

# Women who developed complications of the New Coronavirus SARS-CoV-2 during pregnancy

## Mulheres que desenvolveram complicações do Novo Coronavírus SARS-CoV-2 durante a gestação

## Mujeres que desarrollaron complicaciones del Nuevo Coronavirus SARS-CoV-2 durante el embarazo

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# REVISA

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### RESUMO

**Objetivo:** Analisar as complicações do novo coronavírus SARS-CoV-2 em mulheres que desenvolveram a infecção durante a gestação acolhidas no Hospital Regional de Taguatinga (HRT). **Método:** Este estudo utilizou como referencial os pressupostos de Minayo, por meio de abordagem qualitativa e método de pesquisa exploratória. As entrevistas tiveram início somente após autorização do CEP e foram realizadas por meio da plataforma Google Forms. Para a coleta dos dados as participantes primeiramente fizeram o aceite para participação da pesquisa por meio do TCLE. **Resultados:** Foram entrevistadas 10 mulheres com idade acima de 18 anos, onde responderam um questionário referente ao diagnóstico, sintomas e complicações pelo novo coronavírus na gestação. Para a discussão, os dados foram organizados em gráficos e categorias. **Considerações finais:** Este estudo atendeu aos objetivos propostos, descrevendo sobre as complicações que o novo coronavírus pode causar na gestação, sendo assim, evidenciando que as gestantes são mais propensas a infecção pelo novo coronavírus SARS-CoV-2. Portanto, este estudo deixa esta contribuição para os profissionais de saúde, apresentando os comprometimentos que esta infecção pode causar na gestação.

**Descritores:** Complicações; Novo coronavírus; Gestação.

### ABSTRACT

**Objective:** To analyze the complications of the new SARS-CoV-2 coronavirus in women who developed the infection during pregnancy at the Hospital Regional de Taguatinga (HRT). **Method:** This study used Minayo's assumptions as a reference, through a qualitative approach and exploratory research method. The interviews started only after authorization from the CEP and were carried out through the Google Forms platform. For data collection, the participants first accepted to participate in the research through the IC. **Results:** 10 women over 18 years of age were interviewed, where they answered a questionnaire regarding the diagnosis, symptoms and complications of the new coronavirus in pregnancy. For discussion, data were organized into graphs and categories. **Final considerations:** This study met the proposed objectives, describing the complications that the new coronavirus can cause during pregnancy, thus showing that pregnant women are more prone to infection with the new SARS-CoV-2 coronavirus. Therefore, this study leaves this contribution to health professionals, presenting the impairments that this infection can cause in pregnancy.

**Descriptors:** Complications; New coronavirus; Pregnancy.

### RESUMEN

**Objetivo:** Analizar las complicaciones del nuevo coronavirus SARS-CoV-2 en mujeres que desarrollaron la infección durante el embarazo en el Hospital Regional de Taguatinga (HRT). **Método:** Este estudio tomó como referencia los supuestos de Minayo, a través de un enfoque cualitativo y un método de investigación exploratorio. Las entrevistas comenzaron solo después de la autorización del CEP y se llevaron a cabo a través de la plataforma Google Forms. Para la recolección de datos, los participantes primero aceptaron participar en la investigación a través del CI. **Resultados:** Se entrevistó a 10 mujeres mayores de 18 años, donde respondieron un cuestionario sobre el diagnóstico, síntomas y complicaciones del nuevo coronavirus en el embarazo. Para la discusión, los datos se organizaron en gráficos y categorías. **Consideraciones finales:** Este estudio cumplió con los objetivos propuestos, describiendo las complicaciones que puede ocasionar el nuevo coronavirus durante el embarazo, mostrando así que las mujeres embarazadas son más propensas a contagiarse con el nuevo coronavirus SARS-CoV-2. Por tanto, este estudio deja este aporte a los profesionales de la salud, presentando las deficiencias que esta infección puede ocasionar en el embarazo.

