Prevalence of exclusive breastfeeding during confinement secondary to the COVID-19 pandemic in infants born at the Santa Bárbara Clinic from April to June 2020.

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Received:2 November 2021
Accepted:19 February 2022
Published: April 18, 2022
Editor: Dr. Paul Astudillo Silva.

Bibliographic letterhead:

Contreras E, Nuñez R, Erazo C. Cadena D, Endara P. Prevalence of exclusive breastfeeding during confinement secondary to the COVID-19 pandemic in infants born at the Santa Bárbara Clinic, during the period from April to June 2020. Ecuadorian Journal of Pediatrics 2022;23(1):28-34 DOI: https://doi.org/10.52011/146

Abstract

Introduction: Exclusive breastfeeding (EBF) decreases morbidity and mortality in infants. The prevalence of SCI in Ecuador is 58.4%. There is no information available on how the restrictions applied by the COVID-19 pandemic have impacted EBF habits, so this study aims to determine the prevalence of EBF during the confinement period and its associated factors.

Methods: The present longitudinal study was carried out at the "Santa Bárbara" clinic in Quito-Ecuador, from April to June 2020, with a non-probabilistic sample of mothers of infants with healthy children. Age, marital status, education, work activity, prenatal controls, type of delivery, perinatal practices, healthy child control, prenatal-postnatal counseling, and EBF are described. The association is presented as an odds ratio.

Results: 114 participants with an EBF of 54.4% (62 mothers). Prenatal counseling was a protective factor OR 0.458 (95% CI 0.216 -0.97) P = 0.045 for the presence of EBF. The use of breast milk substitutes at discharge was a risk factor for the loss of EBF, OR 2.46 (95% CI 1.12-5.42) P=0.025. The infant's medical problems were a risk factor for the loss of EBF, OR 5.92 (95% CI 2.62-13.37) P<0.0001.

Conclusions: There is more significant abandonment of EBF, despite the longer contact time between mother and child. Abandonment occurs within the first month of life in 65.3% of cases and is associated with breast milk substitutes at the time of discharge of the newborn. There is an association between infant medical problems and EBF abandonment.

Keywords:

MESH: Breastfeeding; lactation; Sucking Behavior; child; Milk, Human; Breast-Milk Substitutes

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Introduction

Exclusive breastfeeding for the first six months of life significantly reduces the risk of malnutrition and infant mortality [1].

Human milk is a living substance of immense biological complexity that is suitable for the human infant [2] and adapts according to nutritional and immunological needs during the first months of the child's life as the child grows and develops [3].

In the practice of breastfeeding, the Government of Ecuador joined the "Friendly Hospital" initiative (WHO, PAHO, and UNICEF) to encourage the effective practice of breastfeeding and increase its prevalence [4, 5].

The data published by ENSANUT in 2013 showed a prevalence of breastfeeding of 43.8%. This prevalence increased to 64% in 2017 [6] and decreased in 2018 to 62.1%, and this decrease was mainly marked in urban areas at 58.4% [7, 8].

In Ecuador, there is still no information available on how the restrictions applied during confinement due to the pandemic have impacted breastfeeding habits [9]; however, empirically, it could be thought that despite maintaining the same feeding policies for the newborn and maintaining similar counseling by health personnel to the mother, there is an increase in the prevalence of breastfeeding during pregnancy. Confinement is probably due to the better permanence of mothers with their children.

The following observational study was proposed to answer the following research question: What is the relationship between confinement and exclusive breastfeeding?

Population and methods

Design of the investigation

This design is a longitudinal analytical observational study.

Stage

The study was carried out at the "Santa Bárbara" clinic, a private center belonging to the Complementary Health Network of the Ministry of Public Health, located on Esmeraldas and García Moreno streets, Historic Center of Quito-Ecuador, which is part of the Red de External Providers of the Ecuadorian Institute of Social Security. The case recruitment period was from April 1, 2020, to June 30, 2020. The follow-up period was five months, and the last follow-up ended on November 30, 2020. The report was completed on March 30, 2021.

Inclusion criteria

Mothers of infants with appropriate birth weight and gestational age at the recruitment period entered the study. Newborns were admitted to intermediate or intensive care, and mothers with contraindications for exclusive breastfeeding were excluded.

Studio size

The sample was a nonprobabilistic census type, in which all possible cases of the institution were included.

Variables

The variables were the mother's age, marital status, education, work activity, prenatal check-ups, type of delivery, early adherence to breastfeeding, immediate breastfeeding, rooming-in, well-child check-up, prenatal counseling, postnatal counseling, and exclusive breastfeeding.

