Rev Enferm Atenção Saúde
2025;15(1):e20257352
DOI: 10.18554/reas.v15i1.7352
http://seer.uftm.edu.br/revistaeletronica/index.php/enfer

Revista de Enfermagem e Atenção à Saúde
REAS

ORIGINAL ARTICLE

Prevention and self-care approaches of COVID-19 during pregnancy

Medidas de prevenção e autocuidado quanto à COVID-19 na gestação

Medidas de prevención y autocuidado en relación con la COVID-19 durante el embarazo

Amanda Agostinho[1], Gabrieli Menegueli Lambrine[2], Lina Domênica Mapelli[3], Brenda Magalhães Arantes[4], Thais de Oliveira Gozzo[5]

How to cite this article: Prevention and self-care approaches of COVID-19 during pregnancy. Rev Enferm Atenção Saúde [Internet]. 2025 [access:____]; 15(1):e20257352. DOI: https://doi.org/10.18554/reas.v15i1.7352

ABSTRACT

Objective: to identify preventive measures and self-care practices related to COVID-19 among pregnant women. **Method**: observational, descriptive, cross-sectional study conducted in a virtual environment. Pregnant women over 18 years of age with internet access were included. A questionnaire was used with questions about the current pregnancy, COVID-19, and public health measures in place. Descriptive analysis of qualitative variables, central tendency, mode, with minimum and maximum values. **Results**: 46 pregnant women. All underwent prenatal care. Regarding COVID-19, the internet was the main source of information; most adhered to preventive measures and were immunized. It is noteworthy that the guidance received on COVID-19 during prenatal care was not sufficient to clarify doubts and/or questions about the vertical transmission of COVID-19 during breastfeeding. **Conclusions**: weaknesses were observed in the guidance and/or health education strategies used by health professionals.

Descriptors: Pregnancy; COVID-19; Attitude to Health; Prenatal Care.

[1] Bachelor's Degree in Nursing from the Ribeirão Preto School of Nursing at the University of São Paulo. https://orcid.org/0000-0001-5239-1187.
[2] Undergraduate in Nursing at the Ribeirão Preto School of Nursing at the University of São Paulo. https://orcid.org/0000-0001-5763-9719.
[3] RN. PhD student in the Postgraduate Program in Public Health Nursing at the Ribeirão Preto School of Nursing at the University of São Paulo. https://orcid.org/0000-0002-3744-8154. Email:linamapelli@usp.br.
[4] RN. PhD student in the Postgraduate Program in Public Health Nursing at the Ribeirão Preto School of Nursing at the University of São Paulo. http://orcid.org/0000-0003-0337-8773. Uberlandia, Minas Gerais, Brazil.
[5] RN. PhD in Nursing. Associate Professor in the Department of Maternal and Child Health and Public Health at the University of São Paulo at Ribeirão Preto School of Nursing. https://orcid.org/0000-0002-7687-9459.

RESUMO

Objetivo: identificar medidas de prevenção e autocuidado quanto à COVID-19 pelas gestantes. **Método:** estudo observacional, descritivo, de corte transversal, realizado em ambiente virtual. Foram incluídas gestantes com mais de 18 anos de idade e com acesso à *internet*. Empregou-se um instrumento com questões sobre a gestação atual, COVID-19 e medidas de saúde pública instituídas. Análise descritiva de variáveis qualitativas, tendência central e de posto, com valores mínimos e máximos. **Resultados:** 46 gestantes. Todas realizaram o pré-natal. Quanto à COVID-19, a *internet* foi a principal fonte de busca por informações; a maioria aderiu às medidas de prevenção e foram imunizadas. Destaca-se que, orientações recebidas sobre COVID-19 no pré-natal não foram suficientes para esclarecer dúvidas e/ou questionamentos da transmissão vertical da COVID-19 no aleitamento materno. **Conclusões:** observou-se fragilidades em orientações e/ou estratégias de educação em saúde utilizadas pelos profissionais de saúde.

Descritores: Gravidez; COVID-19; Atitude Frente à Saúde; Cuidado Pré-natal.

