

Breastfeeding and Emotional Aspects during the Covid-19 pandemic Period in two Counties in the Metropolitan Region of Belém/Pará, Brazil

Paula Rayssa Lobato da Silva¹, Ananda Leticia Silva Cabral¹, Alan de Sousa Nunes¹, Andressa da Silva Pinheiro¹, Bruna Macedo Lopes¹, Bárbara Martins de Sales Santos¹, Natasha Assunção Oliveira¹, Giovana Dias Lima¹, Rosangela Santos Nonato¹, Bárbara Vitória Monteiro Reis Augusto¹, Paula Raimunda Araújo Teixeira¹, Cynara Melo Souza², Vanda Heloiza Marvão Soares², Fabiana Costa Cardoso³, Luísa Margareth Carneiro da Silva³

¹Institute of Health Sciences, Faculty of Nutrition, Federal University of Pará, Brazil

Email: paulalobatto32@gmail.com/ paula.teixeira@icb.ufpa.br

²Santa Casa de Misericórdia Foundation

Email: cynara.souza@santacasa.pa.gov.br

³CECANE/PA, Federal University of Pará, Brazil

Email: luisamargarett@gmail.com

Received: 11 May 2022,

Received in revised form: 07 Jun 2022,

Accepted: 14 Jun 2022,

Available online: 25 Jun 2022

©2021 The Author(s). Published by AI Publication. This is an open access article under the CC BY license

(<https://creativecommons.org/licenses/by/4.0/>).

Keywords —Breast-feeding, Breast milk, Puerperium, Emotional stress, Anxiety.

Abstract—Introduction: The monitoring of women and guidance on the benefits of breast milk are of paramount importance for the mother to choose to breastfeed. It is necessary that the approach is effective and gradual so that she feels pleasure and well-being when practicing the act of breastfeeding. This activity is vulnerable to interference from multiple factors that encompass maternal principles, especially with regard to the conduct of each woman in these circumstances. Maternal insecurity was one of the factors that puerperal women reported presenting and influencing early weaning, since this insecurity may be related to the production of breast milk. Therefore, the present research aimed to describe which emotional aspects were reported by women who breastfed during the pandemic period in two municipalities in the metropolitan region of Belém. Methodology: Quantitative, descriptive and cross-sectional study with the application of an online questionnaire via Google forms. Conclusion: The research results reflect on the importance of investigating factors related to the emotional aspect of women during pregnancy and postpartum periods, in order to prevent and treat these changes or disorders, as they influence maternal health and consequently in the practice of breastfeeding. However, it is important that new research be developed to help health professionals in encouraging this practice that saves so many lives.

I. INTRODUCTION

The act of breastfeeding has its nutritional, social, economic, cognitive and immunological benefits proven

by several studies, especially when this practice extends until the sixth month with exclusive breastfeeding and up

to two years of the child, being complemented with other healthy foods [1].

Monitoring the woman and providing guidance on the benefits of breast milk is of paramount importance for the mother to choose to breastfeed. It is necessary that the approach is effective and gradual so that she feels pleasure and well-being when practicing the act of breastfeeding. This activity is vulnerable to interference from multiple factors that encompass maternal principles, especially with regard to the conduct of each woman in these circumstances. Maternal insecurity was one of the factors that puerperal women reported presenting and influencing early weaning, since this insecurity may be related to the production of breast milk. In addition to the interferences that can occur during these phases, which also contribute to the nursing mother presenting some obstacle when breastfeeding and even in the production of breast milk [2].

During the lactation period in the puerperium, the benefits that breastfeeding brings to women's health are diverse and persist even after the interruption of milk production. However, it is important that breastfeeding continues until the child is two years old or more. The lactating women reported that they had fewer complications related to physical and mental health, such as postpartum depression, attenuation of stress and anxiety, in addition to helping to increase self-esteem [3].

The importance of breastfeeding is exposed in several studies, there are several benefits that this practice brings to maternal and child health. However, it is important that the woman breastfeeds the child exclusively for up to six months and up to two years of age in a complementary way. However, the suspension of breastfeeding may be related to emotional issues, thus leaving the mother and child vulnerable to various risks [4].

In the last two years we have been affected by SARS-CoV-2, which is the virus responsible for the Coronavirus pandemic, first, the virus was discovered in China. In Brazil, the first case was reported in February 2020. The Coronavirus has a high transmission capacity, especially between person-to-person contact, by respiratory droplets [5].

The elderly, those with chronic diseases and pregnant women, postpartum women and newborns are referred to as groups in which the coronavirus infection can manifest itself in a more aggravating way, bringing concerns, uncertainties and doubts regarding breastfeeding in mothers who were infected by the virus. However, research ensures that breastfeeding increases the immunity

of babies breastfeeding is recommended after delivery, but with health protocols being implemented so that there is no risk of infection [6].

Arrais et al. [7] carried out a survey with the intention of verifying what fears pregnant women had regarding the infection of the coronavirus and found that 73% were afraid of vertical transmission of covid-19 through breastfeeding, in this same survey there was an expressive percentage of mothers with the concern of not being able to make skin-to-skin contact, since this act is essential to create a connection between the mother and her baby, in addition to the first feeding in this experience. These concerns and fear can trigger psychopathological symptoms that may influence breastfeeding.

Considering these statements above, the objective of this research was to describe which emotional aspects were reported by women who breastfed during the pandemic period in two municipalities in the metropolitan region of Belém/PA.

II. METHODOLOGY

2.2 Type of study

Quantitative, descriptive and cross-sectional study with the application of an online questionnaire via Google forms.

2.2.1 Study Population

The population of this study consisted of mothers, reached through an internet questionnaire, after approval by the Research Ethics Committee/Platform Brazil (ICS-UFPA).

2.2.2 Research Location

The research was carried out in the cities of Belém and Ananindeua – PA/Brazil.

2.2.3 Sampling

The sample was simple random, constant of women, within the above criteria, who were reached by the form through the sharing of a link via the internet.

