while studies show poor quality and effectiveness of the online information sessions women received by medical or midwifery staff.

**Keywords:** Postpartum depression (PPD), COVID-19, impact of the COVID-19 pandemic

## Introduction

The spread of Coronavirus 2019 (COVID-19) from Wuhan, China to the world, quickly evolved into a global health crisis, with health systems in all countries facing pressures due to the rapid increase in infections and people experiencing fear, psychological and emotional stress. The fear of viral infection, combined with the various measures of social isolation, had a significant negative impact on people's mental health and especially on women who were pregnant or had just given birth.<sup>1,2</sup> In particular, in the postpartum period women not only have to manage the potential physical pain during the recovery period but they also have to cope with many changes especially physical, such as hormonal fluctuations, and psychosocial changes, such as the assumption of new roles in their personal relationships. These changes may lead to feelings of loneliness, isolation, anxiety, fear and ultimately Postpartum Depression.<sup>3</sup> The term Postpartum Depression (PPD) also called postnatal depression refers to the depression of postpartum women and it is one the most common mental health problems worldwide affecting about 6-20% of women.<sup>4,3</sup> Postpartum Depression usually manifests within a period of four (4) weeks after childbirth and can last for years,<sup>5,6</sup> while the symptoms include severe mood swings, sleep disturbances, emotional arousals and even suicidal tendencies.<sup>3,4</sup> It is worth noting that postpartum depression can negatively affect the mental health of women as well as the emotional development of newborns, while it has a significant negative impact on other family members and society in general.<sup>7</sup> Therefore appropriate interventions as well as

medical and counselling support should be immediate, especially in cases where the woman is already suffering from various physical or mental health problems, since then the possibility of developing postpartum depression is much higher and can have an even greater negative impact on her psyche.<sup>8</sup> Although the exact causes leading to the onset of postpartum depression are still unknown, multiple factors have been documented to influence its onset and the likelihood of psychological distress, with biological factors such as hormonal changes after childbirth, being one of them.<sup>5,3,8</sup> Factors related to social and cultural elements, a low economic family level, insufficient social/family support to the woman during pregnancy and after childbirth, the use of drugs or alcohol by the woman or the partner etc. are variables that can cause the manifestation of higher levels of postpartum depression and/or can further influence existing levels of stress/fear in women.<sup>4,7</sup> Over the past three years, a lot of studies have focused on the impact of the COVID-19 pandemic on the onset of postpartum depression, yielding however, different and conflicting results. Some studies showed that the prevalence of postpartum depression during the COVID-19 pandemic remained unchanged, while others indicated that it increased or even decreased.<sup>8,9,10</sup> Nonetheless, all studies reported a significant increase in levels of psychological stress in pregnant women as well as new mothers during the pandemic, mainly due to fear and concerns about the safety and health of the baby.<sup>3,11</sup> The quarantine, the climate of uncertainty about the course of the pandemic, social isolation and financial stress were factors that

increased the incidence of psychological stress in women and also in the general population, while for women specifically they had a positive influence on the possibility of postpartum depression.<sup>12,13</sup> Research on the impact of the COVID-19 pandemic on postpartum depression and its prevalence is ongoing and even though conclusions vary, it provides useful information for the understanding of risk factors, with a view to designing more effective management and intervention strategies to better prepare the health system for similar situations in the future. This study seeks to document, assess and present the impact of the global health crisis COVI-19 on the occurrence of postpartum depression (PPD) in women who have given birth. More specifically, this study attempts to capture and record the data related to the risk factors that led to or contributed to the increase in the occurrence of postpartum depression during Covid-19, the techniques or means which women adopted to deal with or reduce postpartum depression and the main impact of the pandemic on women who had given birth on a psychological and emotional level.