**Descritores:** Complicaciones; Nuevo coronavirus; Gestación.

ORIGINAL

## Introduction

Pregnancy is a remarkable event in a woman's life, where psychological, hormonal and physical changes occur that prepare the maternal organism to generate a new being. These modifications can generate fears, doubts, anxieties or only the curiosity to know what is happening to your body.<sup>1</sup>

The pregnancy cycle has an average duration of 40 weeks, divided into quarters, totaling three trimesters. This is due to the characteristics of each of these periods. The woman's body prepares for the formation of the child and for childbirth, and each week is marked by important advances in the development of the baby.<sup>2</sup>

Respiratory disease caused by the SARS-CoV-2 virus called the new coronavirus (COVID-19) was first identified in Wuhan - China in December 2019. The World Health Organization (WHO) was monitoring the evolution of the disease and on March 11, 2020, COVID-19 declared a pandemic. Due to this circumstance, in January 2020, the Ministry of Health activated the Center for Emergency Operations in Public Health, to coordinate this nationwide emergency and contribute to the definition of appropriate strategies and actions to cope with COVID-19.<sup>3</sup>

267,344,049 cases of COVID-19 and 5,274,405 deaths were confirmed worldwide as of December 7, 2021.<sup>4</sup> In Brazil there are 22,157,726 confirmed cases of COVID-19 and 616,018 deaths, according to the updated data, released on December 7, 2021.<sup>5</sup>

The forms of transmission of SARS-CoV-2 are by direct contact, indirect and maternal-fetal contact. Direct counting occurs through respiratory secretions such as coughing, sneezing, talking or singing and saliva expelled by infected people, indirect contact occurs when the individual touches objects and surfaces contaminated by respiratory secretions and then leads to the face, mouth, nose or eyes, and the maternal-fetal although rare, may be possible occurring by transplacental route or during childbirth. It is noteworthy that breastfeeding is safe, does not transmit and should be maintained.<sup>6</sup>

Some population groups are more vulnerable to infections, pregnant women and puerperal women were included in this context, therefore, they are considered as a risk group for COVID-19. Therefore, care for pregnant women and postpartum women should be rigorous and continuous, regardless of the clinical history of patients.<sup>7</sup>

Infection with the new coronavirus during pregnancy, can happen at any stage of the gestational period, usually causes mild symptoms such as fever, general malaise and cough. However, women who are infected after 28 weeks of gestation are at increased risk of developing severe symptoms such as difficulty breathing and mental confusion, which may increase the risk of pregnancy complications.<sup>8</sup>

In view of the above this study proposes the following research question: Did the new Coronavirus SARS-CoV-2 bring complications to women who developed the infection during pregnancy?

The aim of this study was to analyze the complications of the new Coronavirus SARS-CoV-2 in women who developed the infection during pregnancy received at the Regional Hospital of Taguatinga (HRT).

This study evidences data collection to women who developed complications of the new Coronavirus SARS-CoV-2 during pregnancy. Thus, in the feeling of collaborating for the improvement of care, providing pregnant women with care through better qualification, ensuring better treatment.

Thus, the study becomes important because it can contribute to the learning and development of nursing professionals working with pregnant women, also assisting teachers and students in the area as support material and, moreover, stimulating new studies.

Finally, this study becomes relevant, as it can bring benefits to nursing professionals who accompany pregnant women in day-to-day practice within hospital units.

## Method

This study used Minayo's<sup>9</sup> assumptions as a reference, through a qualitative approach and exploratory research method.

The research respected the ethical aspects contained in Resolution No. 510/2016 of the National Health Council (CNS), which provides for the norms that regulate research involving human beings, seeking to respect the social, moral, religious and cultural values, as well as customs and habits of each subject of the research.<sup>10</sup>

Para este estudo foram mantidos o sigilo, o anonimato, a confidencialidade e a fidedignidade dos dados obtidos.

The collection of information began only after the release of the Ethics and Research Committee (CEP) of the Foundation for Teaching and Research in Health Sciences/FEPECS/SES/DF under the opinion number: 5,090,056.

The research was carried out in a public hospital in the Federal District. It was inaugurated on March 2, 1974 in the city of Taguatinga, which has an estimated population in 2016 of approximately 222,598 inhabitants. The participants of the research were women who developed complications of the new Coronavirus SARS-CoV-2 during pregnancy and who voluntarily agreed to participate in it.

For effective participation in the research, women had to meet the following inclusion criteria: voluntarily accepting participation in the research; 18 years of age or older; are in good mental health; women who developed infection with the new coronavirus during pregnancy and who have signed the TCLE.

As exclusion criteria, women who were excluded were excluded: they did not voluntarily accept participation in the research; who were under the age of 18; who were not in good mental health; women who did not develop infection of the new coronavirus during pregnancy and finally, women who did not sign the TCLE.

The research scenario was a public hospital in the Federal District, where women were approached and invited to participate in this study. To conduct the interview, the Google Forms platform was used with the formulation of a questionnaire with 10 objective and subjective questions. The study had 10 participants.

