

# COVID-19 and the repercussions on pregnant women's mental health: integrative review

COVID-19 e as repercussões na saúde mental de gestantes: revisão integrativa  
 COVID-19 y las repercusiones en la salud mental de mujeres embarazadas: revisión integradora

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## Descritores

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## Abstract

**Objective:** To identify the impacts of COVID-19 on pregnant women's mental health from evidence in the literature.

**Methods:** This is an integrative literature review performed in MEDLINE, CINAHL, PUBCOV19 and MEDRXIV databases/electronic libraries. The search took place in pairs in December 2020, with articles available in full addressing pregnant women's mental health in the pandemic.

**Results:** The studies that made up the sample were published between April and December 2020 and in the ten studies included, depression and anxiety were identified as factors exerting impact on pregnant women's health, and the fear of COVID-19, stress and worries associated with the pandemic as contributing elements.

**Conclusion:** There was an impact on pregnant women's mental health in the pandemic with psychosocial, socioeconomic and health care repercussions. In this context, the approach to the psychological component in the nursing consultation can make a difference in pregnancy care.

## Resumo

**Objetivo:** Identificar, a partir das evidências presentes na literatura, os impactos da COVID-19 na saúde mental de mulheres grávidas.

**Métodos:** Trata-se de uma revisão integrativa da literatura, realizada nas bases de dados/biblioteca eletrônica MEDLINE, CINAHL, PUBCOV19 e MEDRXIV. A busca aconteceu de forma pareada no mês de dezembro de 2020, com artigos disponíveis na íntegra abordando a saúde mental das grávidas na pandemia.

**Resultados:** Os estudos que compuseram a amostra foram publicados entre os meses de abril e dezembro de 2020 e nos 10 estudos incluídos, a depressão e a ansiedade são apontados como fatores impactantes na saúde das gestantes, tendo como elementos contribuintes o medo da COVID-19, estresse e preocupações associadas à pandemia.

**Conclusão:** Houve impacto na saúde mental das gestantes na pandemia com repercussões de ordem psicossocial, socioeconômica e de assistência à saúde. Nesse contexto, a abordagem do componente psicológico na consulta de enfermagem pode fazer a diferença na atenção à gestação.

## Resumen

**Objetivo:** Identificar, a partir de evidencias presentes en la literatura, los impactos del COVID-19 en la salud mental de mujeres embarazadas.

**Métodos:** Se trata de una revisión integradora de la literatura, realizada en las bases de datos/biblioteca electrónica MEDLINE, CINAHL, PUBCOV19 y MEDRXIV. La búsqueda se realizó de forma pareada en el mes de diciembre de 2020, con artículos con texto completo disponible que abordaban la salud mental de embarazadas en la pandemia.

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Conflicts of interest: none to declare.

**Resultados:** Los estudios que formaron la muestra fueron publicados entre los meses de abril y diciembre de 2020. En los diez estudios incluidos, la depresión y la ansiedad son señaladas como factores impactantes en la salud de las mujeres embarazadas, donde los elementos contribuyentes son el miedo al COVID-19, el estrés y las preocupaciones relacionadas con la pandemia.

**Conclusión:** Hubo impacto en la salud mental de las mujeres embarazadas en la pandemia, con repercusiones de orden psicosocial, socioeconómica y de atención a la salud. En este contexto, el enfoque del componente psicológico en la consulta de enfermería puede marcar una diferencia en la atención al embarazo.

## Introduction

In December 2019, an infection emerged in Wuhan, China and spread rapidly around the world. Its causative agent is the new coronavirus (SARS-COV-2), responsible for the human infection considered a global health emergency.<sup>(1)</sup>

Some groups and populations are more vulnerable to complications caused by COVID-19, including pregnant and puerperal women, given their greater risk potential for developing the flu syndrome hence, they should follow important recommendations to avoid contagion.<sup>(2)</sup>

Information about COVID-19 in pregnant women is still inconsistent, as studies potentially focus on other population groups. There is an environment of uncertainty, in which investigations related to the potential for vertical transmission, if there are different symptoms (among other issues), still need clarification.<sup>(3)</sup>