RESUMEN

Objetivo: identificar medidas de prevención y autocuidado relacionadas con la COVID-19 por parte de las mujeres embarazadas. **Método**: estudio observacional, descriptivo, transversal, realizado en un entorno virtual. Se incluyeron mujeres embarazadas mayores de 18 años con acceso a Internet. Se utilizó un instrumento con preguntas sobre el embarazo actual, la COVID-19 y las medidas de salud pública establecidas. Análisis descriptivo de variables cualitativas, tendencia central y de posición, con valores mínimos y máximos. **Resultados**: 46 mujeres embarazadas. Todas realizaron la atención prenatal. En cuanto a la COVID-19, internet fue la principal fuente de búsqueda de información; la mayoría se adhirió a las medidas de prevención y se vacunó. Cabe destacar que las orientaciones recibidas sobre la COVID-19 en la atención prenatal no fueron suficientes para aclarar dudas y/o preguntas sobre la transmisión vertical de la COVID-19 durante la lactancia materna. **Conclusiones**: se observaron deficiencias en las orientaciones y/o estrategias de educación en salud utilizadas por los profesionales de la salud.

Descriptores: Embarazo; COVID-19; Actitud Frente a la Salud; Atención Prenatal.

INTRODUCTION

With the spread of the SARS-COV-2 virus (Severe Acute Respiratory Syndrome Coronavirus 2), the world revisited the feelings of fear, anguish and sadness once experienced during the Spanish Flu of 1918 to 1920, culminating in disruptions to global health.[1]

This virus is responsible for the atypical pneumonia known as COVID-19 and is transmitted mainly by droplets during close and unprotected contact with an infected person. Despite its high transmissibility, it has low pathogenicity, with 80% of symptomatic patients developing the mild form of the disease, such as flu-like syndrome, dry cough, anosmia, ageusia, fever and/or nonspecific symptoms such as diarrhea, headache, myalgia or fatigue. However, the range of symptoms is large and can be potentially fatal.[2]

In 2020, an online study conducted in Brazil pointed to the existence of barriers to adherence to preventive care, such as socioeconomic factors, housing conditions, mental health and individual perception of care and its impacts.[3] In view of this, access to priority health areas, such as prenatal care, faced unprecedented challenges in ensuring continuity of care, meeting demand and minimizing the risk of COVID-19 contagion.[4]

Pregnant women are considered a risk group for infections due to changes in physiological functions during the pregnancy-puerperal cycle, the state of immunosuppression and changes in hormonal levels, which favor susceptibility to SARS-COV-2 and a greater likelihood of developing pneumonia or other consequences.[5] Even though they are considered a risk group for COVID-19, the recommendations for prevention are the same for the general population, with an emphasis on early diagnosis and timely identification of severe cases.[2]

Vaccination against COVID-19 was introduced in Brazil in early 2021, following the National Plan for the Operationalization of Vaccination Against COVID-19, available in its second edition (2022). This document reinforces recommendations for pregnant women, postpartum women and lactating women, in addition to stating the already proven safety of the administration of the vaccines.[6]

Since the beginning of the pandemic, it has been accompanied by fear, lack of information and unpreparedness to deal with health recommendations.[7] However, the results of a study showed that when people receive information and acquire knowledge about COVID-19, there is a favoring of preventive attitudes.[3] Specifically in pregnancy, a study carried out in Nigeria with 430 pregnant women indicated that the population was aware of and used practices to prevent the disease.[8] Meanwhile, a study carried out in Turkey with 172 pregnant women showed that 80% felt vulnerable to the disease, in addition to having doubts about the type of delivery (45%) and breastfeeding (50%) during the pandemic.[9] And in the study carried out in Colombia with 946 pregnant women, it was concluded that there were doubts in the knowledge and information about COVID-19 among pregnant women, such as the risk of vertical transmission and congenital malformations.[10]

Despite the cultural differences in the studies cited, they highlight the vulnerability of pregnant women, with doubts and misconceptions about COVID-

19. In addition, they point to the need for new information to understand COVID-19 and how it could impact the health of women and their babies.[10] Knowing these aspects can be an important strategy for the development and implementation of educational actions, to demystify beliefs and show the importance of adopting recommendations for the prevention and transmission of COVID-19.[8,10]

Thus, the objective of this study was to identify the prevention and self-care measures employed by pregnant women, to understand their understanding of COVID-19 and the main sources of information used.

METHODS

This is an observational, descriptive, cross-sectional study conducted in a virtual environment with the research being publicized on Facebook and Instagram pages aimed at pregnant women. All women active in these groups were invited to participate. Women over the age of 18, pregnant, and with internet access were included. The research was conducted from December 2021 to April 2022.

Women who met the inclusion criteria accessed the research link, where they were directed to the Free and Informed Consent Form (FICF) and the online questionnaire.