2.2.4 Characterization of sociodemographic and economic variables

Schooling was classified into eight cut-off points: “Child school”, “Incomplete elementary school”, “Complete elementary school”, “Incomplete high school”, “Complete high school”, “Incomplete higher education”, “Complete higher education”, “Postgraduate/ Masters/ Doctorate”.

Age was grouped into four age groups: “under 18 years old”, “18-24 years old”, “25-34 years old” and “35

years old or older". Marital status in: "single", "married", "stable union", "widow" and "other".

The researches realized in City and neighborhood in Belém, not presented limits of neighborhood. Who participates in the monthly family income and the average income were divided into 5 cut-off points each. About her participation in government programs, the participant responded with "yes" or "no".

2.2.5 Analysis of clinical complications in the mother

The presence or absence of anxiety, depression and compulsive disorder during the breastfeeding period was listed in multiple-choice questions. Contagion by COVID-19 was classified as "Yes" or "No", in cases of positive response, they were asked to inform the period in five cut-off points: "Before pregnancy", "During pregnancy", "During childbirth and up to seven days after birth", "From the 8th day afterbirth until six months later" and "I did not contract it". The question about month and year of contagion was open ended.

2.2.6 Questionnaire

QUESTIONNAIRE ON PRENATAL CARE AND CHILDBIRTH

The prenatal care network was divided into "SUS" and "Private network". Regarding the presence of prenatal guidance on COVID-19 and pregnancy, the cutoff points were only "Yes" or "No", as well as the questions regarding the presence of guidance on breastfeeding in prenatal care and guidance on breastfeeding with suspected or diagnosed COVID-19.

QUESTIONNAIRE ABOUT THE PERIOD OF BREASTFEEDING

Regarding the duration of breastfeeding, there was a subdivision into four cut-off points: "Less than six months", "Six months or more", "I am still breastfeeding" and "Did not breastfeed". The presence of fear or anxiety about breastfeeding due to COVID-19 was characterized as "Yes" or "No". If so, they were asked about the reason for fear or anxiety in eight statements: "Transmit COVID-19 to the child through breast milk", "Transmit COVID-19 through pregnancy", "Transmit COVID-19 through normal birth", "Feeling unprepared to take care of the child", "Heard some information about breastfeeding in the pandemic", "Others" and "Did not feel fear or anxiety".

QUESTIONNAIRE OF POSSIBLE INFLUENCES

Regarding the presence of influence of the pandemic in the breastfeeding period, the participants answered between "Yes" or "No", in the affirmative cases, there was an open questioning about how there was influence. The presence of family guidance not to breastfeed due to COVID-19 was classified as "Yes" or "No", as well as the questioning about receiving

information about pregnancy or breastfeeding in the media during the pandemic, receiving information from the media advising breastfeeding and feelings of insecurity or fear of breastfeeding as a result of the media news.

2.2.7 Statistical Procedures

The data were tabulated in the Microsoft Excel program, and analyzed using the BioEstat© 5.3 program. To verify the statistical difference between variables with two categories, the Mann-Whitney test was used, considering a confidence interval of 95% and a significance level of 5%.

2.2.8 Inclusion and exclusion criteria

As inclusion criteria: women who breastfeed or who breastfed during the period of exclusive breastfeeding within the range of the COVID-19 pandemic, being residents of the cities of Belém and Ananindeua-PA/Brazil, and who agreed to participate in the research after signing the Free Informed Consent Term - TCLE.

Participants with incomplete questionnaires were excluded from this study.

2.2.9 Data collect

Data collection began after project appraisal and authorization from the Research Ethics Committee of the Institute of Health Science - UFPA. Collaboration was requested to participate in the research, explaining the nature and purpose of the research. Then the researcher presented the TCLE, where they were explained about their rights and about the preservation of their anonymity. It was also explained that the fact of non-participation in the research will not imply any loss. Data collection was only performed after signing the informed consent.

Ethical aspects

Ethical evaluation process by the Research Ethics Committee

It followed the norms of the National Research Ethics Commission - CONEP, present in the CNS resolution 466/2012 and 510/2016 and its complementary norms, it was placed under consideration for approval or not by the Ethics and Research Committee of the Institute of Health Sciences – UFPA

The participants were informed in simple and accessible language: the research objectives, the data collection strategies, the reliability of the answers given, the right to refuse or withdraw consent at any stage of the research, the guarantee of preservation of the participant's identity and after other clarifications that emerged, the signature of the TCLE was requested.

Risk

The research requested, after clarification by the participant and signature of the consent form, the completion of the online questionnaire and did not use information that identifies the participants. However, during the filling, there may have been a risk of discomfort when reliving memories of the period of pregnancy and breastfeeding. To minimize this risk, the participant could withdraw from answering the questionnaire at any time, without harm to the interviewee. The confidentiality of their identity as well as that of the information provided was guaranteed, which were kept under the custody of the researchers. Such data were used in a codified form, with the only scientific purpose.

Benefits

The participant had the opportunity to contribute, anonymously, to the knowledge in the area of maternal and child nutrition, in this way, the research can collaborate with the availability of epidemiological data of fundamental importance for use by the competent authorities in the formulation of public policies that contribute to the resolution of the problems faced in the area, especially regarding the still little known scenario of COVID-19.

Financial support

The research was funded with resources from the researchers, with no conflict of interest by funding agents. The survey did not offer any type of compensation or reimbursement.

III. RESULTS

In this research, 144 responses were obtained, however 2 were excluded. The socioeconomic and demographic characterization is shown in table 1. The sample was characterized with 59.86% from the city of Belém, and 40.14% from the city of Ananindeua. Most of these mothers are within the age group of 25 to 34 years, representing 52.11% (n=74). Among these, 26.76% (n=38) had completed high school as their level of education, followed by 23.94% (n=34) with graduate degrees, 21.13% (n=30) with incomplete higher education. Regarding marital status, 35.92% (n=51) women reported being in a stable union, 34.51% (n=49) and 28.17% (n=40) were married and single, respectively.