Added to these issues, are the biological and psychological changes expected at this stage, mainly resulting from hormonal changes that make these women more susceptible to mental illness.<sup>(4)</sup> Pathological manifestations of women's mental health may emerge from this context of changes, which may be perceived through worries and uneasiness, mood swings, insomnia, insecurity and anxiety.<sup>(5)</sup>

Within this vulnerability situation inherent in the gestational period, other events are associated with mental disorders, such as women not working or studying, not having a partner, having two or more children, hospitalizations during pregnancy and having an associated chronic disease.<sup>(6)</sup>

In this sense, the pandemic adds challenging circumstances to psychological wellbeing. The fear of contracting the disease and contaminating the fetus, changes in the routine of antenatal consultations and restrictions on the presence of companions in the maternity hospital are factors that can contribute to greater psychological distress in pregnant women.<sup>(7)</sup>

Other implications of the pandemic, and characterized as stressors, are associated with this scenario, namely the insecurity of pregnant women in accessing health services, uncertain prognoses, conflicting messages from the authorities, financial difficulties, job loss, reduced wages, as well as new attributions related to family care.<sup>(8)</sup>

Amidst the consequences arising from an outbreak of a hitherto unknown disease threatening the life of pregnant women, feelings of fear, uncertainty, and stigmatization are recurrent and behave as barriers in the search for help to intervene appropriately in the psychological factors of the gestational period.<sup>(9)</sup>

Thus, health professionals should be attentive to pregnant women's mental health; it is important to identify the characteristics of the main factors and symptoms associated with changes in the psychosocial status of this population. In this context, the impact of the pandemic on their mental health is still poorly researched in a systematic way in the literature on the subject.<sup>(10)</sup>

Given the above, investigations related to implications of the COVID-19 pandemic on mental health during pregnancy need further clarification, as a psychological dysfunction in this period entails maternal and fetal dangers. The aim of this study was to identify the impacts of COVID-19 on pregnant women's mental health from evidence in the literature.

## Methods

This integrative literature review was developed from the following steps: identification of the topic and construction of the research question, establishment of inclusion and exclusion criteria, categorization, evaluation of included studies, interpretation of results and presentation of the review.<sup>(11)</sup> The study was conducted between July 2020 and March

2021, guided by the question: what are the impacts of the COVID-19 pandemic on pregnant women's mental health according to evidence in the literature? The choice of appropriate Medical Subject Headings (MeSH) descriptors to answer the question was based on the Population, Intervention, Comparison, Outcomes (PICO) strategy (Chart 1).

**Chart 1.** MeSH descriptors for components of the guiding question

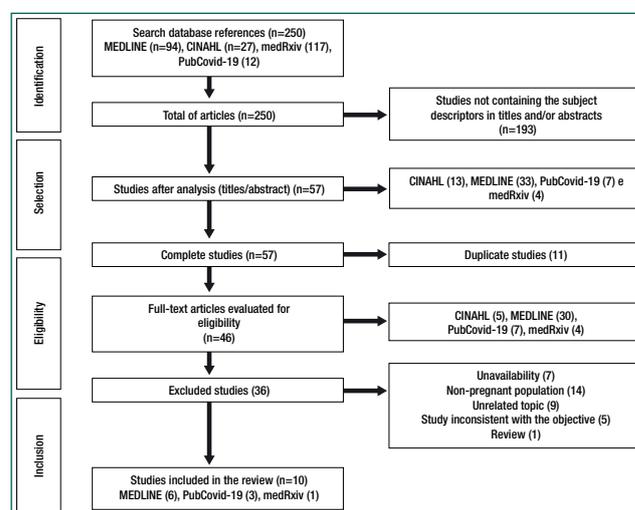
Strategy items	Components	Descriptors
Population	Pregnancy during the COVID-19 pandemic	Pregnancy/Coronavirus infections/COVID-19
Intervention	-	-
Comparison	-	-
Outcomes	Impacts on mental health	Mental Health