## Method

The methodology followed was to conduct a systematic literature review in the Wiley Online Library, PubMed, Elsevier, ProQuest, CINAHL and EBSCOhost databases on studies conducted between January 2021 and December 2021 using the PRISMA methodology. Keywords used were postpartum depression (PPD) during COVID-19, mental health during COVID-19, postpartum depression development factors and risks, effect of the pandemic on the psychological

stress of pregnant women. The search focused exclusively on scientific and medical articles that had participant groups within the United States of America, thus studies conducted on the impact of the global health crisis on pregnant and postpartum women in other countries were not included. In order to be included, studies had to meet overall specific selection criteria set by the researcher which in this case were a total of five (5) in number. More specifically, all studies should have used validated diagnostic, self-report questionnaires or clinically structured interviews to assess postpartum depression, they should have detailed and adequate information on the composition of the sample and the characteristics, be published in peer-reviewed scientific organizations or medical journals, and finally, they should have investigated the effects of the global health crisis on women's stress levels and postpartum depression over a period of two (2) months before birth and up to eighteen (18) months after birth. All studies should have necessarily used the Edinburgh postnatal depression scale (EPDS) research tool for the quantification of the data they presented. In cases where the data was not available or sufficient, not related to the subject of study, not resulting from the use of EPDS and not easily selectable or editable it was not considered. EndNote 20 was used (the free version of the application) to insert the articles and remove duplicates, while Excel was used for grouping and mapping the workflow. All final full texts resulting from the shortlist were reviewed against the eligibility criteria set and assessed for quality before being included in the post-analysis. Based on all of the above, the corresponding flowchart of the systematic

review search was created as presented in Figure 1.