With regard to family income, 54.23% (n=77) reported income between 1 and 2 minimum wages, on the other hand, 74.65% (n=106) said they did not participate in any government program, as can be seen in table 1.

Table 1 – Socioeconomic and demographic profile of the women surveyed.

Data	N	%	p value *
City			
Belém	85	59.86	<0.0001
Ananindeua	57	40.14	
Age			
Under 18	2	1.41	
18 to 24 years	45	31.69	
25 to 34 years	74	52.11	
35 years or older	21	14.79	
Education			
incomplete elementary school	2	1.41	
Complete primary education	5	3.52	
Incomplete high school	11	7.75	
Complete high school	38	26.76	
incomplete higher education	30	21.13	
Postgraduate studies	34	29.94	
Marital status			
Single	40	28.17	

Married	49	34.51	
stable union	51	35.92	
Widow	0	0.00	
Other	2	1.41	
Family income			
1 to 2 minimum wages	77	54.23	
3 to 5 minimum wages	39	27.46	
6 to 10 minimum wages	19	13.38	
More than 10 minimum wages	7	4.93	
Beneficiary in government programs			
Yes	36	25.23	<0.0001
No	106	74.65	

Source: Authors, 2022.

*p value obtained by the test Mann-Whitney

Table 2 presents the data found on breastfeeding. In the exclusive breastfeeding variable, 63.38% (n=90) mothers reported that they were still exclusively breastfeeding, followed by 23.24% (n=33) women who reported that they exclusively breastfed until the sixth month or more of the baby's life. 57.04% (n=81) said they

had used the SUS for prenatal consultations. Regarding what was addressed during prenatal care, 57.75% (n=82) received guidance on breastfeeding, despite this, 42.25% (n=60) did not.

Table 2 – Data referring to the breastfeeding period.

Data	N	%	p value*
Exclusive Breastfeeding Period			
less than 6 months	19	13.38	
6 months or more	33	23.24	
is still breastfeeding	90	63.38	
did not breastfeed	0	0.00	
Care network used during prenatal care			
SUS	81	57.04	<0.0001
private network	61	42.96	
Guidance on breastfeeding in prenatal care?			
Yes	82	57.75	<0.0001
No	60	42.25	

Source: Authors, 2022.

*p value obtained by the test Mann-Whitney

Table 3 highlights data on how women had their routines changed and guided by the coronavirus pandemic. 55,63% (n=79) reported that they did not become infected with SARS-CoV-2. Among those who said they had contracted it, 16,90% (n=24) said they had it before pregnancy and 16,90% (n=24) during pregnancy.

Regarding the guidance received during prenatal care, 64,08% (n=91) said that there were conversations about pregnancy and the coronavirus, 82,39% (n=117) reported that they did not receive guidance on the act of breastfeeding with the diagnosis or suspected Covid-19 infection. 70,42% (n=100) reported that they noticed the dissemination of information addressing pregnancy and

breastfeeding within this pandemic period on social media. Already 92,25% (n=131) said they did not receive news that discouraged breastfeeding when linked to infection by covid-19 on media networks, 73,94% (n=105) said that the pandemic did not influence the period of breastfeeding.

Table 3 – The pandemic and the life of women during and after pregnancy.

Data	N	%	p value*
Did you contract covid-19?			
Yes	63	44.37	
No	79	55.63	
In which period did you contract COVID-19?			
before pregnancy	24	16.90	
During the pregnancy	24	16.90	
During delivery and up to 7 days after delivery	0	0	
From the 8th day after delivery to the 6 months after	14	9.89	
did not contract	80	56.34	
Did you receive guidance on COVID-19 and prenatal pregnancy?			
Yes	91	64.08	<0.0001
No	51	35.92	
Have you received guidance on breastfeeding with suspected or diagnosed COVID-19?			
Yes	25	17.61	<0.0001
No	117	82.39	
Have you received information about pregnancy or breastfeeding on social media during the COVID-19 pandemic?			
Yes	100	70.42	<0.0001
No	42	29.58	
Have you received information in the media advising against breastfeeding due to COVID-19?			
Yes	11	7.75	<0.0001
No	131	92.25	
The pandemic influenced the breastfeeding period			
Yes	37	26.06	<0.0001
No	105	73.94	

Source: Authors, 2022.

*p value obtained by the test Mann-Whitney

Regarding the emotional aspects, 60,58% (n=86) reported that they did not feel anxiety, depression, compulsive disorder or had chemical dependence. However, it is important to note that 31.69% (n=45) reported that they suffered from anxiety symptoms and 4,93% (n=7) stressed that they suffered from depression

and anxiety. 74,65% (n=106) said they were not afraid or anxious to breastfeed during this period of the coronavirus pandemic, and 80,28% (n=114) reported that they were not afraid or insecure about breastfeeding due to the news that circulated about covid-19.

Table 4 – Emotional aspects of the mother during breastfeeding in the pandemic period.

Data	N	%	p value*
During the period of breastfeeding, you had some of the problems below			
Anxiety	45	31.69	
Depression	0	0.00	
compulsive disorder	0	0.00	
chemical dependency	0	0.00	
anxiety and depression	7	4.93	
Anxiety, Depression and Compulsive Disorder	1	0.70	
Anxiety and compulsive disorder	3	2.11	
No	86	60.58	
You had fear or anxiety about breastfeeding due to covid-19			
Yes	36	25.35	<0.0001
No	106	74.65	
Did you feel insecure or afraid to breastfeed as a result of news in the media about COVID-19?			
Yes	28	19.72	<0.0001
No	114	80.28	

Source: Authors, 2022.

*p value obtained by the test Mann-Whitney

The results described in table 5 refer to the reasons that led women to have fear and anxiety when practicing breastfeeding during the pandemic. Most of these 59,86% (n=85) reported that they did not feel any of these characteristics, 11,27% (n=16) were afraid of feeling

unable to take care of their children, 8,45% (n=12) reported that this anxiety and fear appeared out of concern about transmitting the coronavirus to children through breastfeeding.