The following inclusion criteria were established: original articles, published in 2020, considering publications from April of the same year in Portuguese, English and Spanish and that could answer the research question. Documents in editorial formats, review or reflection articles, abstracts, reviews, experience reports and articles not available in full text were excluded. The literature search was performed by two researchers during December 2020 in the Medical Literature Analyzes and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases, PUBCOV-19 website and preprint server (medRxiv). Note that the advanced search form in the databases was used. The Boolean operators AND and OR were used to cross the descriptors in English in databases: Pregnancy AND Coronavirus infections OR Covid-19 AND Mental health. This same format was used in all databases. The classification of the levels of evidence according to a modification of the Agency for Health care Research and Quality (AHRQ) was applied: level 1, systematic review or meta-analysis of randomized controlled clinical trials/clinical guidelines containing the aforementioned review studies; level 2, well-designed randomized controlled clinical trial; level 3, controlled clinical trial without randomization; level 4, well-designed case-control or cohort studies; level 5, systematic review of descriptive and qualitative studies; level 6, descriptive or qualitative studies; and level 7 expert opinion.<sup>(12)</sup>

For data analysis, the main characteristics of studies were distributed in a chart, enabling organization, gathering and synthesis of key information.

## Results

The search resulted in 250 studies; 94 in MEDLINE, 27 in CINAHL, 12 in PUBCOV-19 and 117 in medRxiv. Afterwards, 193 studies were excluded for not including the subject descriptors in their titles and/or abstracts. Of the remaining articles, 11 were duplicates hence, removed. Finally, 46 publications were selected for full reading. At that time, an assessment of which texts really answered the guiding question and had a valid discussion on the theme was performed. Studies with some disagreement on inclusion and exclusion criteria were re-analyzed by one of the researchers and later excluded; 10 publications remained. Each step of the study was described using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) flowchart, consisting of four items recommended to assist researchers in describing and presenting reviews,<sup>(13)</sup> as shown in figure 1.



**Figure 1.** Selection flowchart of studies included in the integrative review

Of the selected articles, two were developed in China, while Turkey, Argentina, United States, Iran, Austria, Nigeria, Germany and Qatar deliv-

ered one production each. In all studies, pregnant women were used as participants, although in one study, puerperal women were evaluated in addition to pregnant women, as they answered the research question. As for the gestational period, seven studies included women of any gestational age, one included only pregnant women with less than 20 weeks of pregnancy, in another study there were only pregnant women in the third trimester and one article did not mention this information. Chart 2 presents the characterization of the 10 studies included in the review.

The findings pointed to the symptomatology of recurrent depression in pregnant women during the pandemic.<sup>(10,14,16,17,19)</sup> Specific issues were considered influential for the development of the symptom,

including family conflicts triggered by the greater time living together, the possibility of lack of food and concern for loved ones.<sup>(10)</sup> Anxiety was also described as a prevalent change.<sup>(10,14,15,16,20)</sup> Some factors are associated with this outcome, including obstetric aspects, such as interruption of antenatal care consultations in person ( $p < 0.0001$ ), the need to change the birth plan (CI: 95%;  $p < 0.001$ ) and on some occasions, change of the place of birth (CI: 95%;  $p = 0.004$ ).<sup>(16)</sup> The relationship with the husband and the Body Mass Index (BMI) were associated with the state of depression ( $p = 0.02$ ) and anxiety ( $p = 0.001$ ) experienced by pregnant women. Thus, women with obesity had higher scores of depression and anxiety.<sup>(14)</sup> The higher stress among pregnant women was found to be an important

