

# Factors Associated with the Initiation and Continuation of Breastfeeding up to Four Months in Consuelo, Dominican Republic

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## BACKGROUND

- The World Health Organization (WHO) recommends exclusive breastfeeding (BF) for a minimum of 4-6 months
- Previous work from Niños Primeros en Salud clinic (NPS) in the rural town of Consuelo, Dominican Republic, reported that only 38.6% of mothers exclusively BF for over four months
- The goal of this quality improvement project was to examine various maternal and child factors associated with initiation of BF in the first week of life and continued BF to four months

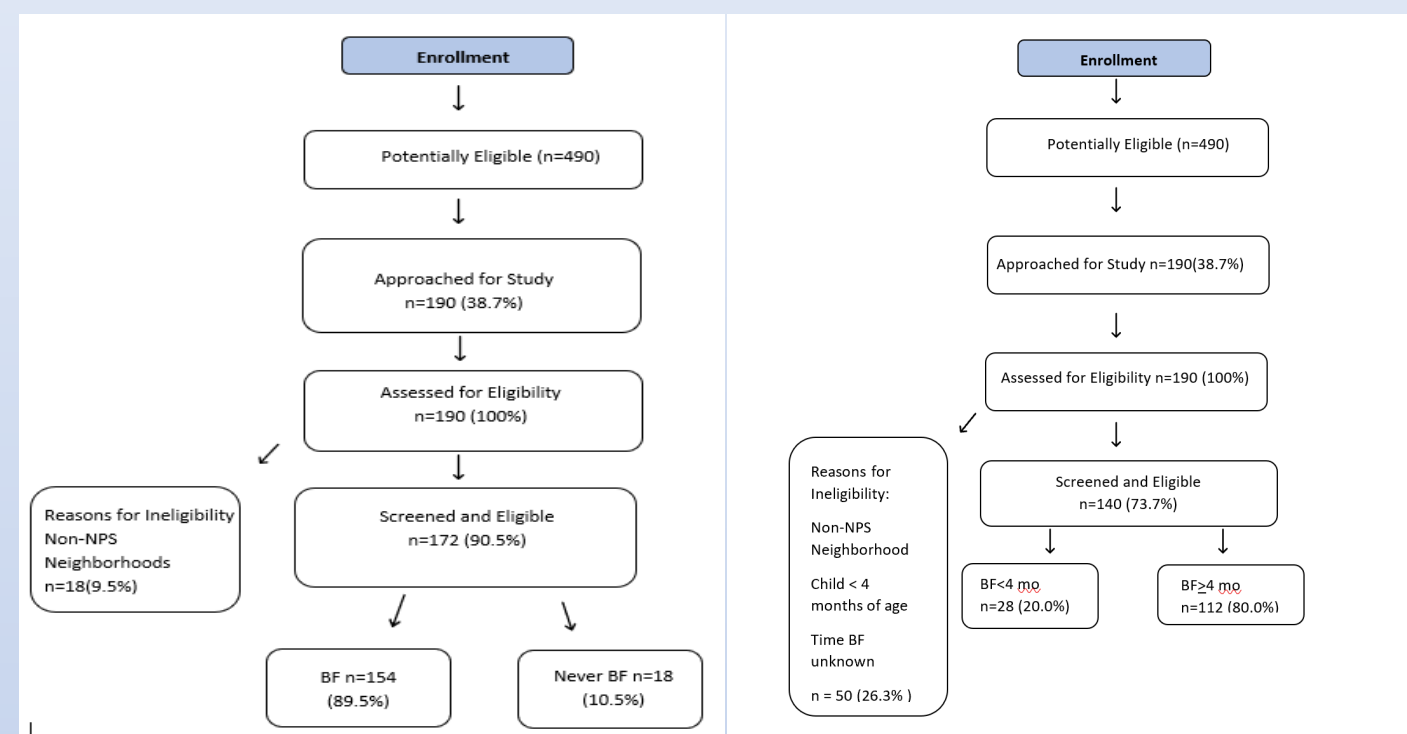
## OBJECTIVES

1. To quantify the rates of BF in the first week and up to four months of life
2. To examine child and maternal factors associated with initiating BF in the first week and continuing BF up to four months

## METHODS

- A Spanish survey was developed with NPS colleagues
- It was administered to 172 mothers of children aged 0-5 years who are cared for at the NPS clinic
- Spanish interviews lasted 10-15 min and occurred following patients' regularly scheduled clinic appointments
- To test for statistical significance between 2 groups, we used Pearson X<sup>2</sup> test (categorical data), or Wilcoxon rank-sum (nonparametric continuous data). The incidence of "not BF" was >10%, hence we calculated relative risks.
- All clinically significant variables were included in the univariate (UV) model. For the multivariate model all factors from the UV model with p<0.2, as well as important clinical factors such as maternal age, employment status, and number of previous children were included.