To collect data, a form was created based on recommendations from national and international public health agencies, as well as scientific studies.[2,8,10] The form was created on the Google Forms platform and consisted of three stages, in addition to the acceptance to participate in the research, together with the TCLE.

The first stage consisted of sociodemographic questions, such as housing and employment status; the second stage dealt with the current pregnancy and its characteristics, such as prenatal care, existence of chronic or gestational diseases, previous or current contamination by COVID-19; and the third stage covered both knowledge about COVID-19 and its impact on pregnancy, as well as practices related to prevention and self-care.

The data obtained were organized in a spreadsheet with computational support from Excel 2010® software (Microsoft Office). Based on the objectives of the study, descriptive analyses, central tendency and dispersion were performed for the numerical variables and simple frequency for the categorical variables.

This study was evaluated and approved by the Research Ethics Committee (CEP) of EERP-USP (Opinion

Number: 4,632,796; CAAE: 43626820.3.0000.5393), according to the recommendations of Circular Letter 2/2021, referring to research in the online modality.

RESULTS

Forty-six pregnant women participated in this study, of whom 45.7% were between 18 and 30 years of age (mean of 37.7 years and SD = 6.98), 65.2% had a partner and 41.3% had completed higher education. The majority (76.1%) lived in cities of DRS XII (Regional Health Department), 63% were economically active and for 69.56% of them, only one person contributed financially to household expenses. Among the participants, 76.1% lived with another adult in the household and 73.9% reported that there were no children in the household (Table 1).

Table 1. Distribution of participants according to age, city, marital status, education, residents and taxpayers in the residence and work situation. Ribeirão Preto-SP.

Variable	N (%)
Age	
18 to 30	21 (45.7)
31 to 40	20 (43.6)
41 to 50	5 (10.9)
City	
DRS XIII	35 (76.1)
Other cities in the State of São Paulo	4 (8.7)
Other States	7 (15.2)
Marital status	
Single	6 (13)
With partner	40 (87)
Years of Study	
Incomplete high school	1 (2,2)
Completed high school	12 (26.1)
Incomplete higher education	3 (6.5)
Completed higher education	28 (60.9)
They didn't answer	2 (4.4)
Number of children in the house	
0	34 (73.9)
1	9 (19.6)
2	3 (6.5)
Adults living together	
0-1	37 (80.4)
2-3	6 (13.1)
4-5	3 (6.5)
People who contribute financially	

in the house	
1	32 (69.6)
2 or more	14 (30.5)
Work situation	
Registered employee	31 (67.3)
Autonomous	7 (15.2)
Others*	8 (17.3)

Caption:*Others- student, housewife, unemployed, unregistered employee.

Regarding obstetric history, 67.4% of participants were pregnant for the first time, 97.8% had a single fetus and 86.6% had never had an abortion. 19 of them were in the third trimester when they participated in the study. All participants received prenatal care and started within 12 weeks of pregnancy, and 71.7% used supplementary health care. The majority (76.1%) of participants did not have a chronic disease before pregnancy, but 13% were referred for high-risk prenatal care and gestational hypertension was the most frequent reason (6.52%) (Table 2).

Table 2. Distribution of participants according to obstetric history. Ribeirão Preto-SP.

Variable	N (%)
Diagnosis of chronic disease before pregnancy	
No	35 (76.1)
High blood pressure	4 (8.7)
Diabetes	3 (6.5)
Obesity	2 (4.3)
Others	7 (15.2)
Previous pregnancies	
1	8 (17.4)
2 or more	7 (15.2)
Number of living children	
1	13 (18.3)
2	7 (15.2)
Abortions	
None	38 (82.6)
1	4 (8.7)
2 or more	4 (8.7)
Gestational age at the time of data collection	
≤13 weeks	12 (26.1)
Between 14 and 27 weeks	15 (32.6)
≥28 weeks	19 (41.3)
Prenatal location	
SUS	10 (21.7)
supplementary health	36 (78.2)
Gestational age at the start of prenatal care	
1 to 5 weeks	23 (50)

6 to 10 weeks	19 (41.30)
11 to 12 weeks	4 (8.69)
Risky prenatal care	
No	40 (87)
Yes	6 (13)
Cone disease developed during pregnancy	
No	40 (86.9)
Gestational hypertension	3 (6.5)
Gestational diabetes	2 (4.3)
Others	1 (2.17)

Source: prepared by the authors.