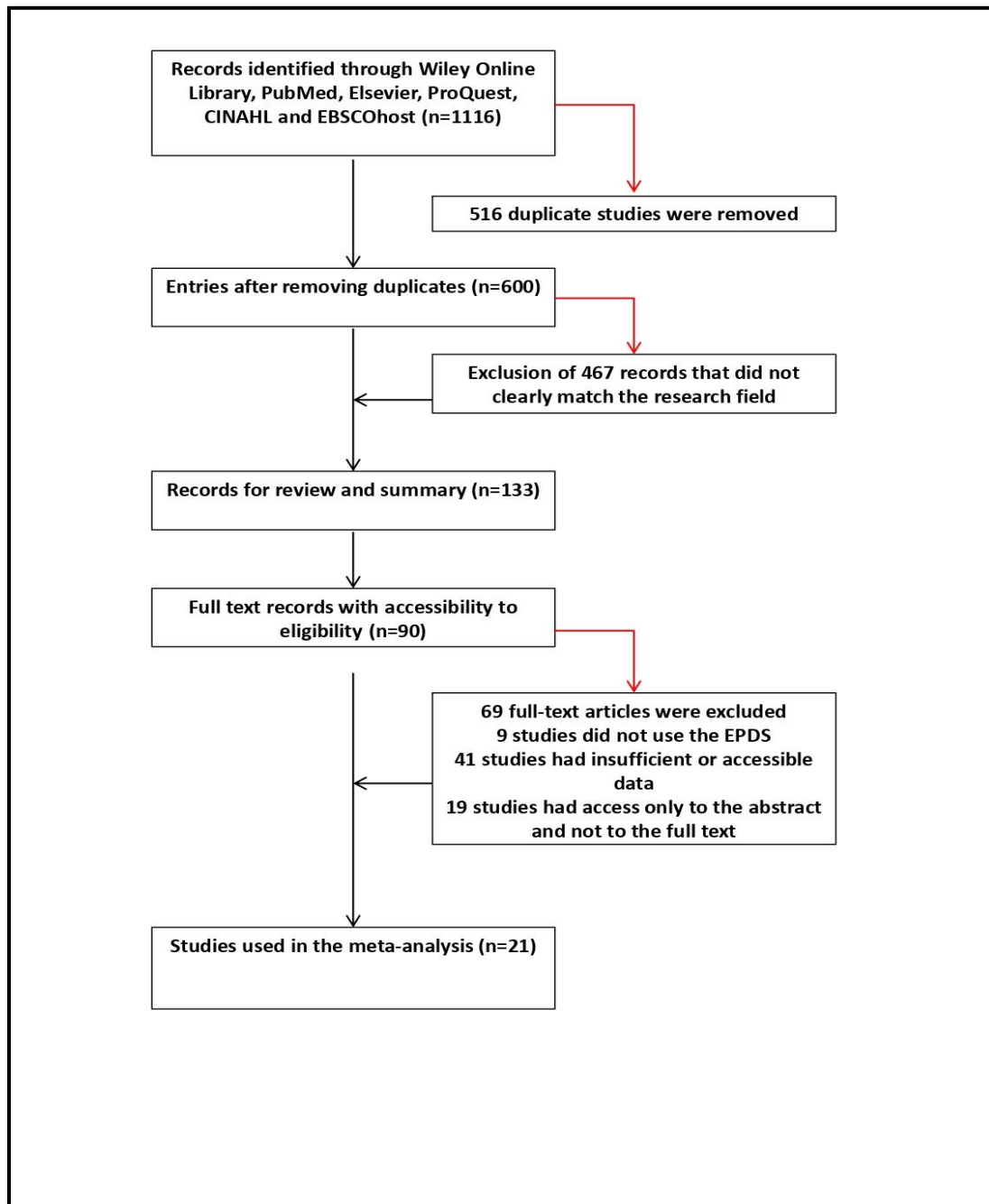


Figure 1. Flow chart

The total number of records identified in the databases used amounted to 1116 records from which 516 records were removed as they were duplicates. After removing the duplicate records, the records totaled 600, however the

final records for review and abstract were reduced to 133 as a number of 467 records did not match the research scope of this study (more specifically the records concerned studies conducted in countries other than the

United States of America). The full-text accessible and eligible records totaled 90, of which 69 were excluded for the three main reasons reflected in the chart above. The final studies used for the meta-analysis totaled twenty-one (21).

As can be seen, research on the impact of the COVID-19 pandemic on women's mental health is still at an early stage, with early reports showing higher prevalence rates related to postpartum depression and anxiety during the pandemic compared to the pre-pandemic statistical data available in both pregnant and postpartum women.<sup>14,15,16</sup> All studies show high scores on depression and anxiety in pregnant and postpartum women; however, significant variations appear depending on the woman's profile. Studies have shown that the probability of developing and experiencing postpartum depression was higher in cases where women gave birth to their first child. On the contrary in cases of women birthing their second, third, fourth, etc. child, the degree of postpartum depression and the levels of psychological stress were significantly lower despite the various effects of the pandemic, not as low however, as they were before the global health crisis.<sup>17,18,14</sup> The possible symptoms of postpartum depression such as depressed mood, severe anxiety, decreased pleasure or interest in activities, loss of appetite and weight, insomnia, fragmented sleep even when the baby is asleep, constant fatigue, decreased energy, feelings of unworthiness or inadequacy, reduced concentration or decision-making ability and recurrent thoughts of death or suicidal ideation are all factors that can lead a woman to reduce her

functional capacity as a mother and even cause physical or mental disabilities if not addressed promptly.<sup>17,19,20</sup> These symptoms could affect the interactions of the mother with the newborn and lead to significant negative effects on the healthy development of the newborn.<sup>21</sup> More specifically, postpartum depression could lead to an increased risk of reduced emotional, social and cognitive development in children, and it may also lead the mother to suicide or infanticide. Therefore, its early diagnosis during the postpartum period is crucial.<sup>22,20</sup> Healthcare providers should be able to support and educate women both before and after childbirth to enable them to better manage their emotions, anxiety and fears in order to reduce the likelihood of postpartum depression, its duration and the impact it can have on the individual.<sup>23,13</sup>

The perinatal period extends from pregnancy to the first 18-24 months after birthing and it represents a particular stage in which significant psychological, physiological and social changes occur in the lives of the parents and especially in the life of the woman. The women who may experience difficulties adapting to these new configurations have an increased risk of developing emotional disorders, while additional stressors on the level and conditions of living may negatively affect the living status and conditions of the child.<sup>13</sup> In this context, the COVID-19 pandemic and its associated limitations, posed an additional risk to the mental health of postpartum women who, as a vulnerable high-risk group, experienced a plethora of emotional concerns compared to non-pregnant women.<sup>22,21</sup> Of course, it should be

mentioned that even before the onset of the COVID-19 global health crisis, studies conducted during global crisis (e.g. the global financial crisis) had shown higher rates of psychiatric disorders and levels of postpartum depression among perinatal women compared to the general population of women.<sup>12,13</sup>

