

## IMPACT OF COVID-19 INFECTION ON PREGNANCY: SCOPING REVIEW

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### ABSTRACT

The current COVID-19 pandemic is considered an example of a natural disaster with so much global health burden, over 22 million people worldwide contracted it and more than 791,000 people died. The purpose of compiling this Scoping Review is to obtain evidence based and case descriptions, impacts, vertical transmission of Covid-19 infection in pregnant women. Using Scoping Review data obtained from Pubmed, ScienceDirect and Ebscohost. Furthermore, an assessment and mapping of themes is carried out. An article that discusses COVID-19 infection in pregnant women. There are patients who experience the most common symptoms such as cough and fever, there are pregnancy impacts from pregnant women who are positive for COVID-19 such as abortion, premature birth, Caesarean section and death. There is no vertical transmission from mother to fetus. Pregnant women are susceptible to severe illness in case of viral infection. There are impacts of COVID-19 infection on pregnancy including abortion, premature, caesarean section and death. There is no vertical transmission from mother to fetus.

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### Introduction

Coronavirus disease 2019 (COVID-19) is an infection that is endemic almost all over the world. with the virus name Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV2). COVID-19 is an acute respiratory disorder caused by the Severe Acute Respiratory Syndrome Coronavirus 2, which first occurred in Wuhan, China in December 2019. The main symptoms include fever, dry cough and shortness of breath (Guan et al., 2020).

High-risk groups for the COVID-19 virus include medical experts, chronic disease

sufferers, pregnant women and the elderly. Pregnant women are a vulnerable group because of changes in body physiology and immune response mechanisms in their bodies. Almost all health services have been affected by COVID-19, including maternal and neonatal health services in terms of access and quality.

The purpose of this Scoping Review is to obtain evidence based on the impact and vertical transmission of COVID-19 infection in pregnant women.

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**Research methods**

The method used is Scoping Review. There are several steps in a scoping review (Tricco et al., 2016).

Identifying research questions In building a thorough review and journal search strategy

using the Population, Exposure, Outcome format. and Study Design (PEOS) in solving and managing the focus of the review. The research question is how is the impact of COVID-19 infection on pregnancy?

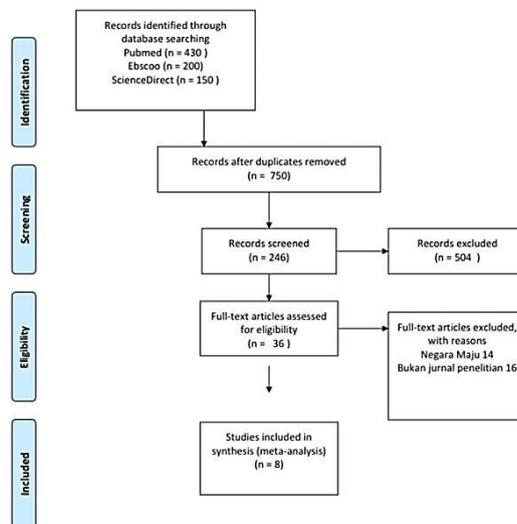
**Table 1**  
**Framework Scoping Review**

<b>P</b> <b>(Population)</b>	<b>E</b> <b>(Exposure)</b>	<b>O</b> <b>(Outcome)</b>
Ibu Hamil	COVID-19	Impact on Pregnant Women

Identifying Relevant Articles Inclusion Criteria articles published in 2019-2021, articles describing outcomes of COVID-19 during pregnancy, articles discussing COVID-19 infection during pregnancy, articles discussing the impact of COVID-19 on pregnancy. Exclusion criteria: opinion articles and articles

discussing COVID-19 in pregnant women in developing countries.

Researchers used the Pubmed, ScienceDirect and Ebscoo databases. Article Selection Researchers searched 3 databases such as Pubmed, Ebscoo and ScienceDirect. 780 Journals were found. A prism diagram is displayed to see in detail the flow of article selection



**Figure 1**  
**Prism Flowchart**

Article Assessment Data Charting is carried out. Researchers conducted an assessment using references from Hawker (Hawker et al., 2002) Based on 8 articles, data extraction was carried out to C lassify

## Results and Discussion

several points or parts of the article such as research objectives, research design, results or findings of the study, in this step the researcher gets several themes and subthemes, namely: Clinical picture of infection Covid-19 on pregnant women, Impact of Covid 19 on pregnant women and treatment of covid 19.

### A. Clinical Overview

Pregnant women who are infected with Covid-19 usually cause mild, moderate or severe symptoms. Symptoms that usually appear are fever (temperature  $> 38^{\circ}\text{C}$ ), cough and difficulty breathing. And also usually accompanied by severe shortness of breath, gastrointestinal symptoms such as diarrhea and other respiratory symptoms (Aziz & Dahlan, 2020).