Fear of contracting COVID-19 was present for 60.9% of participants, with 76.1% not having contracted COVID-19 before pregnancy, and 10.9% contracting it during pregnancy. The main forms of prevention used during pregnancy were wearing a face mask when leaving the house (97.8%) and hand hygiene with alcohol gel (95.7%). Regarding the forms of transmission, the most cited was by droplets (84.8%) and the most mentioned forms of prevention were avoiding crowds (91.3%) and avoiding touching the eyes, nose and mouth with dirty hands (91.3%). Furthermore, when asked about the symptoms of the disease, the most cited were: fever (93.5%), headache (87%) and difficulty breathing (87%) (Table 3).

The main sources of information used by pregnant women were: internet (73.9%), social networks (54.3%), health professionals (52.2%), television (47.8%). 13% said they did not seek information (Table 3).

Table 3. Distribution of participants according to knowledge about COVID-19: symptoms, transmission and prevention. Ribeirão Preto-SP.

Variable	N (%)
How afraid are you of catching COVID-19?	
Very scared	28 (60.9)
Reasonable fear	12 (26.1)
Little or no fear	6 (13)
Did you have COVID-19 BEFORE pregnancy?	
No	35 (76.1)
Yes, but I didn't need to be hospitalized.	9 (19.6)
I don't know how to answer	2 (4.3)
Did you have COVID-19 DURING pregnancy?	
No	41 (89.1)
Yes, but I didn't need to be hospitalized.	5 (10.9)
How is the COVID-19 virus transmitted?	
Droplet of saliva in the air	39 (84.8)

Handshake with someone infected	37 (80.4)
Hugging and/or kissing someone who is infected	36 (78.3)
Touching a contaminated surface	36 (76.1)
Sharing objects	33 (71.7)
I don't know	3 (6.5)
What are the symptoms of COVID-19?	
Fever	43 (93.5)
Difficulty breathing	40 (87)
Headache	40 (87)
Dry cough	33 (71.7)
Tiredness	31 (67.4)
Sore throat	29 (63)
Runny nose	28 (60.9)
Diarrhea	25 (54.3)
Weakness	23 (50)
Muscle pain	21 (45.7)
Cough with phlegm	7 (15.2)
Others*	10 (21.8)
I don't know	1 (2,2)
How to prevent COVID-19?	
Avoid crowds	42 (91.3)
Avoid touching your eyes, nose and mouth with dirty hands	42 (91.3)
Do not hug and/or kiss someone who is infected	40 (87)
Do not share objects	39 (84.8)
Do not shake hands with someone who is infected	36 (78.3)
Do not touch contaminated surfaces	33 (71.7)
Take medication	5 (10.9)
I don't know	1 (2,2)
Where do you usually look for information about COVID-19?	
Internet	34 (73.9)
Social media	25 (54.3)
With health professionals	24 (52.2)
Television	22 (47.8)
Family members	10 (21.7)
Newspapers	10 (21.7)
Friends	8 (17.4)
I'm not looking for information	6 (13)
Magazines	3 (6.5)

***Caption:**Others- weight loss, night sweats, vaginal bleeding, nose/mouth bleeding.

During prenatal care, 36 pregnant women received information about COVID-19, and the main prevention measures adopted by them were: use of a mask when leaving home (97.8%) and use of alcohol gel (95.7%) (Table 4).

The majority (87%) believed that pregnant women were at greater risk of contracting the disease, 50% agreed with

the statement that the disease could cause malformations and fetal death, and 43.5% that it could lead to prematurity. When asked about breastfeeding, 35.6% believed it was impossible and 33.6% did not know how to answer. In addition, 40% responded that COVID-19 could be transmitted from mother to baby, both during pregnancy and breastfeeding (Table 4).

Regarding vaccination, only one participant reported not having been vaccinated for fear of adverse reactions, 97.8% received at least two doses of the vaccine and 62.2% did not change their preventive care after vaccination (Table 4).

Table 4. Distribution of participants according to knowledge about COVID-19 and prevention methods. Ribeirão Preto-SP.