Current research agrees on the existence of two main factors increasing women's anxiety during the pandemic, with the first being fear for their own health and the health of their unborn child, and the second being the feeling of uncertainty about the future and the financial situation of the mother and the household in general.<sup>9,11,24,25</sup> Other factors which can positively or negatively influence a woman's stress and anxiety levels include the woman's level of preparation for the stage of pregnancy and the subsequent stage of childcare, the country's health care system and the quality of the woman's medical-obstetric support.<sup>26,23,22</sup> The restraint measures which led to increased concerns about family finances, reduced social support, intensified feelings of isolation and a dramatic increase in domestic violence also put a significant strain on women's psychology.<sup>27,28,29</sup> In addition, the prohibition of the father's presence during antenatal visits and in some cases (depending on the state and the respective restrictions that existed) the father's inability to attend the operating room during the birth of their infant had a negative impact on the women's emotional experience.<sup>24,27,25</sup> In ten of the twenty-one studies we reviewed women reported that the exclusion of the husband from the general process of pregnancy and childbirth resulted

in them experiencing the process with the sense of being "single mothers". The women experienced the feeling of distress that the father of the child could not feel the corresponding emotions and the feeling of insecurity because they were not able to involve the husband in the childbirth process. Nevertheless, in none of the studies were these factors linked to the development of postpartum depression, as they had a limited emotional impact in very short time frames.<sup>1,5,3,9,11</sup> Pre-pandemic epidemiological studies have generally shown that postpartum depression is the most common postpartum psychological disorder among women, with World Health Organization data reporting annual rates between 6.5% and 25%.<sup>19,20</sup> This percentage varies from country to country as it is influenced by a multitude of social, economic and cultural factors, among others. Of particular interest is the fact that only four studies included in the analysis report zero effects on prevalence levels of postpartum depression among women,<sup>1,5,3,30</sup> and only four studies report reduced levels of postpartum depression compared to levels prior to the health crisis.<sup>31,14,15,16</sup> All the thirteen remaining studies reflect a significant increase in prevalence rates of postpartum depression of 30% to 36%, highlighting a significant increase compared to pre-pandemic levels. People who have a history of depressive symptoms may be more likely to experience a relapse of postpartum depression, while additional risks such as unintended pregnancy, high-risk pregnancy, fear of childbirth, fear of surgical delivery method and the feeling of insecurity about the relationship with the woman's spouse are significant triggers for the development of

anxiety disorders and behaviors which fall within the spectrum of postpartum depression.<sup>7,8</sup> The global pandemic and the related social isolation measures, had a significant impact on the psychology of not only women, but all people in general. More specifically, in cases where the woman's partner, both during and after pregnancy, manifested anxious and insecure behaviours, was not supportive, was unconcerned about the woman's situation and generally did not participate -or participated on a low degree- in the care and nurturing of the child, the women experienced strong negative psychological feelings associated with the onset of PPD.<sup>28,29,26</sup> In addition, in cases where the husband was abusive towards the wife or the child, both verbally and physically, the women became even more isolated from the social environment and were confronted with an intensely stressful daily life which created various psychological problems.<sup>23,22,21</sup> It is worth mentioning that the results of the studies are quite ambiguous regarding the association between work status and the onset of postpartum depression during the pandemic. More specifically, some studies report that unemployed mothers during the pandemic had a higher risk of developing postpartum depression,<sup>18,14,15</sup> while others cite that working mothers who had to "lose" their jobs for a certain period of time appeared to have a higher risk of depression and psychological after-effects.<sup>22,21,17</sup> Variations also emerged in the time of unemployment of the woman, with some studies reflecting that long-term unemployment for women was not a parameter for postpartum depression, while others report short-term unemployment, more specifically the woman's unemployment

during the pandemic, as a positive variable for the onset of postpartum depression and the increase in women's depression levels.<sup>28,29,26,23</sup> All studies, however, converge on the likelihood of an increase in cases of postpartum depression and depression for women who do not have any help in caring for the newborn compared to those who receive help from the family environment in parenting their children. In the case of no help from close family, feelings of isolation and psychological distress seem to have been higher among women who had given birth to their first child, compared to those who did not receive help but already had another child before the pandemic.<sup>24,25,27</sup> The latter reported that the help they received for their firstborn child was very important on a psychological and functional level and was a positive factor in reducing the likelihood of postpartum depression and physical fatigue.<sup>9,11,30</sup> Some studies that sought to further investigate the issue, captured a positive effect on the mother's psychological state in cases where the other children in the family were autonomous and older (4-5 years and above), while in cases where they were younger (under 4 years) there were no significant positive effects on the woman's psychological state but a higher degree of physical fatigue.<sup>1,5,3,31</sup> Factors such the woman's attitude towards breastfeeding are pregnancy seem to work positively on the occurrence of postpartum depression, however studies have not shown a direct link between these factors and the pandemic as they are parameters related to and influenced by the woman's personality.<sup>1,15,16</sup> A particularly interesting finding recorded by some studies relates to the fact that the global health crisis