Table 5 - Reasons for fear or anxiety felt by mothers during the pandemic period.

Data	n	%
Transmit covid-19 to a child through breast milk	12	8.45%
Transmit covid-19 through pregnancy	7	4.93%
Transmit covid-19 through normal delivery	0	0.00%
Feeling unprepared to care for the child	16	11.27%
Heard some information about breastfeeding in the pandemic that made you insecure	1	0.70%
Did not feel fear or anxiety	85	59.86%
Feeling unprepared to take care of the child and heard some information about breastfeeding in the pandemic that made her insecure	6	4.23%
Others	15	10.56%

Source: Authors, 2022.

Table 6 shows the results that correlate between the variables age and emotional aspects. 62,16% (n=46) women between 25 and 34 years old reported that they did not present emotional factors in the postpartum period that could interfere with the period of breastfeeding. However,

31,08% (n=23) women reported having suffered from anxiety symptoms and 4,05% (n=3) with anxiety and depression.

In women between the ages of 18 and 24 years, 55.56% (n=25) said they did not have the symptoms described, on

the other hand, 33.33% (n=15) reported that they suffered depression. from anxiety and 06.67 % (n=3) with anxiety and

Table 6 - Age and emotional aspects of mothers during the pandemic period.

Age	Emotional aspects									
	No		Anxiety		anxietyanddepression		Anxiety, Depression, Compulsive Disorder		Anxiety, CompulsiveDisorder	
	%	N	%	n	%	N	%	n	%	n
Under 18	100,00	2	0,00	0	0,00	0	0,00	0	0,00	0
18 to 24 years	55,56	25	33,33	15	6,67	3	0,00	0	4,44	2
25 to 34 years	62,16	46	31,08	23	4,05	3	1,35	1	1,35	1
35 years or older	61,90	13	33,33	7	4,76	1	0,00	0	0,00	0

Source: Authors, 2022.

Table 7, referring to the relationship between schooling and emotional aspects, found that 65,79% (n=25) of women with complete high school education did not develop symptoms of anxiety, 31,58% (n=12) reported that they had anxiety.

On the other hand, 55,58% (n=19) mothers with graduate degrees said they had no psyche-related factors during the puerperium, however, 41,18% (n=14) reported having symptoms of anxiety.

Table 7 – Schooling and emotional aspects of mothers during the pandemic period.

Education	Emotionalaspects									
	No		Anxiety		anxietyanddepression		Anxiety, Depression, CompulsiveDisorder		Anxiety, CompulsiveDis order	
	%	N	%	N	%	n	%	N	%	n
Complete primary education	80.00	4	0.00	0	20.00	1	0,00	0	0.00	0
Incomplete elementary school	100	2	0.00	0	0.00	0	0.00	0	0.00	0
Complete high school	65.79	25	31.58	12	2.63	1	0.00	0	0.00	0
Incomplete high school	63.64	7	36.36	4	0.00	0	0.00	0	0.00	0
Complete higher education	63.64	14	27.27	6	4.55	1	0.00	0	4.55	1

Incomplete higher education	50.00	15	30.00	9	10.00	3	3.33	1	6.67	2
Postgraduate/Masters/PhD	55.88	19	41.18	14	2.94	1	0.00	0	0.00	0

When related to marital status characteristics and emotional aspects, the following results were found. 67,35% (n=33) of married women said that there were no signs of these conditions, as well as 56,68% (n=29) in a stable relationship and 57,50% (n=23) single.

Regarding postpartum anxiety symptoms, 35,29% (n=18) women in a stable relationship reported having had symptoms of this disease, followed by 26,53% (n=13) married and 32,50% (n=13) single.

Table 8 - Marital status and emotional aspects of mothers during the pandemic period.

Marital status	Emotional aspects										
	No		Anxiety		Anxiety and depression		Anxiety, Depression, Compulsive Disorder		Anxiety, Compulsive Disorder		
	%	n	%	n	%	n	%	n	%	n	
Single	57,50	23	32,50	13	7,50	3	2,50		1	0,00	0
Married	67,35	33	26,53	13	6,12	3	0,00	0	0,00		
stable union	56,86	29	35,29	18	1,96	1	0,00	0	5,88		3
Other	50,00	1	50,00	1	0,00	0	0,00	0	0,00		0

Source: Authors, 2022.

The results found when correlating the variables family income and emotional aspects were that most women who developed emotional disorders had a family income of 1 to 2 minimum wages. Being, 35,56% (n=24) with a diagnosis

of anxiety, 17,78% (n=4) with depression combined with anxiety, and 11,85% (n=2) suffered from anxiety and compulsive disorder during the postpartum period.

Table 9 - Family income and emotional aspects of mothers during the pandemic period.

Family income	Emotional aspects									
	No		Anxiety		anxiety and depression		Anxiety, Depression, Compulsive Disorder		Anxiety, Compulsive Disorder	
Data	%	n	%	N	%	N	%	N	%	n
1 to 2 minimum wages	34,81	47	35,56	24	17,78	4	0,00	0	11,85	2
3 to 5 minimum wages	37,88	25	33,33	11	18,18	2	1	1	0,00	0
6 to 10 minimum	27,27	9	54,54	9	18,18	1	0,00	0	0,00	0

wages											
More than 10 minimum wages	33,33	5	13,3	3	1	0,00	0	0,00	0	53,33	1

Source: Authors, 2022.

IV. DISCUSSION

When verifying the sociodemographic profile of women who breastfed during the covid19 pandemic and lived in the metropolitan region of Belém, it was possible to identify that there was a higher incidence of women aged between 25 and 34 years. However, Santos *et al.*[8] in their research in Fortaleza, found 83,3% of women were aged between 18 and 35 years, with a different sample than that found in this study.