After the acceptance to participate in the research, information about their rights and objectives of this study was presented to each participant, in

addition to instructing them about the risks and benefits related to their participation. The participants were instructed to be able to give up the research at any time before the publication of the data, at no cost to both parties. It was also emphasized that they would not receive any particular benefit and/or material

For data analysis, three phases were used, denominated as pre-analysis, analytical description and inferential interpretation that allowed the presentation of the data in a more understandable way, as follows.

## Results and Discussion

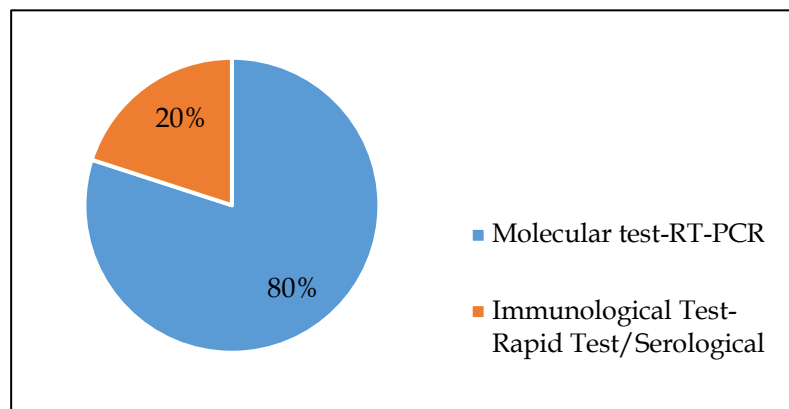
The results for this research counted on the reports of the participants who are presented with the letter "P" plus a growing numeral (P1 [...] P10) to identify them, thus maintaining their anonymity, confidentiality and confidentiality of data.

Women aged between 18 and 36 years, whose educational level ranged from high school to post-graduation, although most of them presented complete high school. And in relation to the number of children, the number ranged from 1 to 5 children. For the discussion of the theme, the data found were organized in the form of graphs and categories, as presented below:

### New coronavirus diagnosis (Covid-19)

Among the tests performed for diagnosis of coronavirus; a significant number, answered that they were diagnosed by molecular test -RT-PCR, available in health units in that period.

**Figure 1-** Diagnosis of infection by the new coronavirus COVID-19. Federal District, 2021.



The RT-PCR molecular test is the best applicable for diagnosis of coronavirus infection, which detects viral RNA of the virus in samples collected by nasopharynx swab and oropharynx. This test directly detects the presence of components of the virus genome. Ideally, it needs to be done in the first week of symptoms, not exceeding the 12th day, because in this period the viral load is higher. The RT-PCR test is the gold standard for diagnosis of sars-cov-2 virus. On the other hand, rapid tests are serological tests with the identification of IgM and IgG antibodies, can be done in capillary blood, whole blood, serum or plasma. If they are made early on symptoms, there is a higher risk of giving a

false negative result. For the production of these antibodies, on average it is 7 to 10 days after the onset of symptoms for IgM antibodies and 10 days or more for IgG.<sup>11</sup>

Although the Ministry of Health in contradiction published that the tests for the new coronavirus in Brazil were made available to the population, this confrontation was not quite. BBC News published on 20 May 2021 on the Official Testing Index in Brazil showing the country with a rate similar to Zambia, which appeared at number 88 in ranking with 111 countries. "More than a year after the onset of the pandemic and at the time epidemiologists warned of the risk of collapse in winter, testing against covid-19 in Brazil was still low and disorganized."<sup>12</sup>

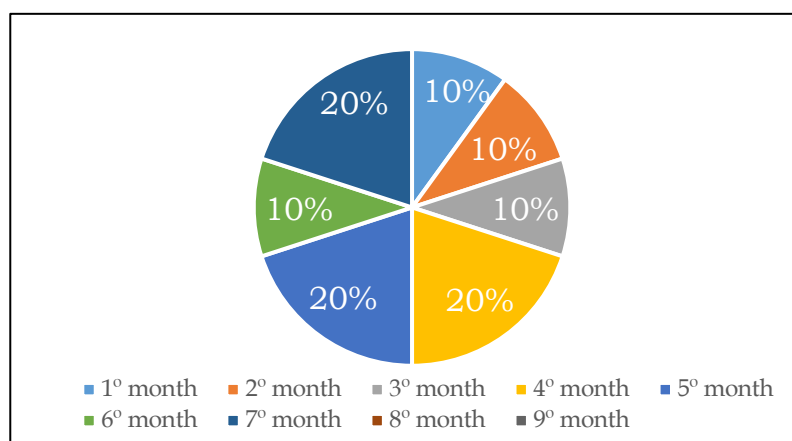
In *correio Braziliense* of July 11, 2021, the article on serological tests publishes data in which "Brazil does not yet have one of the necessary pillars to fight the new coronavirus: the mass testing of the population". With the exchange of three ministers the strategic plan for the distribution of testing kits, were still in the role.<sup>13</sup>