Variable	N (%)
Did you receive information about COVID-19 during your prenatal care?	
Yes	36 (78.3)
No	10 (21.7)
What protective measures are you using DURING pregnancy?	
Use of a mask when leaving the house	45 (97.8)
Alcohol gel	44 (95.7)
Social distancing	39 (84.8)
Cover your mouth and nose when sneezing and coughing	34 (73.9)
Do not share objects	32 (69.6)
Keep environments ventilated and airy	33 (71.7)
Frequent hand washing	32 (69.6)
Social isolation	15 (32.6)
Use of supposedly preventive medication	1 (2,2)
Do you believe that COVID-19 is more dangerous for pregnant women?	
Yes	40 (87)
No	2 (4.3)
I don't know how to answer	4

	(8.7)
Do you believe that COVID-19 can cause malformation and/or death of the baby?	
No	5 (10.9)
Yes, malformation and death	23 (50)
Yes, bad formation	2 (4.3)
Yes, death	6 (13)
I don't know how to answer	10 (21.7)
Do you think your birth could happen early because of COVID-19?	
Yes	20 (43.5)
No	15 (32.6)
I don't know how to answer	11 (23.9)
Do you believe that COVID-19 makes breastfeeding impossible?	
Yes	16 (35.6)
No	14 (31.1)
I don't know how to answer	15 (33.3)
Do you believe that COVID-19 can be transmitted from mother to baby during pregnancy and/or through breast milk?	
No	7 (15.6)
Yes, during pregnancy and through milk.	18 (40)
Yes, only during pregnancy	7 (15.6)
Yes, just for the milk	3 (6,7)
I don't know how to answer	10 (22.2)
How many vaccine doses were taken?	
Only the 1st dose	1 (2,2)
2 doses or more	44 (95.6)
Chose not to get vaccinated	1 (2,2)
Have your prevention habits changed after vaccination?	

Yes, I don't prevent myself anymore	2 (4.4)
Yes, some habits have changed.	15 (33.3)
No, no habits have changed.	28 (62.2)

Source: prepared by the authors.

DISCUSSION

Issues observed in investigations into COVID-19 highlighted the importance of health education during prenatal care, especially to raise awareness about preventive measures, self-care and the risks of becoming infected during pregnancy.

During prenatal care, 78.3% of participants received some information about COVID-19. Participants were attending prenatal care regularly. When asked about the main sources of information used to stay up to date on COVID-19, the internet and social media were the most cited, with 73.9% and 54.3%, with healthcare professionals coming in third, cited by 52.2% of participants. Worldwide, pregnant women are considered a risk group for COVID-19 and therefore it is essential that healthcare units take responsibility for recommendations during care for pregnant and postpartum women.[2]

It can be observed that most participants presented gaps in their knowledge about COVID-19, highlighting how the disease could affect pregnancy and the baby/newborn, data corroborated in several studies carried out in different countries with different development indices.[8-9,11] Fear of contracting COVID-19 was also expressed by 60.7% of pregnant women, which was also observed in different studies.[8-9,11]

The internet and social networks were the main resources that pregnant women used to search for information. Although the internet has become a popular medium for learning about health and investigating one's own health condition, there is a lot of inaccurate information online, and people can easily become misinformed.[12] As demonstrated by the study, which used 166 English-language videos posted on TikTok with the hashtag #coronavirus, moderate misinformation was present in 36 videos that were viewed an average of 6.8 million times, and high-level misinformation was present in 11 (7%) of the videos that were viewed an average of 9.4 million times.[13]

Similar data were observed by a study that evaluated tweets using different hashtags and keywords related to COVID-19, and the authors concluded that medical misinformation and unverifiable content spread at high speed on social media, putting public safety at risk.[14] Although these studies were not conducted with pregnant women, they show how social networks can often be places where misinformation spreads.

When asked about ways in which the COVID-19 virus is transmitted, the majority (84.8%) believed that it occurs through contact with saliva droplets. The Manual of recommendations for assistance to pregnant and postpartum women during the COVID-19 pandemic reinforced that contact can be direct, when the person has come into contact with an infected person, or indirect, when the contact is with contaminated surfaces and/or objects used by the infected person.[2]

The symptoms presented by people infected with COVID-19 are related to the respiratory tract, such as dry cough and difficulty breathing.[2] Data mentioned correctly by the participants in this study, in which 93% reported fever as one of the most common symptoms and 87% difficulty breathing and headache.

In a literature review that evaluated the use of masks in reducing COVID-19 infection, the results indicated that there are benefits in using masks as a protective measure. In addition to this measure, association with other actions such as social distancing and adequate hand hygiene contribute to reducing the risk of contamination.[15] In addition, countries that respected social isolation during the pandemic, such as Germany and New Zealand, significantly reduced the daily occurrence of confirmed cases, however, in Brazil, there was no significant decrease due to the low adherence of the population to this measure.[16] The use of masks, alcohol gel and social distancing were used by the participants in this study.

