v. 2, n. 73, 2022

International Journal of Health Science

PRENATAL BEHAVIOR OF PREGNANT WOMEN UNDER THE IMPACT OF THE COVID 19 PANDEMIC ON CENTRAL WEST REGION OF SÃO PAULO (SP)

Gabrielly Gomes Hassenteufel
PIC Scholarship; Student of the Nursing Course at the institution: *Fundação Educacional do Município de Assis (FEMA), Assis,SP*

Yasmin Cristina Figueiredo dos Santos
PIC Scholarship; Student of the Nursing Course at the institution: *Fundação Educacional do Município de Assis (FEMA), Assis,SP*

Yaskara Harumi Kato
PIC Scholarship; Medical student at the FEMA*, Assis, SP*

Ana Clara de Rosis Andrade
PIC Scholarship; Medical student at the FEMA*, Assis, SP*

Talita Domingues Caldeirão
Nurse, Doctor in Tocogynecology (UNESP), Specialist in Obstetric Nursing (UNIFESP), Full Professor of the Nursing Course at *FEMA, Assis, SP*

Luciana Pereira Silva
Biologist, Master and Doctor in Applied Immunology and Parasitology, Head Professor of the Nursing Course atFEMA, Assis, SP.

Abstract: Prenatal care reduces many of the negative effects of pregnancy, such as prematurity, low birth weight and detection of abnormalities with the mother and child, serving as a learning moment for the woman and her family. However, the Covid-19 scenario brought an adaptation in this monitoring, bringing a more suitable prenatal care for the moment with fewer face-to-face visits. This work was a cross-sectional retrospective study with a quantitative approach, with the purpose of evaluating the behavior of pregnant women in the face of the impact of the COVID19 pandemic on adherence to prenatal consultations, in the period 2019-2020 through a search carried out in the secondary database available on the Department of Informatics of the Unified Health System (DATASUS). The databases included in this study were obtained from the DATASUS electronic portal, TABNET table of all monthly prenatal consultations in the 2019-2020 period of the Regional Health Care Networks (RRAS 10). It is important to highlight the work of health professionals who are directly involved in facing this pandemic as they had to deal with the risk group, their fears and insecurities in the context of COVID19. It is concluded that there was no significant impact on the number of prenatal consultations in the central west region of são paulo (SP) during the pandemic period, and it may have been favored by the high HDI (0.05) of the region as well as the efficiency of the strategies adopted by the Health units facing the challenge.
Keywords: Prenatal; COVID-19; pregnant women.

INTRODUCTION

The pandemic of *Coronavirus Disease* 2019 (COVID-19), caused by *severe acute respiratory syndrome coronavirus* 2 (SARS-CoV-2), is highly infectious and was first described by Huang et al (2020) in the city of Wuhan (China). The World Health Organization (WHO) recorded in June 2020 more than 8 million cases and more than 450,000 deaths worldwide and these numbers continue to rise (WHO, 2020; HUANG et al., 2020).

Transmission occurs mainly by respiratory droplets, aerosols and the conjunctiva. The clinical spectrum in adults ranges from asymptomatic infection to severe pneumonia and fatal illness. The main clinical symptoms include fever, cough, shortness of breath, myalgia and 10 to 20% of patients develop acute respiratory distress syndrome after 8 to 14 days of illness (VILLELA, 2020; DA SILVA, 2020).

The population groups considered most vulnerable to COVID-19 infection were the elderly, people with chronic or immunosuppressed diseases, health professionals, pregnant women and newborns (WANG et al., 2020).

The prenatal care model is built on expert opinion and tradition, not evidence. Antenatal care was created in the early 1900s to decrease and prevent low birth weight and eclampsia in the baby (ALEXANDER; KOTELCHUCK, 2001).