Moraes *et al.* [9] interviewed 185 postpartum women, most aged between 20 and 29 years, which characterized 69,7% in the city of Rio de Janeiro. Santos *et al.* [10] found a sample of 52,4% of women between 20 and 29 years old in the city of Cariacica-Es.

Loureiro *et al.* [11] found that women over 25 years old constituted the largest sample of breastfeeding women (57,5%). The predominant parity number of women over 18 years of age in the survey is reinforced by the results found in other studies. These percentages may show that women are choosing to have children after achieving other life goals, and this late option of becoming a mother is related to the level of education, financial independence and even having a steady partner to share the particularities that this new phase in life brings.

Regarding marital status, 35,92% (n=51) were in a stable relationship, 34,51% (n=49) were married, and 28,17% (n=40) were single. The study by Santos *et al.*[8] the categories were divided into with a partner and without a partner, with the variable with a partner being the predominant one (68,2%), as found in the current research (35,92%). Moraes *et al.* [9] found that 80% of the women studied reported that they lived with a partner, without specifying whether they were married or in a stable union, (93,2%) cohabited with a partner in the study by Mendes *et al.* [11] without specifying whether they were married in a stable union.

The Brazilian Institute of Geography and Statistics (IBGE) [13] in 2022 reported that there was a decrease in the number of divorces (13,06%) in 2020, the first year of the coronavirus pandemic, which corroborates the findings in the current study as in the aforementioned surveys. In the study by Coelho *et al.*[13], it was found that married women (56,04%) had a high percentage of unplanned pregnancies (69,03%), we can consider that

women who have a steady partner tend not to use contraceptive methods, an unplanned pregnancy can be undesired, making the woman not feel good about managing a child, and may develop a reluctance to breastfeed.

Regarding family income, the present research showed that most women (54,23%) lived with a family income between 1 and 2 minimum wages. This factor can influence the health, feeding conditions and well-being of these mothers. Santos *et al.* [8] found that 80, 03% of women reported receiving between 788 and 1.576. Moraes *et al.* [9] reported that 69% said they received more than one minimum wage. With women's reports indicating that family income ranges from 1 to 2 salaries, or even less than 1 salary, we can conclude that many families live in social vulnerability, and this amount of total family income is used to meet the needs of families of 3 or more people, having to be provided with food, clothing, personal hygiene and often housing.

It was found that 74,65% in this research reported that they do not receive assistance from government programs and many of them have a family income below 2 minimum wages. In agreement with what was found by Lopes *et al.*[15] who also surveyed women living in the metropolitan region of Belém. Thus, it is of fundamental importance to inform these families which government programs they have the right to be included in.

As for schooling, complete high school was the most mentioned level, with 26,76% (n=38). In the study by Loureiro *et al.* [11] it was also found that the variable complete/incomplete high school education had the highest percentage 42,05%. Furthermore, Alves *et al.* [15] in their study, found that 40% of the women interviewed said they had not completed high school. Thus, the level of education is an important variable to relate to breastfeeding, it is assumed that most women who have a higher level of education, want to practice breastfeeding, since they have more access to information about the benefits that breast milk brings to the health of newborns. Women who are more literate are looking for ways to learn about the characteristics in which breastfeeding is involved. Carreiro *et al.* [17] found that schooling is associated with the type of breastfeeding that will be

practiced, given that the greater the training, the more they will seek information, which may prevent early weaning.

About the service which was used in prenatal care, 57,04% performed through the Unified Health System (SUS). Loureiro *et al.* [11] researched which network was used during prenatal care, with SUS being the most used with 64,05%. Mendes *et al.* [11] in their sample found that 94,08% used the private network, however, it is important to highlight that the research was carried out with servants from a hospital.

Regarding the instructions received by mothers about breastfeeding during the prenatal period, 57,75% (n=82) reported having been guided by health professionals about breastfeeding. Loureiro *et al.* [11] also sought to find out if there were instructions on breastfeeding in prenatal care, with results of 64,05% being the majority of the sample, thus corroborating the findings of the current study. Other research has also shown that most women received guidance during prenatal care (9, 18).

In this way, attention to the prenatal period is of great importance to welcome and guarantee assistance during pregnancy and after the child's birth. In addition, consultations are a propitious moment to initiate guidelines on breastfeeding [19]. Guimarães *et al.* [20] sought to assess the compliance of prenatal care in Brazil and found that access to this service is deficient throughout the country, with the North region showing only 18% of adequacy in the infrastructure of the USF (Family Health Unit). Despite the evident importance of this orientation since prenatal care, 42,25% of the mothers in the present study did not receive any type of orientation. This factor can generate maternal insecurity, which can interfere with the period of exclusive breastfeeding.

For women who are diagnosed with covid-19 during labor, it is not recommended that the newborn be delivered to her, so that there is skin-to-skin contact, as the chances of the newborn being infected are high, given that it is first necessary to carry out the routine procedures. Regarding breastfeeding, it should be postponed until the recommended hygiene techniques are performed, so that the risks of transmission are reduced [21]. With this, it is important that women are informed during prenatal care of the importance of preventing themselves against the coronavirus, and what protocols will be adopted if birth occurs with a positive diagnosis.

Lins *et al.* [22] carried out a literature review with research that had a quantitative methodology, however, they did not find Brazilian studies. In the results, they found that the vertical transmission of the coronavirus through breast milk was not evidenced, however, the

studies emphasize the importance of hygiene protocols for the mother and baby before skin-to-skin contact, especially when there is an infection. Breastfeeding is extremely important for maintaining the health of women and children, as studies have found antibodies in breast milk that help fight the coronavirus.

Table 3 also infers about social media and its influence on breastfeeding in this pandemic period. Galvão *et al.* [23] carried out an integrative literature review on which means and subjects are most sought after by women who will or are in the breastfeeding phase, 80,03% reported that they used the internet not only to seek information about breastfeeding, but to help them obtain nutritional data, they also reported that they sought support in the media for the continuity of breastfeeding.