Most participants in this study believed that COVID-19 posed a greater risk to pregnant women, and when observing the Brazilian context in 2020, the rate of hospitalizations in Intensive Care Units (ICU) was 23.13%, with emphasis on the southeast region with 29.75% of affected pregnant women requiring hospitalization. In 2022, with the existence of vaccines, the rate of ICU hospitalizations fell to 10.23%, with emphasis on the northeast region, with 17.26% requiring hospitalization, data that corroborate this statement.[17]

The mortality rate of pregnant women affected by COVID-19 in Brazil in 2020 was 7.21%, with a focus on the northern region, and in 2022 there was a drop to around 1.67%, with a focus on the northeast region.[17] It is understood that the anatomical and immune system changes that occur naturally during pregnancy are sufficient for major complications to arise in the face of respiratory disease, causing pregnant women to enter the risk group for COVID-19.[2] However, it is observed that this risk is associated with other issues, such as the existence or not of morbidities and the region in which they reside.[2]

Regarding the impact of COVID-19 on the fetus, 50% of pregnant women believed that this disease could cause malformation and fetal death. In a literature review, with the aim of evaluating the occurrence of vertical transmission and maternal and fetal complications, the results, to date, do not indicate an association between maternal contamination by COVID-19 and fetal malformations.[18] However, this disease can negatively impact the placenta, hindering blood and nutritional supply to the fetus, which may result in its death.[18]

Regarding transmission from mother to fetus or newborn, 40% of participants believed that it could occur during pregnancy and/or through breast milk, and for 35.6% this factor made breastfeeding impossible. A review study found that vertical transmission via the placenta and/or during childbirth can occur, but in a minority of cases.[19]

The transmission of COVID-19 through breast milk was ruled out due to the absence of the antigen. However, the presence of immune factors was found, which demonstrates that there are no contraindications for breastfeeding by the sick woman.[19] However, the newborn is still at risk of infection through transmission through saliva droplets, therefore, a mask covering the nose and mouth should be worn throughout breastfeeding, changing it after sneezing or coughing, washing hands immediately before picking up the newborn, among other prophylactic measures, emphasizing that the benefits of breastfeeding outweigh the risks and should be maintained whenever possible.[2]

Regarding the impact of COVID-19 infection during pregnancy, 43% of participants believe that there is an increased risk of prematurity. In fact, initial studies have found a positive association between prematurity, intrauterine growth restriction and low birth weight in pregnant women infected

with COVID-19 compared to those not infected with COVID-19. It is worth noting that prematurity in these cases may have occurred as a result of the need to terminate the pregnancy due to the severity of the mother's condition, in order to contain the damage, or even spontaneously.[18]

Regarding vaccination, only one pregnant woman (2.2%) reported having chosen not to get vaccinated, for fear of adverse events. This good acceptance of the vaccine is due to the fact that studies demonstrate its efficacy, given that there was a reduction in the risk of infection and complications from COVID-19 among vaccinated pregnant women when compared to unvaccinated women. In addition, vaccination among pregnant women can protect the fetus through the transfer of antibodies, and surveillance has shown that vaccination among pregnant and postpartum women is safe for both the woman and the newborn.[20] National recommendations reinforce the safety of vaccination in this population group.[6]

Monitoring, reorganization of the network flow, virtual guidance, consultations, risk classification screening, routine prenatal care for pregnant women with COVID-19 symptoms are strategies that assist in the care and demands of pregnant women in the health service, contributing to high-quality nursing care and reliable information and guidance.[4]

CONCLUSIONS

This study found that, although most participants reported that the topic of COVID-19 was addressed during prenatal consultations, they still had gaps in their knowledge about vertical transmission and breastfeeding. In addition, they had doubts about the impact that the infection could have on the fetus and pregnancy, which could directly impact whether or not these pregnant women adhered to the preventive measures adopted.

Based on the data analyzed, it can be concluded that most of the knowledge of pregnant women was acquired through internet searches, i.e., there is a weakness in the guidelines and/or health education strategies used by health professionals who had greater contact and connection with these pregnant women. This theme would be essential in educational actions during prenatal care, especially in raising awareness among pregnant women about preventive measures, self-care and the risks of contamination during pregnancy for themselves and the baby.

Therefore, it became clear that one of the biggest current difficulties is the

dissemination of specific information about this virus, since the use of the internet as a source of information enables the dissemination of information without scientific basis, which distorts reality and weakens prevention campaigns carried out by the health system.

As limitations of the study, it is worth highlighting that data collection was carried out remotely and on an online platform, making it difficult to reach a greater number of participants due to limited internet access by pregnant women or their concerns regarding the risk of data breach.

