



Impacts of the COVID-19 pandemic on the mother owl program of the VII health region of Pernambuco


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Resumo

Objectives: to analyze the impacts caused by the COVID-19 pandemic on the Mother Owl Program of the VII Health Region of Pernambuco.

Methods: descriptive, cross-sectional and quantitative study, carried out at the VII Regional Health Management, in Salgueiro-PE. Data were collected from the Mother Owl Information System, from August to November 2021, being related to women and children registered from 2019 to March 2021. Adopting a time frame for before and during the pandemic, the Student's t and chi-square tests in the analysis of continuous and categorical variables, respectively.

Results: data from 581 women and 412 children were analyzed. Before the pandemic, there was a higher average number of prenatal consultations ($p < 0.001$) and greater completeness in the children's race data ($p < 0.001$). During the pandemic, there was a lower frequency of breastfeeding in the first hour of life ($p < 0.001$) and of filling in the data regarding maternal education ($p < 0.001$). In addition, no more than 7 childcare consultations were performed ($p < 0.001$).

Conclusions: the assistance of women and children was impacted, mainly with the drop in prenatal and childcare consultations, showing that COVID-19 had a negative impact on the health of people monitored by the Program and on the quality of information inserted in the system.

Palavras-chave COVID-19, Morbimortality, Unified Health System



Introduction

Mother and child mortality rates are indicators of the level of social and economic development of a population, being expressively important the knowledge on social inequalities and the access to basic health resources. The World Health Organization (WHO) considers as acceptable up to 10 infant deaths per 1000 live births, as it still being a problem in public healthcare in both Brazil and Pernambuco, with rates of 11.56 and 11.07 in 2020, respectively.¹

Maternal mortality, defined as being due to obstetric cause between 42 days and one year after birth, is also a relevant health situation in Pernambuco. In the year 2019, 64 maternal deaths occurred, mostly due to socio-economic and health conditions,² a scenario that can be avoided with the reduction of indicators according to global guidelines.³

In this context, in 2007, with the decree number 30.859, the Mother Owl Program (PMC – Portuguese acronym) was created, being modified with Law number 13.959 in 2009. It was implemented in municipalities that presented infant mortality rate higher than 25 to 1000 live births,⁴ with the objective of assuring integral care to pregnant women and children in early childhood in order to mother and child morbimortality in the state.

In the VII Health Region, PMC was implemented in 2012. The Region is composed by seven municipalities: Belém de São Francisco, Cedro, Salgueiro, Serrita, Verdejante, Mirandiba and Terra Nova, with the last two presenting, in 2011, an infant mortality rate of 27.49 and 35.71, respectively, being, accordingly, covered by the Program.²

The activities of the Program are executed in the “Mother Owl Sites”, and encompass the registry and follow-up of women and children up to five years old, with intersectoral actuation and strategic articulation with other points of the health network. It includes also the Cycles of Education and Culture (CEC) where actions focused on literacy and vocational courses for women are developed.⁵

The CEC also offers workshops about food security and basic baby layette for the newborn, since pregnant women perform at least six prenatal consultations. In this way, the program has as strategic axis the access to public policies prioritizing families in vulnerability situation.⁵

Moura⁶ demonstrates in a study that the implementation of the PMC contributed with the decrease of the infant mortality rate and the increase of the amount of prenatal consultations, promoting the expansion of the program in the state. Socio-educational activities offered empower the pregnant woman, and offer knowledge on care in postpartum that may reverberate directly in the decrease of mother and child mortality.

The PMC activities have found a barrier with the onset of COVID-19 pandemic, being performed virtually, including the monitoring of pregnant women and reunions between teams and regional coordination. This change modified the follow-up to mothers and children registered in the program, reverberating both in their health status and in the social sector.

The literature points that COVID-10 pandemic brought changes in gestational outcomes, in obstetric and neonatal interventions and in the operationalization of health services.⁷ Therefore, the aim of this study was to analyze impacts caused by the pandemic in Mother Owl Program in the VII Health Region of Pernambuco.

Methods

A descriptive cross-sectional study with quantitative approach, conducted in the VII Regional Health Management, in Salgueiro-PE, along with the regional coordination of the Mother Owl Program in Pernambuco. Data were collected in the period from August to October 2021, from the Information System (SIS – Mother Owl), being related to the years 2019 to 2021.

Were considered eligible to compose the study data from women and children registered in SIS- MOTHER OWL from 2019 to March 2021. Based on information available in the system, the sample calculation was made posteriorly, considering a 95% confidence interval, confidence limit of 5%, adopting anticipate event frequency of 50% (since it is an unknown value) and a population of 581, it would be necessary a minimum of 232 observations for this study. Sample calculation was executed with the OpenEpi tool.