Moura *et al.* [24] researched the topics related to breastfeeding from videos posted on Youtube, and found that the majority addresses the topic of myth and truth (56,05%), 72,06% did not inform about breastfeeding techniques, 64,05% were not produced by health professionals and 53,02% had no scientific basis.

In the present research, 80,28% women said they were not afraid to breastfeed due to the media news about covid-19. The general population is more informed, either through social media or by using the internet to seek knowledge about subjects that interest them. Breastfeeding is a very widespread subject however it is important that this information comes from reliable websites and from health professionals, so that the veracity of the content learned is ensured.

Regarding the emotional aspects, although the majority did not suffer from these conditions, about 31,69% (n=45) reported that they had symptoms of anxiety and 4,93% (n=7) had depression and anxiety, and 20,11% (n=3) also had anxiety and compulsive disorder. Moraes *et al.* [9] also found that 58,03% suffered from anxiety symptoms in the postpartum period. It is possible that these numbers of women with anxiety are higher, as many women may be afraid to report that they have suffered from these factors. Melo *et al.* [25] found in their research, reports of low levels of anxiety (55,04%), this anxiety decreased over the postpartum period. This study correlated anxiety and breastfeeding self-efficacy, noting that the lower the anxiety levels, the greater the prevalence of breastfeeding.

Hessami *et al.* [26] when conducting a database survey on women, who reported anxiety before and during a pandemic, found that there was a significant increase in reports of anxiety symptoms. Nomura *et al.* [27] find in their research that 16,01% women reported having moderate anxiety, 11,05% said they had strong anxiety.

Living with a partner was a variable that reduced anxiety levels. This can demonstrate the importance of the support network in the postpartum period, bringing benefits to women's health, as well as breastfeeding.

With regard to the suspension of exclusive breastfeeding, it is important that there is an investigation into the reasons that led the woman to interrupt this practice. Anxiety was one of the main reasons that led mothers in the postpartum period not to intend to breastfeed exclusively, in the results obtained by Moraes *et al.* [9] women who experience anxiety during pregnancy are more likely to maintain this characteristic in the puerperium, with consequences for breastfeeding, as well as for their health and that of the baby [28].

In the study by Abuchaim *et al.* [29] found that 31,25% reported having symptoms of depression, with regard to breastfeeding self-efficacy, 39,09% had a median result and 36,06% had a high result.

Rocha and collaborators [30] found in their research that women who suffer a moderate degree of anxiety during pregnancy are more likely to use illicit drugs, and claim that the detection of this consumption is extremely important, so that the addiction does not last until the puerperium. Since the consumption of illicit drugs and a mental health weakened by stress and anxiety is harmful to the health of the mother and baby.

Maciel *et al.* [31] found in their research that social and economic factors of pregnant women contributed to them developing some mental change in the puerperium. He found that a properly developed prenatal care contributed to the reduction of future problems in the psychological area.

For Ballesteros *et al.* [32] it is important that there are more studies on the mental health of mothers and children so that interventions can be developed that health professionals can employ to help combat these pathologies. The benefits of breast milk are described in several studies and disseminated by health professionals from various areas, however, there are diverse factors that lead to weaning, with mental health being a constant variable in research.

V. CONCLUSION

The women who breastfed during the Covid-19 pandemic involved in this research were between 25 and 34 years old, had completed high school and were in a stable relationship, lived with 1 to 2 minimum wages per month, without receiving government benefits.

The largest portion of the sample was still in the period of exclusive breastfeeding at the time of the research, but did

not exclusively breastfeed until six months, as recommended by the Health Organizations.

Regarding the emotional aspects of these mothers, anxiety was the most mentioned condition during the breastfeeding period. Being mainly associated with the fear and insecurity of breastfeeding during the pandemic in addition to the fear of transmitting covid-19 to the child through breast milk, and the feeling of unpreparedness to take care of the child.

As for the relationship of emotional aspects with the sociodemographic profile, the age group from 18 to 34 years old was the one that had the greatest relationship with the development of anxiety. Regarding education, mothers who had a graduate degree also reported greater symptoms of anxiety during the pandemic period. The marital status that was most related to the development of emotional symptoms was stable union. In addition, mothers who lived with a family income of 1 to 2 minimum wages were the most affected by emotional symptoms.

In this way, the results of the present research bring a reflection on the importance of investigating factors related to the emotional of women in the periods of pregnancy and postpartum, in order to prevent and treat these alterations or disorders, as they influence maternal health, and consequently in the practice of breastfeeding. However, it is important that new research be developed to help health professionals in encouraging this practice that saves so many lives.

ACKNOWLEDGEMENTS

First, I thank God. He was always present in my life and in the most difficult moments I found shelter in his arms. My grandmother Maria de Nazaré, no one has ever received as much love as I received from you, in the arms of the Father you rest, save for me a place in your home. To my kind and wonderful mother, forever my "parabatai", "Wherever you go, I will go; and where you stay, I will stay; your people will be my people and your God will be my God, wherever you die I will die, and there I will be buried. May the angel do for me, and as much, if anything other than death separates me from you." I thank my family, whenever the storms come, we find support in each other. Thank you to my advisor LuísaMargareth and my great friend Ananda, in the midst of life's storms, you are like beacons showing the way back home. Thank you to my friend Bruna, her kind heart was a pleasant surprise, her friendship was a gift asked to a shooting star. I thank my lovely friend Fabiana for her companionship and learning. To Paula Araújo, friend, your heart and your

kindness will always precede you. I thank my co-authors for their fellowship and help.