***Acknowledgements/Sources of research funding:**
Unified Scholarship Program (PUB) of the University of São Paulo (USP), scientific initiation; PIBIC-USP, scientific initiation; National Council for Scientific and Technological Development (CNPq), master's degree in public health nursing, process: 130565/2021-0. Coordination for the Improvement of Higher Education Personnel-Brazil (CAPES) - Financing Code 001.

REFERENCES

1. Neto M, Gomes TO, Cunha CS, Souza HAN, Macena MVM, Fonseca MHS, et al. Lições do passado no presente: notícias da pandemia de gripe espanhola à Covid-19. Rev Bras Enferm. [Internet]. 2022 [citado em 12 dez 2023]; 75(1):e20201161. Disponível em: https://www.scielo.br/j/reben/a/MbQ5XYqMCjy4HyrYN9SrrCG/?format=pdf&lang=pt

2. Ministério da Saúde (Brasil). Secretaria de Atenção Primária à Saúde. Departamento de Ações Programáticas e Estratégicas. Manual de recomendações para a assistência à gestante e puérpera frente à pandemia de Covid-19 [Internet]. 2. ed. Brasília, DF: Ministério da Saúde; 2021. Disponível em: https://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2021/09/manual_assistencia_gestante.pdf

3. Bezerra ACV, Silva CEM, Soares FRG, Silva JAM. Fatores associados ao comportamento da população durante o isolamento social na pandemia de COVID-19. Ciênc Saúde Colet. [Internet]. 2020 [citado em 12 dez 2023]; 25(Supl 1):2411-2421. Disponível em: https://www.scielo.br/j/csc/a/9g4hLHkSSW35gYsSpggz6rn/?format=pdf&lang=pt

4. Araújo TOL, Bezerra MELM, Silva DM, Santos RS, Araújo TS, Santos ALM, et al. Nursing care for pregnant and postpartum women during the COVID-19 pandemic. Brazilian Journal of Science [Internet]. 2022 [citado em 12 dez 2023]; 1(5):32-37. Disponível em: https://periodicos.cerradopub.com.br/bjs/article/view/104/44

5. Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. Lancet [Internet]. 2020 [citado em 12 dez 2023]; 395 (10226):809-815. Disponível em: https://www.sciencedirect.com/science/article/pii/S0140673620303603?via%3Dihub

6. Ministério da Saúde (Brasil). Secretaria de Vigilância em Saúde. Departamento de Imunização e Doenças Transmissíveis. Plano Nacional de Operacionalização da Vacinação contra a Covid-19 [Internet]. Brasília, DF: Ministério da Saúde; 2022

[citado em 20 mar 2025]. 2. ed. Disponível em: https://www.gov.br/saude/pt-br/centrais-de-conteudo/publicacoes/svsa/covid-19/plano-nacional-de-operacionalizacao-da-vacinacao-contra-a-covid-19-pno-2a-edicao-com-isbn/@@download/file

7. Mertens G, Gerritsen L, Duijndam S, Salemink E, Engelhard IM. Fear of the coronavirus (COVID-19): predictors in an online study conducted in March 2020. J Anxiety Disord. [Internet]. 2020 [citado em 12 dez 2023]; 74:102258. Disponível em: https://www.sciencedirect.com/science/article/pii/S0887618520300724?via%3Dihub

8. Anikwe CC, Ogah CO, Anikwe IH, Okorochukwu BC, Ikeoha CC. Coronavirus disease 2019: knowledge, attitude, and practice of pregnant women in a tertiary hospital in Abakaliki, southeast Nigeria. Int J Gynaecol Obstet. [Internet]. 2020 [citado em 12 dez 2023]; 151(2):197-202. Disponível em: https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1002/ijgo.13293

9. Yassa M, Birol P, Yirmibes C, Usta C, Haydar A, Yassa A, et al. Near-term pregnant women's attitude toward, concern about and knowledge of the COVID-19 pandemic. J Matern Fetal Neonatal Med. [Internet]. 2020 [citado em 12 dez 2023]; 33(22):3827-3834. Disponível em: https://www.tandfonline.com/doi/full/10.1080/14767058.2020.1763947?scroll=top&needAccess=true