Data sources/measurement

Participants were recruited through a baseline assessment at the time of delivery. The data were obtained directly from the study participants, and the institutional clinical file was followed up for five months through an electronic survey.

Statistical method

The univariate analysis was descriptive of all the variables, using the mean and standard deviation for the variables on the scale. For categorical variables, frequencies and percentages are used. The analytical bivariate analysis uses the variable "exclusive breastfeeding" for the analysis of 2 groups and their associated factors, which is presented as an odds ratio with a 95% confidence interval and a P value less than 0.05. The program used was EPI INFO V.7.2 (CDC, Atlanta, USA).

Results

A total of 114 mothers entered the study (Figure 1).

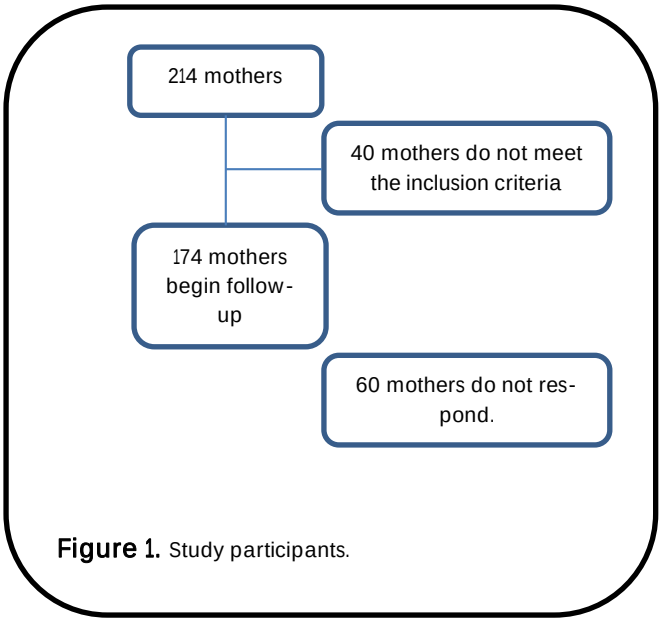

Figure 1. Study participants.

General characteristics of the study sample

The characteristics of the sample are described in Table 1. The average age of the participants was 31.2 ± 4.7 years.

A total of 73.7% of the participants were between 20 and 35 years old, 83.3% were women who were married or in a free union, and 82.5% had higher education. Most of the mothers had a job at the time of the study; 83.3% and 53.3% of the mothers teleworked. Regarding health care, almost all mothers (88.5%) reported having attended adequate pregnancy controls (more than 5), and 67.5% of mothers had a cesarean section; the practices of early attachment, immediate breastfeeding, and rooming-in are practices that are carried out in the instruction; however, the maternal perception reflects that almost half of the mothers did not consider having received early attachment, immediate breastfeeding or rooming-in.

Table 1. Population characteristics

Variables		No. (%)
Age	Between 20-35 years	84 (73.7%)
	> 35 years	30 (27.3%)
Civil status	Married-Commonwealth	95 (83.3%)
	Single-Separated	19 (16.7%)
Instruction	Superior	94 (82.5%)
	High school	16 (14%)
	Basic- none	4 (3.5%)
Work activity	Employment	95 (83.3%)
	Unemployment	19 (16.7)
Telecommuting	Yes	61 (53.5%)
	Not	53 (49.5%)
Prenatal check-ups	Five or more	101 (88.5%)
	< 5	13 (11.4%)
Type of delivery	Normal	37 (34.5%)
	Cesarean	77 (67.5%)
Early attachment	Yes	55 (48.3%)
	Not	59 (51.7%)
Immediate lactation	Yes	57 (50%)
	Not	53 (46.5%)
	She does not remember	4 (3.5%)
Joint accommodation	Yes	58 (50.9%)
	Not	56 (49.1%)
Go to well-child check-up	Not	5 (4.4%)
	Yes, monthly	80 (70.2%)
	Yes, bi or quarterly	29 (25.4%)
Prenatal counseling	Yes	47 (41.2%)
	Not	67 (58.8%)
Postnatal counseling	Yes	53 (46.5%)
	Not	61 (53.5%)

A total of 70.2% of the mothers had healthy child controls every month, 25.4% irregularly, and 4.4% had no well-child control. Regarding counseling, 41.2% considered receiving prenatal counseling, and 46.5% considered receiving postnatal counseling.