REFERENCES

- [1] Sousa, F. L. L., Alves, R. S. S., Leite, A. C., Silva, M. P. B., Veras, C. A., Santos, R. C. A., ... Ferreira, B. R. (2021). Benefits of breastfeeding for women and newborns. *Research, Society and Development*, 10(2). doi: <http://dx.doi.org/10.33448/rsd-v10i2.11208>.
- [2] Simas, W. L. A., Penha, J. S., Soares, L. B. C., Rabêlo, P. P. C., Oliveira, B. L. C. A. & Pinheiro, F. S. (2021). Maternal insecurity in breastfeeding women served at a human milk bank. *Revista Brasileira de Saúde Materno Infantil*, 21(1). doi: <https://doi.org/10.1590/1806-93042021000100013>.
- [3] Ciampo, L. A. D. & Ciampo, I. R. L. D. (2018). Aleitamento materno e os benefícios da lactação para a saúde da mulher. *Rev. Bras. Ginecol. Obstetria*, 40(6), 354-359. doi: <https://doi.org/10.1055/s-0038-1657766>.
- [4] Rocha, G. P., Oliveira, M. C. F., Ávila, L. B. B., Longo, G. Z., Cotta, R. M. M. & Araújo, R. M. A. (2018). Conditioning factors for exclusive breastfeeding from the mother's perspective. *Cadernos de Saúde Pública*. 34(6). doi: 10.1590/0102-311X00045217.
- [5] Medeiros, L. E. B., Cordenonsi, I. C. O., Rados, D. R. V., Oliveira, E. B., Carvalho, R. R., Roman, R., ... Umpierre, R. N. (2021). Facing a new enemy with old weapons: Use of masks, hand and surface hygiene, isolation, social distance, quarantine and blocking to control Covid-19. *Revista da Associação Médica do Rio Grande do Sul*, 65 (1). Recuperado de <https://www.amrigs.org.br/assets/images/upload/pdf/jornal/1625675724.pdf#page=125>. 123-131.
- [6] Santos, S. C., Jesus, G. T., Costa, J. S. C., Fernandes, R. A. & Nunes, M. R. (2022). Relationship between breastfeeding and COVID-19: Highlighting possible contamination risks. *Brazilian Journal of Development*, 8(1), 846-856. doi: 10.34117/bjdv8n1-055.
- [7] Arrais, A., Amorim, B. & Haidar, A. C. (2021). Impacto psicológico da pandemia em gestantes e puérperas brasileiras. *Diaphora*, 10(1), 24-30. doi: <https://doi.org/10.29327/217869.10.1-4>
- [8] Santos, S. C., Jesus, G. T., Costa, J. S. C., Fernandes, R. A. & Nunes, M. R. (2022). Relationship between breastfeeding and COVID-19: Highlighting possible contamination risks. *Brazilian Journal of Development*, 8(1), 846-856. doi: 10.34117/bjdv8n1-055.
- [9] Moraes, A. O. S., Magalhães, E. I. S., Vilela, A. A. F., Kac, G. & Vaz, J. S. (2020). Sintomas de ansiedade gestacional e pós-parto e intenção de amamentar exclusivo até os seis meses: Resultado de uma coorte prospectiva do Rio de Janeiro. *Demetra Alimentação, Nutrição & Saúde*, 16:e51297. doi: 10.12957/demetra.2021.51297.
- [10] Santos, D. F., Silva, R. P., Tavares, F. L., Primo, C. C., Maciel, P. M. A., Souza, R. S. & Leite, F. M. C. (2021). Prevalence of postpartum depression symptoms and their association with violence: a cross-sectional study, Cariacica, Espírito Santo, Brazil, 2017. *Epidemiologia e Serviços de Saúde*, 30(4). doi: <https://doi.org/10.1590/S1679-49742021000400002>.
- [11] Loureiro, R., Figueiredo, V. L. M., Dornelles, C. & Aguiar, J. R. V. (2022). Perfil das doadoras de leite materno de um banco de leite humano de um hospital universitário do sul do Brasil. *Research, Society and Development*, 11(1). doi: <http://dx.doi.org/10.33448/rsd-v11i1.25180>.
- [12] Mendes, M. S., Schorn, M., Santo, L. C. E., Oliveira, L. D. & Giugliani, E. R. J. (2021). Factors associated with breastfeeding continuation for 12 months or more among working mothers in a general hospital. *Ciência & Saúde Coletiva*, 26(11):5851-5860. doi: 10.1590/1413-812320212611.12882020.
- [13] Agência IBGE Notícias. (2022). Em meio à pandemia, número de divórcios cai 13,6% em 2020. IBGE, 2022. Recuperado de <https://agenciadenoticias.ibge.gov.br/agencia-noticias/2012-agencia-de-noticias/noticias/32996-em-meio-a-pandemia-numero-de-divorcios-cai-13-6-em-2020>
- [14] Coelho, E. A. C., Andrade, M. L. S., Vitoriano, L. V. T., Souza, J. J., Silva, D. O., Gusmão, M. E. N., Nascimento, E. R. & Almeida, M. S. (2012). Associação entre gravidez não planejada e o contexto socioeconômico de mulheres em área da Estratégia Saúde da Família. *Acta Paul Enferm*, 25(3), 415-422. doi: <https://doi.org/10.1590/S0103-21002012000300015>.
- [15] Lopes, B. M. Santos, B. M. S., Freitas, I. E. C., Monteiro, M. K. S. & Silva, L. M. C. (2022). Factors related to the pandemic period and its possible influence on the exclusive breastfeeding phase in the cities of Belem and Ananindeua-PA/Brazil. *International Journal of Advanced Engineering Research and Science*, 9(1), 57-69. doi: [10.22161/ijaers.91.8](https://doi.org/10.22161/ijaers.91.8)
- [16] Alves, A. P. C., Alves, A. S., Tamboril, T. M., Menezes, V. B. B., Barros, R. O., Medeiros, R. F. B., Carvalho, C. G. M. & Linard, C. F. B. M. (2021). Perfil e percepção das puérperas em relação ao trabalho de parto humanizado. *Brazilian Applied Science Review*, 5(1), 584-603. Recuperado de <https://www.brazilianjournals.com/index.php/BASR/article/view/25268>.
- [17] Carreiro, J. A., Francisco, A. A., Abraão, A. C. F. V., Marcacine, K. O., Abuchaim, E. S. V. & Coca, K. P. (2018). Dificuldades relacionadas ao aleitamento materno: análise de um serviço especializado em amamentação. *Acta Paul Enferm*, 31(4), 430-438. doi: <https://doi.org/10.1590/1982-0194201800060>.
- [18] Flores, T. R., Neves, R. G., Mielke, G. I., Bertoldi, A. D. & Nunes, B. P. (2021). Desigualdades na cobertura da assistência pré-natal no Brasil: um estudo de abrangência nacional. *Ciênc. Saúde Colet*, 26(02), 593-600. doi: <https://doi.org/10.1590/1413-81232021262.26792019>.
- [19] Silva, E. V., Costa, M. A. A., Almeida, K. C., Araújo, L. M. B. & Amâncio, N. F. G. (2020). Relationship between the type of delivery and the epidemiological profile of prenatal and perinatal assistance in a municipality of Minas Gerais. *Revista Brasileira de Saúde Materno Infantil*, 20,