Data collection was performed by means of a script conceived by the authors themselves encompassing the following variables related to the Mother Owl Program: race/ethnicity of mother and child, schooling, gestational risk, type of delivery and prematurity, breastfeeding in at the first hour of life, registered children, childcare consultations until 1 year, fetal death, gestational age, prenatal consultations, birth weight and Apgar score. The time frame for before or during pandemics was established on March 13, 2020.

Data analysis was performed through descriptive statistics expressed in mean and standard deviation for continuous variables and absolute values and percentage values for categorical variables. The association between categorical variables and time of analysis (before and during pandemic) was made by the chi-square test. While for continuous variables, the Student t test was used.

Data were tabulated in a Microsoft Excel 2010 spreadsheet, and analyzed with the SPSS software, version 22. In the cases in which there were no answers

registered in the system, they were considered as absent values in the statistical analysis. It was considered a level of significance of 5% with a confidence interval of 95%.

It was submitted and approved by the Research and Ethics Committee (CEP – Portuguese acronym) of the *Hospital Otávio de Freitas*, in August 5, 2021, under opinion number: 4.886.132 and CAAE: 48864921.0.0000.5200.

Results

Registry data of 581 women were analyzed, 256 of them registered and followed before the pandemic and 325 during pandemic. Most declared themselves brown (65.6%) and had complete high school (33.4%). It was observed that 84.3% were in habitual gestational risk, with predominance of cesarean delivery, which occurred in 269 women, besides the low occurrence of prematurity (Table 1).

Table 1

General characteristics of the sample of the Mother Owl Program. Pernambuco, 2021.		
Variable	N	%
Race/Ethnicity Mother		65.6
Brown	381	
Schooling		33.4
Complete High School	194	
Gestational risk		
Habitual	490	84.3
High	77	13.3
Preterm birth		
No	394	95.6
Yes	18	4.4
Type of delivery		
Cesarean	269	65.3
Normal	143	34.7
Breastfed in first hour		
Yes	245	42.2
No	41	7.1
Race/ ethnicity child		
Brown	350	85
Registered child		
Yes	408	99.5
No	2	0.5
Childcare consultations until 1 year		
Up to 7 consultations	390	94.7
7 or more	22	5.3
Fetal death		
No	577	99.3
Yes	4	0.7

In addition, a total of 412 children were part of the sample, 201 registered before the pandemic and 211 during

the pandemic. Most were brown (85%), were breastfed in the first hour of life (42.2%) and were registered (99.5%). 94.7% of children performed up to seven childcare consultations until one year of life, and only four cases of fetal death occurred (Table 1). The analysis of Apgar score demonstrated that in the first minute, 47.5% of children had scored 8, whilst most scored 9 (53%) in the fifth minute.

In the bivariate analysis, when relating the continuous variables with the time frame for before or during pandemic, it was observed that only the number of prenatal consultations was modified in relation to the pandemic period, with a mean of 8.68 and 6.15; and standard deviation of 2.927 and 3.602 before and during pandemic, respectively ($p < 0.001$) (Table 2).

Table 2

Association between continuous variables and time of analysis (before and during the pandemic). Mother Owl Program. Pernambuco, 2021.		
Variável	$\bar{x} \pm SD$	p^*
Age in pregnancy		0.174
Before pandemic	25.69 \pm 6.512	
Pandemic	26.45 \pm 6.843	
Prenatal consultations		<0.001
Before pandemic	8.68 \pm 2.297	
Pandemic	6.15 \pm 3.602	
Birth weight		0.240
Before pandemic	3139.19 \pm 550.328	
Pandemic	3214.17 \pm 732.300	

* $p < 0.05$.

The association of categorical variables with the time frame demonstrated that the race of the child presented higher registry frequency in the period before pandemic. Breastfeeding in the first hour of life, childcare consultations and schooling had a reduction in registries during the pandemic. These variables had statistical significance with p value < 0.05 (Table 3).

Discussion

From the results found in the present study, it was observed that the COVID-19 pandemic caused negative impacts in the health of women and children followed by PMC, mainly in data related to prenatal and to the newborn.

In relation to prenatal, there was a decrease in the mean of consultations, a factor that might be related to the concern of contracting the virus in the health services, as well as the social distancing measures. Besides, activities were restructured using the remote model, which resulted in the diminish of care and interruption of follow-up during pregnancy.⁸

Table 3

Association between categorical variables and time of analysis (before and during the pandemic). Mother Owl Program. Pernambuco, 2021.					
Variable	Before the pandemic		Pandemic		p*
	n	%	n	%	
Type of delivery**					0.407
Cesarean	158	63.7	111	67.7	
Normal	90	36.3	53	32.3	
Preterm delivery**					0.144
Yes	14	5.6	4	2.4	
No	234	94.4	160	97.6	
Breastfed in the first hour					<0.001
Yes	186	89.4	59	75.6	
No	22	10.6	19	24.4	
Childcare consultations					<0.001
Up to 7	226	91.1	164	100.0	
7 or more	22	8.9	0	-	
Schooling					<0.001
Complete High School	84	32.8	110	33.8	
Non-informed	20	7.8	71	21.8	
Race/Ethnicity Child					<0.001
Brown	231	93.1	119	72.6	
Non-informed	2	0.8	23	14.0	

* $p < 0.05$; ** The total value diverges from the study sample due to the absence of information which resulted in sample loss for these variables.