In the low-risk patient with no comorbidities, it is recommended that visits occur every 4 weeks until a gestational age of 28 weeks, subsequently becoming every 2 weeks until a gestational age of 36 weeks, and then weekly until delivery. Through this prenatal care system, women often receive additional visits for ultrasound and genetic screening (ACOG, 2016).

If a woman is considered to be at high risk for complications due to comorbidities such as chronic hypertension or diabetes, these 14 visits multiply exponentially for greater monitoring of the fetus as well as the mother. Prenatal care is responsible for reducing many

of the negative effects, such as prematurity and low birth weight, so it is essential that the patient is accompanied and adequately performs prenatal care (BRAZIL, 2020).

The current antenatal care framework requires patients to have multiple antenatal office visits, which can multiply exponentially depending on maternal and fetal comorbidities. To avoid the transmission rate of COVID-19 and limit exposure, patients have rescheduled appointments and new strategies have been applied to maintain patient distance and safety. (OLIVEIRA et al., 2021).

Di Mascio et al. (2020) observed that the main complications in pregnant women with COVID-19 were preterm birth, preeclampsia, cesarean section and perinatal death; there have not yet been any relevant clinical cases of vertical transmission, however, it must be noted that these data need to be constantly updated and analyzed and that most research involving this public is still quite limited, since the population of the studies is monitored for a short period of time. and the sample number may not be enough.

Pregnant women must follow the same recommendations to avoid contamination by the virus, however, there is still a great additional concern for this public due to the potential exposure provided by prenatal consultations, complications during pregnancy, labor and postpartum care. childbirth (decision to separate from the newborn mother, breastfeeding, child care, increased risk of postpartum depression during the pandemic) (BERGUELLA et al., 2020).

Therefore, this study aims to compare the behavior of adherence to prenatal consultations in the context of the Coronavirus (COVID-19) pandemic in the provision of obstetric care in the period 2019-2020 in the period 2019-2020 in central west region of São Paulo (SP).

METHODOLOGY

STUDY DESIGN

This was a retrospective cross-sectional study with a quantitative approach, with the purpose of evaluating the behavior of pregnant women in the face of the impact of the COVID19 pandemic on prenatal consultations, in the period 2019-2020 through a search carried out through secondary data. available on the DATASUS website.

STUDY LOCATION AND POPULATION

The study location was the central west region of São Paulo (SP) represented by the RRAS 10 of Marília. In 2010, the Health Care Networks (RAS) were structured as a strategy to (i) overcoming the fragmentation of care and management and (ii) improving the political-institutional functioning of the Unified Health System (SUS) (BRASIL, 2010).

The population of this study was all pregnant women registered in the DATASUS system who underwent prenatal care in the macro-region of Marília, which represents most of the central west region of São Paulo (SP). Table 1 presents the 2010 Regional Health Networks (RRAS) and the total population number of each location.

Figure 01 represents the distribution of the Regional Health Care Networks (RRAS) in the state of São Paulo. RRAS- Marília was chosen because it comprises the largest number of municipalities

STATISTICAL ANALYSIS

The data obtained were recorded in absolute numbers and the level of statistical significance was determined with $p = 0.0277$, presented in tables and figures using Microsoft Word Software, Excel and SPSS (Statistical Package for the Social Sciences).