Prevalence of exclusive breastfeeding

The general prevalence of exclusive breastfeeding was 54.39% (95% CI 53.53 -55.2%), corresponding to 62 mothers in the study population. A total of 65.3% of the mothers who abandoned exclusive breastfeeding did so before one month, and 34.7% did so between the first and fifth months.

Association analysis

None of the sociodemographic factors studied presented statistical significance compared to exclusive breastfeeding. Regarding health care during the birth and hospitalization periods, the type of delivery, early attachment, immediate breastfeeding, and rooming-in were not statistically significant. Prenatal counseling was a statistically significant variable associated with a protective factor for exclusive breastfeeding. The variables use of breast milk substitutes at discharge and the presence of medical problems in the infant were statistically significant risk factors for the loss of exclusive breastfeeding (Table 2).

Table 2. Association with maternal and infant factors for lack of breastfeeding.

Variables	Lactation		OR	CI 95%	*P*
	Lack of breastfeeding n = 52	exclusive breastfeeding n = 62			
Prenatal counseling	21 (40.4%)	37 (59.7%)	0.458	0.216 – 0.970	0.0415
Breastmilk substitutes at discharge	24 (46.2%)	16 (25.8%)	2,464	1,121 – 5,419	0.0249
Infant Problems (Medical)*	34 (64.2%)	15 (24.2%)	5,919	2,620 – 13,371	<0.0001

*Problems: reflux, crying or persistent hunger.

The mother's medical problems, such as back pain, breast pain, hypogalactia, nipple injuries, and anatomical variations of the nipple, were not statistically significant; however, the infant did not present problems such as regurgitation, poor weight gain, crying, or persistent hunger, representing a statistically significant factor. The 72.3% of the mothers whose children did not present the problems mentioned earlier maintained breastfeeding, compared to 30.6% who maintained exclusive breastfeeding when their children presented any of these problems ($P < 0.001$).

Discussion

The population that was part of this study consisted of 114 mothers of infants born in a private institution located in the city of Quito during the period of confinement by COVID-19 April-June 2020; the average age of the participants was 31.2 years, with a standard deviation of 4.7, and 82.5% of the mothers had higher education.

This study found that the general prevalence of exclusive breastfeeding during the period of confinement in 2020 was 54.4% in the population studied; compared with the prevalence reported by ENSANUT 2018 [7, 8] for the urban population (58.4%), a decrease of 4 percentage points is evident; this value remains above that recommended by the WHO, -50%. In addition, it was observed that the highest percentage of breastfeeding abandonment was between birth and the first month of life, of the percentage of mothers who abandoned breastfeeding, 65.3% did so during this period, while from the first month to at six months of age, only 34.7% abandoned breastfeeding, contrary to what was observed prior to the confinement period, in which the abandonment of breastfeeding was progressive as the infant grew older, as indicated by the Spanish Association of Pediatrics in 2016.

Breaking down the general prevalence value by the level of education, 82.4% of the population studied maintains higher education; according to ENSANUT 2018 [7, 8], the prevalence of exclusive breastfeeding for this group is 50.2%. In this study, a prevalence of 54.3% is obtained, with an increase of 4.1 percentage points in the three months of confinement.

Other factors associated with exclusive breastfeeding were not included in the ENSANUT survey [7, 8]. It is evident that sensitizing the mother to maintain exclusive breastfeeding, not recommending breast milk substitutes to the mother after discharge of the newborn, is a protective factor of breastfeeding. In addition, it was observed that the absence of treatable problems such as reflux, regurgitation, colic, slight weight gain, crying or persistent hunger was a protective factor for maintaining breastfeeding.

This study shows that during the period of confinement imposed by COVID-19 during 2020, there was a decrease in the prevalence of exclusive breastfeeding compared to the studies carried out in the country in 2018; however, it is evident that this the decrease occurred mainly between birth and the first month of life, associated with the early initiation of