- 241-247. doi: <https://doi.org/10.1590/1806-93042020000100013>.
- [20] Guimarães, W. S. G., Parente, R. C. P., Guimarães, T. L. F. & Garnelo, L. (2018). Acesso e qualidade da atenção pré-natal na Estratégia Saúde da Família: infraestrutura, cuidado e gestão. *Cad. Saúde Pública*, 34(5). doi: <https://doi.org/10.1590/0102-311X00110417>.
- [21] ALMEIDA, M. F. B., GUINSGURG, R., BRANDÃO, D. C. B., NIETO, G. C. S., CALDAS, J. P. S., LYRA, J. C., ... MACIEL, T. R. Recomendações para Assistência ao Recém-Nascido na sala de parto de mãe com COVID-19 suspeita ou confirmada – Atualização –. Nota de alerta. Sociedade brasileira de pediatria. Programa de reanimação neonatal. 2020.
- [22] Lins, A. G. A., Pereira, C. F. C., Almeida., T. C. S., Silva, J. C. B., Sousa, V. J. & Albuquerque, N. L. A. (2021). Vivência em amamentação por puérperas frente à pandemia da Covid-19: revisão integrativa. *Brazilian Journal of Health Review*, 4(6), 28575-28588. Recuperado de <https://www.brazilianjournals.com/index.php/BJHR/article/view/41688>.
- [23] GALVÃO, D. M. P. G.; SILVA, E. M. B.; SILVA, D. M. Uso das novas tecnologias e promoção da amamentação: revisão integrativa da literatura. *Rev. Paul. Pediatr.* 2022. doi: <https://doi.org/10.1590/1984-0462/2022/40/2020234>
- [24] Moura, L. G. B., Maier, A. M. R. R., Antunes, M. D., Nishida, F. S., Garcia, L. F. & Massuda, E. M. (2021). Social media in promoting breastfeeding. *Saúde e Pesquisa*. 14(3). doi: 10.17765/2176-9206.2021v14n3e9442.
- [25] Melo, L. C. O., Bonelli, M. C. P., Lima, R. V. A., Gomes-sponholz, F. A. & Monteiro, J. C. S. (2021). Anxiety and its influence on maternal breastfeeding self-efficacy. *Revista Latino-Americana de Enfermagem*, 29:e3485. doi: 10.1590/1518-8345.5104.3485.
- [26] Hessami, K., Romanelli, C., Chiurazzi, M. & Cozzolino, M. (2020). Pandemia de COVID-19 e saúde mental materna: uma revisão sistemática e metanálise. *J. Matern. Fetal Neonatal Med*, 1-8. doi: 10.1080/14767058.2020.1843155.
- [27] Nomura, R. M. Y., Ubinha, A. C. F., Tavares, I. P., Costa, M. L., Opperman, M. L. R., Brock, M. F. ... RUANO, R. (2021). Increased Risk for Maternal Anxiety during the COVID-19 Outbreak in Brazil among Pregnant Women without Comorbidities. *Revista Brasileira de Ginecologia e Obstetrícia*, 43(12). doi: <https://doi.org/10.1055/s-0041-1740234>.
- [28] Fallon, V. Bennett, K. M. & Harrold, J.A. (2016). Prenatal anxiety and infant feeding outcomes: a systematic review. *J Hum Lact*, 32(1), 53-66. doi: [10.1177/0890334415604129](https://doi.org/10.1177/0890334415604129).
- [29] Abuchaim, E. S. V., Caldeira, N.T., Di Luca, M.M., Varela, M. & Silva, I. A. (2016). Depressão pós-parto e autoeficácia materna para amamentar: prevalência e associação. *Acta Paul Enferm*, 29(6), 664-670. doi: <https://doi.org/10.1590/1982-0194201600093>.
- [30] Rocha, P.C., Alves, M. T. S. S. B., Chagas, D. C., Silva, A. A. M., Batista, R. F. L. & Silva, R. A. (2016). Prevalence of illicit drug use and associated factors during pregnancy in the BRISA cohort. *Cadernos de Saúde Pública*, 32(1). doi: <https://doi.org/10.1590/0102-311X00192714>.
- [31] Maciel, L. P., Costa, J. C. C., Campos, G. M. B., Santos, N. M., Melo, R. A. & Diniz, L. F. B. (2019). Mental disorder in the puerpério: risks and mechanisms of counseling for the promotion of health. *Revista de Pesquisa Cuidado é Fundamental Online*, 11(4):1096-1102. doi: <http://dx.doi.org/10.9789/2175-5361.2019.v11i4.1096-1102>.
- [32] Ballesteros, C. I., Falcão, D. V. S., Rocinholi, L. F. & Fernandez, J. L. (2019). Saúde mental e apoio social materno: influências no desenvolvimento do bebê nos dois primeiros anos. *Contextos Clínicos*, 12(2). doi: <http://dx.doi.org/10.4013/ctc.2019.122.04>.