Data obtained are contrary to that found in the study of Silva *et al.*,⁹ which demonstrated a decrease of 44% in procedures related to prenatal, besides the diminishing of consultations compared to the period that preceded the pandemic. One of the factors that might be involved in this finding concern the recommendation of the Ministry of Health of having a larger gap between consultations, being the teams responsible for the organization of the dynamics of attendance and follow-up, according to the needs of each pregnant women, in order to hinder risks of exposition to the virus.¹⁰

The prenatal qualified assistance is extremely important to the detection of pathologies, contributing to the reduction of rates of mother and child morbimortality.¹¹ The Basic Care is the proper place to develop this follow-up, where the team should prioritize the reception and qualified listening, besides providing orientation related to care during pregnancy, puerperium and with the newborn.¹²

The drop in prenatal consultations is related to breastfeeding in the first hour of life, for the orientations about the benefits of this practice, since they are informed in accessible language, lead the pregnant women to feel more secure and prepared to the process of breastfeeding.¹³

The present study points to a decrease in breastfeeding in the first hour of life during the pandemic period, which has as a possible cause, the concern of transmitting COVID-19 to the newborn. However, current evidence demonstrate that there is no contraindication in breastfeeding within this context.¹⁴

In this way, breastfeeding, mainly in the first hours of life, should be encouraged even within the pandemic scenario, due to its various benefits to the health of the newborn. In addition, the skin-to-skin contact right after birth contributes to the link between mother and child, helps in the adaptation of the newborn and favors the production of breastmilk.¹⁵

The analysis of data related to children showed that the occurrence of seven or more childcare consultations up to one year of age dropped to zero during the pandemic. This follow-up aims to assess the growth and development of children, besides executing actions of prevention and health promotion.¹⁶

Besides the assistance to infant health, the familiar approach is also essential, being aware of the situations of vulnerability and making possible the improvement of quality of life. The Ministry of Health preconizes, at minimum, seven childcare consultations up to one year of life, being imperative the integrative and humanized care.¹⁷

As situation of emergency in public health caused by the novel coronavirus, the routine consultations were suspended, prioritizing the screening of suspect cases of the disease and assistance in online model, which lead to the interruption of the care to the child.¹⁸ This interruption contributes to the failure of early detection of diseases and deficit in infant development, hindering the execution of timely effective strategic actions.¹⁹

Another consequence of the online model is the possible loss of link between the health team and the

child's family, impairing the maintenance of completeness of care. It was also reported the difficulty in executing the referral and contra-referral to other spots of the network due to constant changes in the attendance dynamics.²⁰

In relation to the variables "maternal schooling" and "race/ethnicity of the child", data pointed to an increase in the absence of registry of them during the pandemic period. Such fact has been discussed over the years, as points out the study of Silvestrin et al.,²¹ which analyzed the fulfillment of the variable maternal schooling through the Live Birth Information System o (SINASC – Portuguese acronym), in which it was observed that, despite of presenting an increasing improvement in information, the incompleteness of data is still expressively present.

The fulfillment of the race/color item for all age ranges also finds some obstacles, but has been reaching a higher completeness over the years in the state of Pernambuco, when health information systems are analyzed.²² The quality of the information in the systems propitiates better knowledge regarding social determinants and impacts of inequalities in the health context, and acts as a base for the execution of strategic actions.²³

Since the study used secondary data, it presents some limitations to the lack of fulfillment of information from the system, as well as the instability of the Mother Owl System, which was offline since April 2021. This fact hindered the update of data, as well as the complement of information related to the period posterior to March, interfering, in this way, with the sample expansion.

Through the results found in the present study, it was possible to observe that the COVID-19 pandemic negatively affected some variables related to PMC in VII Health Region of Pernambuco. The drop in the quantity of prenatal consultations is directly related to other studied data, reverberating in the health situation of women and children assisted by the Program. Besides, the incompleteness of health information systems persists, even with the outbreak of a novel virus.

The research can subsidize the choice for effective strategies and decision-making of managers in face of a situation of public health emergency, by means of the analysis of the main frailties found and the consequent improvement of life quality in the target population.

Authors' contribution

The authors approved the final version of the article and declare no conflict of interest.

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