The results of the study in article [1] showed that between 15 patients, 13 had a fever with a temperature of  $37.6-39.0^{\circ}\text{C}$  which started 2-10 days before admission. In addition, nine patients had cough, four patients, fatigue, three patients, muscle pain, one patient, sore throat and one patient diarrhea. Study results from article [2] All patients had high fever ( $38^{\circ}\text{C}$ ) and most presented with cold, stiffness, malaise, and myalgia. Only 33% of pregnant patients experience shortness of breath. All patients had positive SARS-CoV RT-PCR. Outcome General patients usually have symptoms common at the onset of COVID-19 infection for pregnant women including fever and cough, while less common symptoms are myalgia, malaise, sore throat, diarrhea, and shortness of breath. However, in the research article in article [3], it was found that all pregnant women when entering the hospital did not experience fever or cough before giving birth. However, all patients had mild fever

( $37.5-38.5$ ), All patients had no symptoms such as hemoptysis, dyspnea, shortness of breath, nausea, and vomiting. All oxygen saturation tests were normal. All patients were asymptomatic [4]. Impact of COVID-19 Infection on Pregnancy Abortion Pregnant women infected with COVID-19 experience more adverse events to the fetus, such as early-trimester miscarriage, fetal distress, and intrauterine growth restriction (Liu et al., 2020). Patients presenting in the first trimester have spontaneous miscarriages between 2 to 5 weeks after COVID-19 infection.

Premature Mothers with confirmed COVID-19 have a significantly higher rate of preterm birth. Pregnant women infected with Covid 19 have the potential to have a risk of adverse neonatal complications such as spontaneous miscarriage, premature delivery, intra uterine growth restriction. Preterm delivery is a side effect on the fetus reported in pregnant women who are positive for COVID 19. In some cases, fetal distress and premature labor were found (Aziz & Dahlan, 2020). In the article [2], it was found that 4 out of 7 patients had preterm birth. Research studies show that pregnant women with COVID-19 are more likely to have babies born prematurely. All preterm infants born to infected mothers were iatrogenic preterm due to intrauterine fetal distress [5].

### B. Caesarean section

The majority of pregnant women infected with COVID-19 undergo a planned caesarean section to prevent neonatal transmission of the virus. A systematic review found that the most frequent mode of delivery in the reported cases was caesarean section (Schwartz & Graham, 2020).

This is relevant where caesarean delivery outcomes are three times or greater among women with COVID-19 compared to those without COVID-19. However, only if there are indications caused by SARS-CoV-2 infection in pregnant women or fetuses, such as shortness of breath in the mother and related complications and fetal distress in utero. Thus, the symptoms

The COVID-19 contributed to the high incidence of caesarean sections among infected mothers. Delivery by caesarean section is carried out on mothers who are positive for Covid-19 to avoid transmission from mother to fetus.

### C. Dead

Corona virus infection in pregnant women can not only cause severe symptoms in the mother, but also puts the baby at risk. Pregnant women with Covid-19 infection in the second or third trimester of pregnancy can experience cardiopulmonary complications and die (Hantoushzadeh et al., 2020). This is relevant to the article [6] of the results of the study, namely 7 deaths from 9 pregnant women infected with Covid-19. The deaths that occurred in this case were pre-existing illnesses. In other articles, there were no results of deaths in pregnant women who were positive for Covid 19. Vertical transmission from mother to fetus In articles [4] and [8] the results of this study showed that SARS-CoV-2 was negative in all samples, indicating that no intrauterine fetal infection occurred as a result of COVID-19 infection during the later stages of pregnancy. Treatment of COVID-19 Infection in Pregnant Women Pregnant women with COVID-19 are not recommended to use ribavirin because of the risk of causing fetal deformities. New drugs for the treatment of COVID-19 are still being tested in clinical trials and their effects on pregnant women are

uncertain and require further research (Alserehi et al., 2016).

The results of this study were obtained. All patients were given broad-spectrum antibiotics, namely beta-lactams and macrolides or fluoroquinolones. All patients, except patient 7, were given ribavirin and/or hydrocortisone after 48 hours of observation. All couples were fully informed about the potential teratogenic effects of ribavirin and all chose to receive this treatment [2].

### Conclusion

Most research results show that the most common initial symptoms in pregnant women with COVID-19 infection are fever and cough. The bad impact of pregnant women infected with COVID-19 is premature birth, surgery Caesarean, Miscarriage, Death and possibly vertical transmission from mother to fetus.

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