**Chart 2.** Description of studies included in the integrative review

Main author/year	Study objective	Design/level of evidence	Instrument used to assess mental health	Results
Wu Y <sup>(9)</sup> 2020	Examine the impact of the COVID-19 outbreak on the prevalence of depression and anxiety.	Non-randomized clinical trial Level 3	Edinburgh Postnatal Depression Scale (EPDS)	4,124 participants/average age 30 years/0.2% had a history of anxiety and depression/68.8% were primiparas. Increased thoughts of self-harm and depressive and anxiety symptoms.
Moyer CA <sup>(10)</sup> 2020	Explore the impact of the COVID-19 pandemic on pregnant women's anxiety	Descriptive Study Level 6	Pregnancy-related Anxiety Scale (PRAS)	2,740 participants/mean age 32.7 years/35.9% had a prior history of depression and anxiety/mean 1.7 children. Increased anxiety related to interrupting face-to-face antenatal appointments and changing the birth plan, greater stress about family conflicts and depression.
Ayaz R <sup>(14)</sup> 2020	Compare anxiety and depression scores before and during the pandemic	Descriptive study Level 6	Inventory of Depression and Anxiety Symptoms II (IDAS II) and Beck Anxiety Inventory (BAI)	63 participants/average age of 30.4 years/average of 1.38 children. Increased anxiety and depression.
López-Morales H <sup>(15)</sup> 2020	Analyze psychopathological indicators in pregnant women throughout the confinement period	Descriptive study Level 6	Beck Depression Inventory-II (BDI-II) and State-Trait Anxiety Inventory (STAI)	204 participants/average age 32 years/57.4% did not have children. Significant increase in anxiety and depression during the pandemic.
Liu X <sup>(16)</sup> 2020	Investigate the state of anxiety and its influencing factors.	Descriptive study Level 6	Self-Rating Anxiety Scale (SAS)	1947 participants/over 14 and under 60 years were included/most were nulliparous. Pregnant women developed pandemic anxiety.
Nwafor JI <sup>(17)</sup> 2020	To determine the prevalence and associated factors of depression, anxiety and stress among pregnant women at a tertiary health facility in Abakaliki during COVID-19-related lockdown in Nigeria.	Descriptive study Level 6	Depression Anxiety and Stress Scale-21 (DASS-21)	456 participants/average age 27 years. Presence of mild, moderate, severe and extremely severe depression resulting from COVID-19. Mild to moderate stress related to COVID-19-related lockdown.
Schaal NK <sup>(18)</sup> 2020	To investigate the association of maternal obstetric and sociodemographic factors with PREPS scores.	Cohort study Level 4	The Pandemic-Related Pregnancy Scale (PREPS)	1,364 participants/mean age 31.8 years/11 pregnant women were diagnosed with COVID-19. Preparation stress as well as infection stress correlated positively with fear of childbirth, pregnancy-specific stress, and perceived risk of infection of loved ones. Having a below-average income was associated with higher levels of perceived stress during the COVID-19 pandemic.
Farrell T <sup>(19)</sup> 2020	Explore rates of anxiety and depression symptomatology during the COVID-19 pandemic, comparing them with pre-pandemic data.	Descriptive study Level 6	Patient Health Questionnaire Anxiety Depression Scale (PHQ-ADS)	288 participants/mean age 30.5 years/3.1% had previous mental health problems/Mean 1.7 children. Worsening of stress and depression in symptomatic women with moderate to severe scores.
Chivers BR <sup>(20)</sup> 2020	Understand the feeling and impacts on emotional wellbeing arising from changes in social and support dynamics in a perinatal cohort during the COVID-19 pandemic	Qualitative study Level 6	Not used	831 participants. Anxiety related to childbirth conditions and lack of knowledge about the disease. Signs of despair, anticipatory grief. Increase in family conflicts.
Salehi L <sup>(21)</sup> 2020	Determine the fit of the conceptual model path analysis that measures the relationship between COVID-19 fear and anxiety, pregnancy experience, and the mental disorder of pregnant women.	Descriptive study Level 6	Corona Disease Anxiety Scale (CDAS) and Fear of COVID-19 Scale	194 participants/Mean 29.1 years/38.7% had a child. Mental health during pregnancy was significantly correlated with Fear of COVID-19.

factor in altering their mental status.<sup>(10,18-20)</sup> Loss of family income, loss of day care centers, family conflicts and the absence of a partner in antenatal consultations were related to this change, as well as the high parity and being in the third trimester of pregnancy.<sup>(17,18)</sup>

Fear influenced the mental state of pregnant women and was associated with the risk of self-infection and contamination of loved ones. Other changes mentioned were negative and self-mutilation thoughts, despair and concerns related to several aspects affected by the COVID-19 pandemic context.<sup>(9,18,20,21)</sup>