Regional Health Care Network (RRAS).	Health issues and the regions	Number of citites	Population in 2010
1	Grande ABC	7	2.551.328
2	Guarulhos e Alto do Tietê	11	2.663.739
3	Franco da Rocha	5	517.675
4	Mananciais	8	986.998
5	Rota dos Bandeirantes	7	1.710.732
6	São Paulo	1	11.253.503
7	Baixada Santista and Vale do Ribeira	24	1.937.702
8	Itapeva, Itapetininga and Sorocaba	48	2.243.016
9	Lins, Bauru, Jaú, Vale do Jrurumirimand Polo Cuesta	68	1.624.623
10	Adamantina, Tupã, Assis, Marília andOurinhos	62	1.068.408
11	Alta Paulista, Extremo Oeste Paulista, Alta Sorocabana, Alto Capivari and Pontal do Paranapanema	45	722.192
12	Santa Fé do Sul, Jales, Fernandópolis, Votuporanga, São José do Rio Preto, José Bonifácio, Catanduva, DosLagos dos DRS II, Central do DRS II,Dos Consórcios do DRS II	141	2.189.671
13	Alta Mogiana, Três Colinas, Alta Anhanguera, Vale das Cachoeiras, Aquífero Guarani, Horizonte Verde,Centro Oeste do DRS III, Norte do DRS III, Central do DRS III, Coraçãodo DRS III, Sul de Barretos, Norte deBarretos	91	3.309.743
14	Araras, Rio Claro, Limeira ePiracicaba	26	1.412.584
15	Rio Pardo, Mantiqueira, Baixa Mogiana, Oeste VII and Campinas	42	3.577.072
16	Bragança and Jundiaí	20	1.128.619
17	Circuito da Fé, Região Serrana, Litoral Norte and Alto V. Paraíba	39	2.264.594

Table 1- Regional Health Care Networks (RRAS) of the State of São Paulo - 2010.

Source: IBGE 2010.

Geographical distribution of health care regions

Figure 1. Geographical Distribution of Regional Health Care Networks (RRAS).

Source: São Paulo 2012

The calculation of the relative variation (%) and the absolute variation was performed by analysis with Statistica Software and the parametric T-Student test.

RESULTS AND DISCUSSIONS

The COVID-19 scenario brought an adaptation in the monitoring of pregnant women, bringing a more adequate prenatal care for the pandemic moment with fewer face-to-face visits (OLIVEIRA et al., 2021).

In Brazil, in the group of pregnant women, there was a high rate of maternal mortality from COVID-19 between February 26 and June 18, 2020, with 978 positive cases recorded in this period, resulting in 124 deaths, of which 9.8% were pregnant and 22 were pregnant 3% postpartum (TAKEMOTO et al., 2020).

Studies indicate that pregnant women at any gestational age and in the postpartum period have favorable conditions for complications from COVID-19, possibly due to the relative immunodeficiency associated with physiological adaptations and organic responses to infections.

Risks must not be overwhelmed and pregnant women need to be advised to prevent infection in pregnancy (WESTGREN et al., 2020).

Social distancing and remote contact for obstetric evaluations and identification of signs of COVID-19 were recommended by scholars and international health bodies, as protective measures, avoiding unnecessary travel during pregnancy and the puerperium to health units at a time of pandemic (RASMUSSEN et al., 2020).

The databases included in this study were obtained from the electronic portal of the Department of Informatics of the Unified Health System (Datasus) TABNET table of all prenatal consultations month by month in the period 2019-2020 of RRAS 10 - Marilia representing the Midwest Paulista (SP) (Figure 2).

The monthly average of prenatal consultations carried out by the Public Health System was 2,189, both in the comparison of absolute differences and relative differences. When observing the behavior of Figure 2, it is evident that there was a numerical impact but not a statistical impact of the pandemic on the behavior of adherence to prenatal care in RRAS10 (Marília) in view of the total sample.

This may have happened due to health strategies that were successful in the distribution of prenatal consultations, in addition to their effectiveness throughout the pandemic; local programs, awareness campaigns and also for its good HDI, with SP being considered a model state in controlling the pandemic. Factors that may have favored the results of women's adherence to prenatal consultations.

The WHO recommendations on antenatal care a minimum of eight contacts can reduce perinatal deaths by up to 8 per 1,000 births when compared to a minimum of four visits. As for risk, we understand about mortality.

In Brazil, the latest update of the Clinical Management Protocol for COVID-19 infection included pregnant women at any gestational age, postpartum women up to two weeks after delivery, including those who had an abortion or fetal loss, in the group of subjects with conditions and risk factors. for possible complications of the COVID-19 infection, reinforcing the special attention to be given to this group (BRASIL, 2020).