## STUDY FLOW DIAGRAMS



## RESULTS (n=172)

**Table 1: Univariate analysis of factors associated with initiation of BF in 1st week**

Variable*	Risk Ratio(RR)	Risk Ratio 95% CI	p-value
Maternal age	1.00	0.98-1.02	0.95
Age of most recent child(months)	0.99	0.99-1.00	0.70
No. of biological children	0.98	0.87-1.10	0.72
No. of children in households	0.97	0.88-1.06	0.50
Mode of birth <sup>1</sup>	Reference	-	-
Vaginal	Reference	-	-
Cesarian	0.95	0.75-1.20	0.68
Unknown	0.64	0.25-1.63	0.35
No. of pregnancies	1.00	1.00-1.00	<0.001
Weeks of gestation with most recent pregnancy	1.00	0.99-1.00	0.91
No. medical visits completed during pregnancy	1.01	0.75-1.37	0.95
Type of health center visited during pregnancy	Reference	-	-
Public	1.39	0.89-0.98	0.11
Private	Reference	-	-
Both	1.67	1.14-2.45	0.008
Unknown	<0.001	<0.001-<0.001	<0.001
Type of health center visited at birth <sup>1</sup>	Reference	-	-
Public	1.23	0.86-1.76	0.26
Private	Reference	-	-
Both	1.67	1.14-2.45	0.008
Unknown	<0.001	<0.001-<0.001	<0.001
Time between most recent and previous pregnancy	1.00	1.00-1.00	0.053
Maternal pre-existing health conditions <sup>2</sup>	Reference	-	-
None	Reference	-	-
Hypertension	0.95	0.72-1.24	0.69
Other	0.80	0.48-1.32	0.39
Hypertension & Diabetes	0.83	0.47-1.45	0.51
Diabetes	0.96	0.58-1.58	0.86
Sickle cell disease	0.73	0.26-2.03	0.55
Asthma	1.22	1.04-1.43	0.97
Employment status <sup>3</sup>	Reference	-	-
Domestically occupied	Reference	-	-
Employed	0.84	0.65-1.09	0.20
Unknown	<0.001	<0.001-<0.001	<0.001
Education level <sup>4</sup>	Reference	-	-
None/Elementary	Reference	-	-
Secondary	1.13	0.67-1.88	0.65
University	1.14	0.66-1.99	0.63
Unknown	0.29	0.011-7.36	0.45
Neighborhood <sup>5</sup>	Reference	-	-
Filii	0.97	0.59-1.60	0.92
La 41	1.06	0.65-1.73	0.82
Enriquillo	1.23	0.77-1.97	0.40
Cachipero	Reference	-	-
Carratera	1.13	0.65-1.98	0.67
Kilombo	0.70	0.29-1.67	0.42
Puerto Rico	1.36	0.89-2.09	0.16
Puerto Principe	1.36	0.89-2.09	0.16
Villa Verde	0.00	0.00-0.01	<0.001

**Table 2: Multivariate logistic regression model of factors associated with initiation of BF in 1st week.**

Variable*	Risk Ratio	Risk Ratio 95% CI	p-value
Maternal age	1.0	0.99-1.29	0.050
No. of biological children	0.91	0.79-1.05	0.190
Type of health center visited during pregnancy	Reference	-	-
Public	1.38	0.95-2.00	0.086
Private	Reference	-	-
Both	1.60	1.11-2.29	0.011
Unknown	<0.001	<0.001-<0.001	<0.001
Employment status	Reference	-	-
Domestically occupied	Reference	-	-
Employed	0.85	0.66-1.09	0.198
Unknown	<0.001	<0.001-<0.001	<0.001