It is worth explaining that the pregnancy period of vulnerabilities and risks for women in this condition, great challenges were faced such as: knowing the ideal moment of infection to perform the tests; biological material to be used; type of methodology employed and availability of tests.<sup>14</sup> For the latter, it is worth remembering that the non-availability of tests in the public network and with the impediment of agreements to carry out them, it was required that a large part of the population was required to mobilize more and even a financial reorganization for the test to be performed,<sup>15</sup> all of which cause concern, fear and insecurity in the day-to-day life of pregnant women.

### Gestational Period

In this category, participants were asked to answer in which gestational period they contracted the new coronavirus (COVID-19). The answers varied between the 1st to the 7th month of gestation, but the vast majority reported contracting the infection in the second and third trimester of pregnancy, at 4, 5 and 7 months.

**Figure 2-** Period of pregnancy that the participants contracted covid-19. Federal District, 2021.

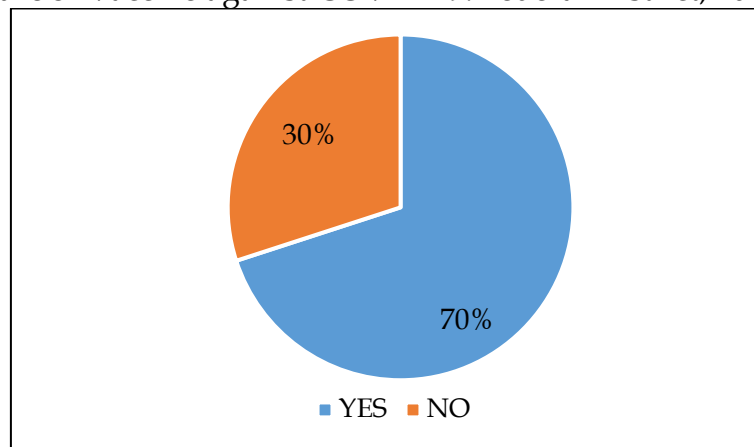


Coronavirus infection during pregnancy can occur at any stage of the gestational period.<sup>8</sup> In the last trimester of pregnancy and in the postpartum period, more severe conditions become worse. Thus, pregnant women and postpartum women up to the 14th day of postpartum are considered risk groups.<sup>16</sup>

### COVID-19 vaccine

In this category, participants were asked to answer whether they were immunized against COVID-19. The vast majority of participants in this study answered that they were immunized against COVID-19.

**Figure 3-** Vaccine against COVID-19. Federal District, 2021.



Pregnant women, puerperal women and lactating women belonging to the priority groups, especially if they have any comorbidity, can be vaccinated against COVID-19 in Brazil. This is the guidance of the Ministry of Health, based on national and international studies that examined the risks and benefits of immunizing women in these conditions.<sup>17</sup>

Pregnant women should be immunized with doses of Coronavac and Pfizer. At the end of April, the National Immunization Program (PNI) determined that pregnant and postpartum women, up to 45 days postpartum, should be vaccinated due to the epidemiological scenario of coronavirus and an increase in maternal deaths.<sup>18</sup>

### About the symptoms of the infection

Although a minority of the participants claimed to have comorbidity and this may also influence the disease clinic, in this category the participants reported on the symptoms that were presented by the new coronavirus (COVID-19), which claimed several symptoms, which were:

I felt difficulty performing routine activities, total loss of appetite, weight loss, tiredness, shortness of breath, and extreme muscle weakness. I didn't walk for days. (P1)

I had difficulty performing routine activities, dry cough, fever and body pain. (P2)

I had difficulties in performing routine activities, sinusitis, body pain, indisposition, loss of taste, loss of smell. (P3)

I had no difficulty in performing routine activities, lack of taste and smell. (P4)

I felt difficulties in performing routine activities, loss of smell, loss of taste, tiredness. (P5)

I had difficulties in performing routine activities, body pain, runny nose, headache, no taste and smell. (P6)

I felt difficulties in performing routine activities, shortness of breath, tiredness, loss of taste and smell, lack of appetite, muscle pain. (P7)

I had difficulties in performing routine activities, pain in the legs, a lot of body pain, fever, tiredness. (P8)

I had difficulties in performing routine activities, dry cough, headache, anosmia, febrile state. Mild but persistent symptoms. (P9)