The interruption of care at the beginning of the pandemic or fear of contamination could influence the performance of prenatal consultations for pregnant women, causing a problem in the next 9 to 12 months of the year 2021. It is important to highlight the work of health professionals and students

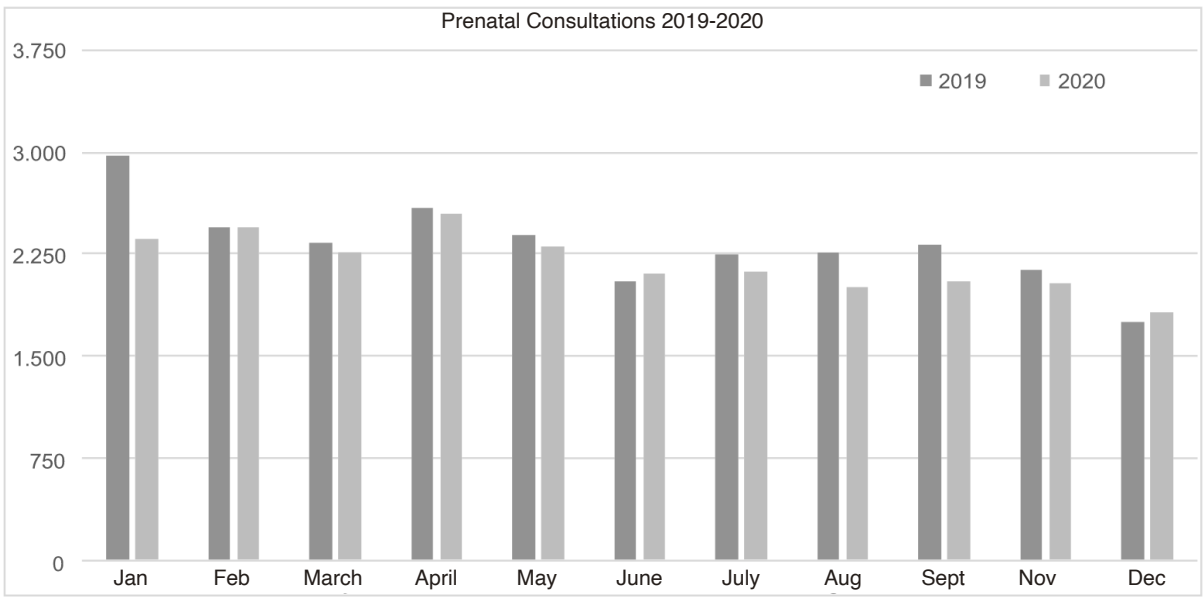

Figure 2. Comparison of the number of prenatal consultations in the central west region of São Paulo (SP) in the period 2019 and 2020. (there was no statistical difference p =0.0277).

health professionals who are directly involved in fighting this pandemic (OLIVEIRA et al., 2021).

The results compiled from secondary and consolidated data for the period from 2019 to 2020 in the central west region of São Paulo (SP) represented by the RRAS10 of Marília showed that there was no statistically significant difference, showing that there was no downtime in care, but a slight decrease (Figure 2).

In addition, the Human Development Index (HDI) of the region is 0.805, considered high in relation to the state of São Paulo. The HDI and the strategies adopted to avoid losses in prenatal consultations, such as the active search for absent patients, prenatal teleconsultation, in addition to the health care adopted by the units, reduced the non-spreading of the virus in this very vulnerable clientele.

According to the United Nations Development Program (UNDP) the Human Development Index ranges from 0 to 1, and in this list it is divided into five categories: very high HDI (0.800 – 1.000), high HDI (0.700 – 0.799), medium HDI (0.600 0.699), low HDI (0.500 –0.599) and very low HDI (0.000 – 0.499). The index calculation is composed of life expectancy at birth (HDI-L), education (HDI-E), and GDP in Purchasing Power Parity per capita (HDI-R) collected at the national or regional level, and aims to measure the standard of living.[2] The index was developed in 1990 by economists Amartya Sen and Mahbub ul Haq, and has been used since 1993 by the United Nations Development Program (UNDP, 2021).