## Discussion

The presence of depression was cited as an important mental change in women in the period analyzed here. We also observed the interaction between the prolonged duration of the pandemic with the severity of these symptoms, and its effects on maternal wellbeing.<sup>(15)</sup> This was also observed in another study that showed a significant effect on depression scores in pregnant women exerted by the social isolation caused by the pandemic.<sup>(22)</sup>

Furthermore, depression during antenatal care can have important repercussions on maternal life, such as greater vulnerability to the development of postpartum depression and damage to the mother/child relationship, negatively affecting their ability to interact.<sup>(23)</sup>

The findings also revealed that the COVID-19 pandemic increased pregnancy-related anxiety in many women, directly impacting their mental health, highlighting the association with the change to online consultations.<sup>(10)</sup> Similar results were found in another study, where greater anxiety about health was related to the postponement or cancellation of appointments.<sup>(24)</sup>

The social support needed by women during pregnancy was extremely affected by the pandemic, mainly by isolation and distancing from important people. The absence of this support contributed to the onset of anxiety.<sup>(19)</sup>

However, it is important to highlight that anxiety can be commonly linked to the gestational pro-

cess, and associated with some variables such as the occupation of the pregnant woman, obstetric history, maternal desire in relation to pregnancy, smoking and the use of illicit drugs.<sup>(25)</sup>

Given the complexity of the problem, primary care professionals, especially nurses, must be alert regarding the early identification of psychological changes and offer appropriate user embracement related to the detected demands by listening and dialogue, avoiding that symptoms go unnoticed<sup>(26)</sup> or overlap with those that may appear as a result of the COVID-19 pandemic.

Fear, especially of coronavirus contamination, is another issue that exerts impact on the prenatal psychological state.<sup>(21)</sup> This symptom is influenced by individual aspects, such as loss of routines and jobs, search for information about the disease, the risk of infection of close people, and the dissemination of messages by the media, which can culminate in panic and hysteria.<sup>(27)</sup>

Stress was another symptom presented by pregnant women in this isolation period, which was more recurrent in women with many children or those in the last trimester of pregnancy.<sup>(17)</sup> Other studies present evidence that the pandemic itself acts as a stressor and contributes to psychological distress during pregnancy, being considered a strong predictor of comorbid anxiety and mild to severe depressive symptoms.<sup>(28,29)</sup>

Family conflicts were also cited as responsible for the greater stress in pregnant women.<sup>(10)</sup> According to a study of participants from all Brazilian states, in times of isolation, the occurrence of some family stress is common and bears a significant relationship with the amount of people living in the house.<sup>(30)</sup>

Fetal wellbeing was a recurrent concern among pregnant women; as evidence in relation to vertical transmission and the effects of the virus is not concrete, women realize there is a risk of infecting the baby, which further weakens their mental state.<sup>(8)</sup>

According to the analysis of study data, socio-demographic factors contribute to the exacerbation of changes in maternal mental health during the pandemic, such as low socioeconomic status, insufficient social support and precarious health behaviors.

In view of these issues, it is important to seek strategies for the early identification of symptoms pointing to changes in pregnant women's mental condition, which can support the assessment of risks and need for interventions that ensure favorable maternal and perinatal outcomes.<sup>(31)</sup>

The theme discussed here can have implications for nursing practice, as it can provide nurses with subsidies to approach the psychological component during nursing consultations, which is the appropriate space to grasp and understand the expressions of daily issues experienced by pregnant women, considering also the pandemic component.

Some limitations must be mentioned. All articles are characterized by the low level of evidence with non-randomized samples. On the other hand, there is a time frame related to a recent pandemic, since there was not enough time for more robust research.

## Conclusion

Data obtained showed that the mental health of pregnant women was impacted by the pandemic and its consequences, including isolation, changes in consultations and family conflicts. Depressive and anxiety symptoms stood out, but stress, fear, negative thoughts and concerns about various aspects related to the pandemic were also recurrent. It is expected that the study will strengthen nursing practice when acting on the identified problems through reflections, discussions and notes on the need to seek strategies for the early identification of pregnant women with risk factors for changes in mental wellbeing.

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