## RESULTS (n=140)

**Table 3: Univariate analysis of factors associated with continued BF to 4 Months.**

Variable*	Risk Ratio	Risk Ratio 95% CI	p-value
Maternal age	1.00	0.98-1.02	0.74
Age of most recent child(months)	1.00	0.98-1.01	0.69
No. of biological children	1.00	0.84-1.18	1.00
No. of children in households	1.00	0.85-1.14	0.98
Mode of birth <sup>1</sup>	Reference	-	-
Vaginal	Reference	-	-
Cesarian	0.55	0.36-0.83	0.005
Unknown	7.40	0.001-2.60	0.14
No. of pregnancies	1.01	0.96-1.07	0.54
Weeks of gestation with most recent pregnancy	0.98	0.95-1.02	0.31
No. medical visits completed during pregnancy <sup>2</sup>	0.89	0.62-1.30	0.55
Type of health center visited during pregnancy <sup>2</sup>	Reference	-	-
Public	2.50	1.22-5.20	0.013
Private	Reference	-	-
Both	0.34	0.30-0.94	0.70
Unknown	<0.001	<0.001-<0.001	<0.001
Type of health center visited at birth <sup>1</sup>	Reference	-	-
Public	2.49	1.22-5.07	0.012
Private	Reference	-	-
Both	0.34	0.30-0.94	0.70
Unknown	<0.001	<0.001-<0.001	<0.001
Time between most recent and previous pregnancy	1.00	1.00-1.00	0.19
Maternal pre-existing health conditions <sup>3</sup>	Reference	-	-
None	Reference	-	-
Hypertension	1.10	0.70-1.72	0.68
Other	0.71	0.31-1.60	0.40
Hypertension & Diabetes	1.31	0.75-2.30	0.34
Diabetes	0.86	0.33-2.27	0.76
Sickle cell disease	1.0	0.35-2.87	1.0
Asthma	1.0	0.35-2.87	1.0
Employment status <sup>3</sup>	Reference	-	-
Domestically occupied	Reference	-	-
Employed	0.73	0.47-1.13	0.15
Unknown	<0.001	<0.001-<0.001	<0.001
Education level <sup>4</sup>	Reference	-	-
None/Elementary	Reference	-	-
Secondary	0.76	0.48-1.19	0.22
University	0.65	0.34-1.24	0.19
Unknown	<0.001	<0.001-<0.001	<0.001
Neighborhood <sup>5</sup>	Reference	-	-
Filii	0.63	0.46-0.87	0.005
La 41	0.26	0.07-1.00	0.05
Enriquillo	0.89	0.20-0.79	0.009
Cachipero	Reference	-	-
Carratera	0.78	0.48-1.26	0.32
Kilombo	0.26	0.07-1.00	0.05
Puerto Rico	0.46	0.16-1.36	0.16
Puerto Principe	0.66	0.29-1.50	0.32
Villa Verde	0.52	0.34-0.91	0.32

**Table 4: Multivariate logistic regression of factors associated with continued BF to 4 Months.**

Variable*	Risk Ratio	Risk Ratio 95% CI	p-value
Maternal age	1.02	0.99-1.04	0.13
No. of biological children	0.89	0.75-1.05	0.18
Type of health center visited during pregnancy	Reference	-	-
Public	1.60	0.53-4.84	0.41
Private	Reference	-	-
Both	1.0	0.21-4.78	1.0
Unknown	<0.001	<0.001-<0.001	<0.001
Type of health center visited at birth	Reference	-	-
Public	1.27	0.39-4.09	0.69
Private	Reference	-	-
Both	1.0	0.21-4.78	1.0
Unknown	<0.001	<0.001-<0.001	<0.001
Employment status	Reference	-	-
Domestically occupied	Reference	-	-
Employed	0.76	0.50-1.17	0.21
Unknown	<0.001	<0.001-<0.001	<0.001
Mode of birth	Reference	-	-
Vaginal	Reference	-	-
Cesarian	0.61	0.41-0.93	0.02
Unknown	0.11	0.002-4.67	0.25

## CONCLUSIONS

- BF initiation rate in Consuelo, DR, was 89.5%
- Rate of BF up to 4m (of those who started) was 81.7%
- Women who had a cesarian section were 60% less likely to BF than women who had a natural birth
- Univariate analyses suggested that receiving prenatal care in a public clinic, as opposed to a private location, increased rates of BF initiation and continuation, but was not statistically significant in the multivariate model (p=0.09 and p=0.41, respectively)

### Future Directions

- There is still work to be done to achieve optimal BF practices in Consuelo