Faced with the COVID-19 pandemic, pregnant women are part of the risk group. Knowing this and the importance of prenatal care, the Ministry of Health, in its Manual of Recommendations for Assistance to Pregnant Women and Puerperal Women in the Face of the COVID-19 Pandemic, established some adjustments so that this care was not compromised (TAKEMOTO et al, 2020; ANVISA, 2021).

Consultations, when possible, can be carried out by the PHC teams by tele-service and by telephone contact to provide follow-up and guidance to pregnant women, but face-to-face consultations must be maintained, following the schedule: between the 11th and 14th week, between the 20th and 22nd week, between 26th and 28th week, 32 weeks, 35 weeks, 37 weeks (when the RT-PCR will be collected), 39 weeks and weekly until delivery (ANVISA, 2021).

To further reduce exposure to SARS-CoV-2, teleconsultations can also be carried out at the following gestational ages: below 11 weeks, between 16-18 weeks, at 32 weeks, 38 weeks and after hospital discharge. Each case must be carefully evaluated, and it is extremely important that, in this circumstance, the professional redoubles attention to the warning signs and symptoms traced by the anamnesis, to ensure even more good follow-up. There are certain populations that do not have access to the internet or device with video capabilities, therefore, telephone contact is the alternative used.

Pregnant women at usual risk must be concentrated in face-to-face consultations, following the following chronology: 11, 20, 28, 32, 35, 37, 39 weeks and then weekly until delivery. for users with respiratory symptoms. Before these meetings take place, the team is expected to contact the pregnant woman, to do a screening and find out if there are respiratory symptoms or similar complaints.

The wish that the teams that provide care to pregnant women, stay exclusively with this group, so that there is no exposure and risk of contamination of the same.

It is clear from the results obtained in the research that prenatal care in the Center-West of São Paulo did not suffer significant deficiencies, and probably followed at least the basic steps determined by Anvisa so that consultations took place without major losses. The planning of interventions and strategies promoted prevention in the Midwest region of São Paulo (SP) on the risk behavior of pregnant women when attending prenatal consultations.

FINAL CONSIDERATIONS

It is concluded that there was no significant impact on the number of prenatal consultations in the central west region of São Paulo (SP) during the pandemic period, which may have been favored by the high HDI of the region as well as the efficiency of the strategies taken by the Health units in the face of the challenge.

FINANCIAL SUPPORT

This work was carried out with financial support from the Institutional Scientific Initiation Program (PIC) of the institution:Fundação Educacional do Município de Assis (FEMA) SP – Brazil.

REFERENCES

ANVISA (2021) Manual de Recomendações para a Assistência À Gestante e Puérpera frente à Pandemia de Covid-19. Nota INformativa nº 13/2020 - SE/GAB/SE/MS. Disponível em: http://189.28.128.100/dab/docs/portaldab/documentos/corona/manual_recomendacoes_gestantes_covid19.pd f Acesso 12/10/2021.

ALEXANDER, G. R.; KOTELCHUCK, M. Assessing the role and effectiveness of prenatal care: History, challenges, and directions for future research. *Public Health Reports, 116*(4), 306–316, 2001. https://doi.org/10.1016/S0033-3549(04)50052-3

American College of Obstetricians and Gynecologists. (ACOG). Practice Bulletin Number 167. Screening for fetal aneuploidy. *Obstetrics and Gynecology,* v.*127, n.*5, p.123–137, 2016. https://doi.org/10.1097/AOG.0000000000001406

BERGHELLA, V. Coronavirus disease 2019 (COVID-19): Pregnancy issues [acesso em 22 Jun 2020]. Retrieved from: https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19- pregnancy.2020

BRASIL. Ministério da Saúde. Secretaria de Atenção Especializada à Saúde. **Protocolo de manejo clínico da Covid-19 na Atenção Especializada.** Ministério da Saúde: Brasília, 2020. 48 p.