10. Parra-Saavedra M, Villa-Villa I, Pérez-Olivo J, Guzman-Polania L, Galvis-Centurion P, Cumplido-Romero Á, et al. Attitudes and collateral psychological effects of COVID-19 in pregnant women in Colombia. Int J Gynaecol Obstet. [Internet]. 2020 [citado em 12 dez 2023]; 151(2):203-208. Disponível em: https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1002/ijgo.13348

11. Naqvi F, Naqvi S, Billah SM, Saleem S, Fogleman E, Peres-da-Silva N, et al. Knowledge, attitude and practices of pregnant women related to COVID-19 infection: a cross-sectional survey in seven countries from the Global Network for Women's and Children's Health. BJOG [Internet]. 2022 [citado em 12 dez 2023]; 129(8):1289-1297. Disponível em: https://obgyn.onlinelibrary.wiley.com/doi/epdf/10.1111/1471-0528.17122

12. Swire-Thompson B, Lazer D. Public health and online misinformation: challenges and recommendations. Ann Rev Public Health [Internet]. 2020 [citado em 12 dez 2023]; 41(1):433-451. Disponível em: https://www.annualreviews.org/content/journals/10.1146/annurev-publhealth-040119-094127#

13. Baghdadi JD, Coffey KC, Belcher R, Frisbie J, Hassan N, Sim D, et al. #Coronavirus on TikTok: user engagement with misinformation as a potential threat to public health behavior. JAMIA Open [Internet]. 2023 [citado em 12 dez 2023]; 6(1). Disponível em: https://academic.oup.com/jamiaopen/article-pdf/6/1/ooad013/49315825/ooad013.pdf

14. Yang KC, Torres-Lugo C, Menczer F. Prevalence of low-credibility information on Twitter during the COVID-19 outbreak. arXiv. [Internet]. 2020 [citado em 12 dez 2023]. 5 p. Disponível em: https://arxiv.org/pdf/2004.14484

15. Girardi JM, Andrade AM, Ramos MC, Oliveira LES, Pereira DCR, Silva ET. Uso de máscaras para a redução da transmissão da COVID-19: revisão integrativa. Comun Ciênc Saúde [Internet]. 2021 [citado em 12 dez 2023]; 32(1):17-30. Disponível em: https://revistaccs.espdf.fepecs.edu.br/index.php/comunicacaoemcienciasdasaude/article/view/800/475

16. Houvèssou GM, Souza TP, Silveira MF. Medidas de contenção de tipo lockdown para prevenção e controle da COVID-19: estudo ecológico descritivo, com dados da África do Sul, Alemanha, Brasil, Espanha, Estados Unidos, Itália e

Nova Zelândia, fevereiro a agosto de 2020. Epidemiol Serv Saúde [Internet]. 2021 [citado em 12 dez 2023]; 30(1):e2020513. Disponível em: https://www.scielo.br/j/ress/a/svBDXkw7M4HLDCMVDxT835R/?format=pdf&lang=pt

17. Observatório Obstétrico Brasileiro. OOBr SRAG: Síndrome respiratória aguda grave em gestantes e puérperas [Internet]. 2021 [citado em 24 out 2023]. Disponível em: https://observatorioobstetrico.shinyapps.io/covid_gesta_puerp_br/

18. Cavalcante MB, Cavalcante CTMB, Sarno M, Barini R, Kwak-Kim J. Maternal immune responses and obstetrical outcomes of pregnant women with COVID-19 and possible health risks of offspring. J Reprod Immunol. [Internet]. 2021 [citado em 12 dez 2023]; 143:103250. Disponível em: https://www.sciencedirect.com/science/article/pii/S0165037820301716?via%3Dihub

19. Salvador-Pinos CA, Martinez EZ, Dueñas-Matute SE, Aguinaga RR, Jácome JC, Michelena-Tupiza S, et al. Health of the newborn and breastfeeding during the COVID-19 pandemic: a literature review. Rev Bras Ginecol Obstet. [Internet]. 2022 [citado em 12 dez 2023]; 44(2):311-318. Disponível em: https://journalrbgo.org/wp-content/uploads/sites/4/articles_xml/1806-9339-rbgo-44-3-311/1806-9339-rbgo-44-3-311.pdf

20. Kumar D, Verman S, Mysorekar IU. COVID-19 and pregnancy: clinical outcomes; mechanisms, and vaccine efficacy. Transl Res. [Internet]. 2023 [citado em 12 dez 2023]; 251: 84-95. Disponível em: https://www.sciencedirect.com/science/article/pii/S1931524422001803?via%3Dihub

RECEIVED: 02/02/24
APPROVED: 03/17/25
PUBLISHED: 07/2025