has had a negative impact on the implementation of face-to-face programmes and seminars on breastfeeding, childbirth, etc., resulting in many women being unable to receive appropriate information and feeling even more stressed.<sup>17,18,14</sup> In cases where women had positive attitudes towards pregnancy, childbirth and motherhood in general, the pandemic did not appear to be a factor in the development of postpartum depression, with the women reporting increased levels of anxiety and fear, but without depressive behaviours.<sup>28,29,26</sup> On the contrary, in cases where women did not want to or were not psychologically ready to become mothers they manifested states of postpartum depression during the global health crisis which also imposed measures of social isolation.<sup>25,27</sup> Pregnant women are a vulnerable group who may develop various psychiatric problems, which can be further exacerbated in the presence of crisis conditions, such as a financial or health crisis.<sup>30,13</sup> In general, in all studies, pregnant women and women in the postpartum period reported more significant clinical symptoms of depression and anxiety during the COVID-19 pandemic, than similar groups of women before the pandemic. Of particular importance, however, is the fact that although pregnant women reported significant anxiety about the health of themselves and their child, they had even more anxiety about other family members, including their husband, their other children and their parents, anxiety that otherwise does not develop to such a great degree.<sup>14,15,16</sup>

Finally, in the case of women who were aware of having a health problem manifested in

previous years, the pandemic was a significant factor in increasing stress and anxiety regarding the management of one's health, as various obstacles (e.g. visits to hospitals for standard clinical procedures, availability of medicines and medical staff, etc.) contributed to the burden on the woman's psychological state.<sup>26,23,22</sup> A variable with a significant negative impact on women's psychological state was the development of a new health problem during pregnancy or childbirth in the midst of the pandemic. This resulted in the manifestation of anxiety disorders and behaviours which fall within the spectrum of postpartum depression.<sup>31,28,29,26</sup> As can be deduced, postpartum depression is a psychological disorder that is influenced by a plethora of internal and external factors and manifests differently from woman to woman. Its manifestation can be further enhanced in the presence of intense periods of crisis, with the global health crisis being a variable that influenced and increased the prevalence rate of postpartum depression in women during the crisis.

## Conclusion

Postpartum depression (PPD) in women is a type of depression after childbirth, which causes a multitude of emotional, psychological, functional and behavioral problems for the new mother, increases the risk of reduced emotional, social and cognitive development of the child, and may also lead the woman to suicide or even infanticide. It is linked to various biological, chemical, social and psychological factors, while additional stressors affecting the living conditions of women may increase the risk of developing postpartum depression. It may



last from a short to a longer time period and the early diagnosis of both the psychological condition and the associated risks/factors is crucial in order to design appropriate pharmaceutical and/or non-pharmaceutical therapeutic interventions including medical and counselling support.

Although research on the impact of the COVID-19 pandemic on postpartum depression levels is still at an early stage, according to this research which focuses on data from studies carried out in the United States of America, the pandemic has had a negative impact on the rates of psychological stress, fear and insecurity among pregnant and lactating women. Research also shows that the pandemic has significantly increased women's stress, both as a result of fear for their personal health and the health of their child and as a result of the uncertainty about the financial and future situation of the woman and the household in general. The studies indicate that the global health crisis and relevant restraint measures reduced social and medical care support, increased feelings of isolation and domestic violence incidents and further amplified barriers for women in marginalized groups such as fear, anxiety and the inability for the necessary medical visits. Furthermore, the pandemic prompted many women to give birth at home as a result of fear and the need to protect their own and their child's health, while although it was possible to hold online information sessions on breastfeeding with medical or midwifery staff, these did not seem to be of the expected quality and effectiveness. Even though the present research data provides valuable information to better prepare governmental

mechanisms and health systems for possible future global crises of any kind, a larger-scale review of research data from different countries is needed with a view to protecting the mental health of all women, regardless of their nationality, race, economic, social or occupational status. Of particular interest would also be to investigate the impact of the pandemic on the stress and security levels of men as they too can experience intense depressive states after the birth of their child.

**Corresponding Author:**

Georgia Konstantopoulou  
Department of Education and Social Work,  
School of Humanities and Social Sciences,  
University of Patras, Greece  
Email: [gkonstantop@upatras.gr](mailto:gkonstantop@upatras.gr)

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