BRASIL. Ministério da Saúde. Portaria MSGM nº 4.279, de 31 de dezembro de 2010. Estabelece diretrizes para a organização da Rede de Atenção à Saúde noâmbito do Sistema Único de Saúde (SUS). Diário Oficial da República Federativado Brasil, Brasília (DF), 2010 dez 31; Seção 1:88

DA SILVA, A. A. M. On the possibility of interrupting the coronavirus (Covid-19) epidemic based on the best available scientific evidence. **Revista Brasileira de Epidemiologia**, v. 23, p. 1–3, 2020.

DI MASCIO, D., KHALIL, A., SACCONE, G., RIZZO, G., BUCA, D., LIBERATI, M., D'ANTONIO, F. Outcome of Coronavirus spectrum infections (SARS, MERS, COVID 19) during pregnancy: a systematic review and meta-analysis. American Journal of Obstetrics & Gynecology MFM, 2(2), 100107, 2020.

HUANG C, WANG Y, LI X, REN L, ZHAO J, HU Y, ZHANG L, FAN G, XU J, GU X, CHENG Z, YU T, XIA J, WEI Y, WU W, XIE X, YIN W, LI H, LIU M, XIAO Y, GAO H, GUO L, XIE J, WANG G, JIANG R, GAO Z, JIN Q, WANG J, CAO B. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China**. Lancet**. 2020 Feb 15;395(10223):497-506. doi: 10.1016/S0140-6736(20)30183-5.

OLIVEIRA SC, COSTA DG, CINTRA AM, FREITAS MP, JORDÃO CN, BARROS JF, et al. Telenfermagem na COVID-19 e saúde materna: WhatsApp® como ferramenta de apoio. **Acta Paul Enferm.**;34, 2021. [Acessado 12 Outubro 2021], eAPE02893. Disponível em: <https://doi.org/10.37689/acta-ape/2021AO02893>.

PNUD, 2021. Disponível em: https://www.br.undp.org/content/brazil/pt/home.html (Acesso 12/10/2021).

RASMUSSEN SA, SMULIAN JC, LEDNICKY JA, WEN TS, JAMIESON DJ. Coronavirus Disease 2019 (COVID-19) and pregnancy: what obstetricians need to know. **Am J Obstet Gynecol.**;222(5):415-26. Review. 2020

TAKEMOTO, ML; MENEZES, MO; ANDREUCCI, CB; NAKAMURA-PEREIRA, M, AMORIM, MM; KATZ, L.; KNOBEL, R. The tragedy of COVID-19 in Brazil: 124 maternal deaths and counting. **Int J Gynaecol Obstet**.;151(1):154-6, 2020

VILLELA, D.A.M. The value of mitigating epidemic peaks of COVID-19 for more effective public health responses. **Revista da Sociedade Brasileira de Medicina Tropical**, v. 53, n.4, p. e20200135, 2020.

WANG, L. et al. Chinese expert consensus on the perinatal and neonatal management for the prevention and control of the 2019 novel coronavirus infection (First edition). **Ann Transl Med**, v. 8, n. 3, p. 1-8, 2020.

WESTGREN, M.; PETERSSON, K.; HAGBERG, H.; ACHARYA, G. Severe maternal morbidity and mortality associated with COVID-19: the risk must be downplayed [editorial]. **Acta Obstet Gynrcol Scand**., 99:815-6, 2020.

World Health Organization (WHO). **Novel Coronavírus (COVID-19**) Situation [Internet]. Geneva (CH), 2021. Acessado em 8/12/2021. Disponível em: https://www.who.int/emergencies/diseases/novel-coronavirus-2019