I had difficulty performing routine activities, I was without taste, without smell. (P10)

COVID-19 is a disease caused by the Coronavirus SARS-CoV-2, which presents a higher risk of severity in patients with chronic diseases, such as heart diseases, diabetes, hypertension, among others. The Brazilian Ministry of Health expanded this high-risk group, adding pregnant women, puerperal women and women after abortion due to low immunity and low tolerance to hypoxia (decreased oxygen).<sup>19</sup>

The U.S. Centers for Disease Control and Prevention has added new symptoms of the new coronavirus, which may manifest between two and 14 days after exposure to the virus, including: fever, cough, dyspnea, chills, myalgia, headache, sore throat, loss of taste or smell (anosmia).<sup>20</sup>

### **Impairments of the route of delivery and NB**

The participants described in the vast majority, that regarding the delivery route there were no alterations, followed as planned. They also reported, in the vast majority, that the baby's health was not compromised after contagion of the new coronavirus.

My route of delivery did not change after Covid-19 and also did not compromise the baby. (P1)

I followed the planned birth path and my baby's health was not compromised. (P2)

I continued with the delivery route I desired and there were no compromises in my baby's health. (P3)

My route of delivery did not change after Covid-19 and did not compromise the baby's health. (P4)



I did not follow the route of delivery she wanted and had no compromises in the baby's health. (P5)

I remained with the way of delivery i intended and there were no compromises in my son's health. (P6)

I went on with the life of childbirth I wanted and my baby's health was compromised. (P7)

I continued with the life of planned delivery and had no compromises in the health of my baby. (P8)

My route of delivery has not changed and it has not compromised the baby's health either. (P9).

I remained with the desired route of delivery and my baby's health was not compromised. (P10)

The time and route of delivery, in most cases, should not be established by maternal infection by the new coronavirus SARS-CoV-2. A multidisciplinary evaluation is essential, taking into account the general condition of the patient, gestational age and fetal vitality.<sup>21</sup>

COVID-19 infection is not an indication to change the route of delivery. Cesarean delivery will be performed by standard obstetric recommendations, which may include acute decompensation of the mother with COVID-19 or fetal indications.<sup>22</sup>

### **Complications after contagion of the new coronavirus**

In this category, the participants of this study reported on the complications they developed after the contagion of the new coronavirus, revealed short and long-term complications; serious and unserious complications, as follows:

Low immunity, extreme fatigue and shortness of breath. (P1)

Vaginal bleeding at the end of pregnancy where I don't know if there are complications related to the COVID I had. (P4)

Pneumonia. (P5)

Gestational diabetes. (P7)

Leg pain. (P8)

Anemia and onstart of thrombosis. (P10)

As pregnant women have a suppressed immune system, they may have a higher risk of developing serious or critical diseases related to COVID-19, in particular pneumonia and respiratory failure.<sup>23</sup>

Pregnancy is a condition that enables thrombosis, the formation of blood clots, a mechanism similar to that of COVID-19, which can make the disease during pregnancy more dangerous. Especially in the postpartum period, the so-called puerperium, when the body struggles to stop bleeding and return the uterus to its normal volume, prothrombotic mechanisms are fundamental.<sup>24</sup>

Pregnant women and puerperum women have a higher risk of contracting serious diseases due to COVID-19 compared to non-pregnant



women, including risk of hospitalization and deaths. Furthermore, pregnant women with COVID-19 have an increased risk of preterm delivery and may have a higher risk of other adverse outcomes in pregnancy.<sup>25</sup>

## Final Consideration

Pregnant women constitute a group of the population with particularities, especially related to their physiological and immunological alterations. This study met the proposed objectives, describing the complications that the new coronavirus can cause during pregnancy, thus evidencing that pregnant women are more prone to infection by the new Coronavirus SARS-CoV-2.

We concluded that it is of paramount importance that health professionals, especially nursing, have knowledge of the symptoms of the new coronavirus (Covid-19), in order to prevent the worsening of the disease and intervene through guidance and referrals to the health care of pregnant women and fetuses. Therefore, this study leaves this contribution to health professionals, presenting the impairments that this infection can cause during pregnancy.

Although there is an avalanche of publications about the new coronavirus and, in particular, several studies related to pregnant women and their vulnerabilities in relation to infection; the truth is that complications don't have much to reveal. For, like other pandemics, COVID-19 still has much to show, to reveal itself throughout history. To point out here some questions that could guide new studies would be naïve on our part, because every moment that a variant appears, it instigates us to redo the information. Certainly in the near future we will have other more incisive contributions to present.

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