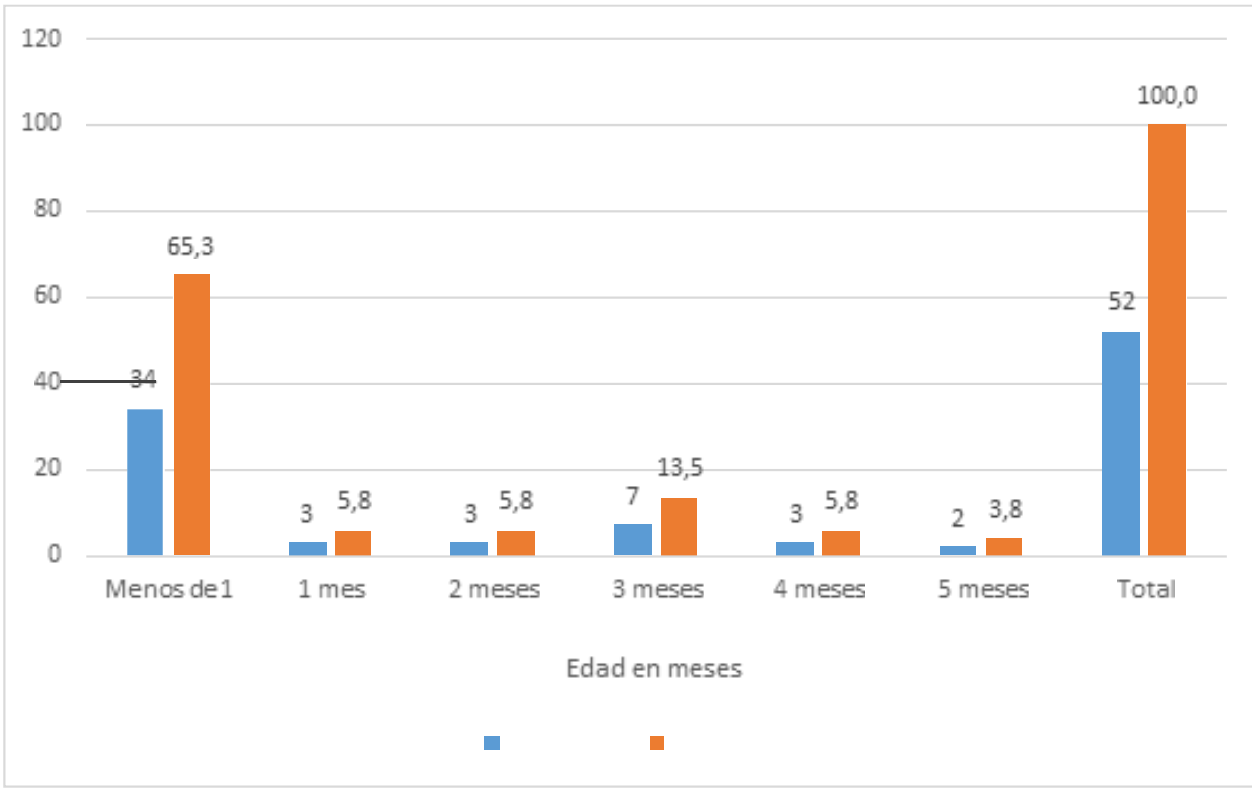

Figure 2. Abandonment of breastfeeding by age.

breast milk substitutes and treatable.Problems in the infant, which generally present during the first month of life, the other factors that were associated with the abandonment of breastfeeding prior to the pandemic, such as the mother's schooling, the mother's work activity, the type of delivery, hypogalactia, nipple problems, among others; in this study, they were not statistically significant.

Conclusions

There is more significant abandonment of breastfeeding, despite the longer contact time between mother and child. Abandonment occurs within the first month of life in 65.3% of cases and is associated with breast milk substitutes at the time of discharge of the newborn. There is an association between infant problems—reflux, persistent crying or hunger, perception of low weight by the mother—and abandonment of exclusive breastfeeding. There is no statistical relationship between counseling by health personnel and exclusive breastfeeding.

Abbreviations

CI: confidence interval.
EBF: Exclusive Breastfeeding
OR: odds ratio.

Supplementary information

Supplementary materials are not declared.

Acknowledgments

The representatives and administrators of the Santa Bárbara Clinic, where the study was conducted, are acknowledged and thanked.

Author contributions

Elizabeth Contreras Mora: Conceptualization, Data Retention, Fundraising, Research, Resources, Software, Writing - original draft.
Roberto Núñez: conceptualization, data retention, supervision, fundraising, research, resources, and writing: proofreading and editing.
Carlos Erazo: Data curation, research, fundraising, supervision, methodology.

All authors read and approved the final version of the manuscript.

Financing
The authors financed the expenses incurred in the production of this research.

Availability of data and materials
The data sets generated and analyzed during the current study are not publicly available due to participant confidentiality but are available through the corresponding author upon reasonable academic request.

Statements

Ethics committee approval and consent to participate
It was not needed.

Publication consent
It does not apply to studies that do not publish MRI/CT/Rx images or physical examination photographs.

Conflicts of interest
The authors declare no conflicts of interest.

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