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Time trend in breast-feeding in the city of Rio de Janeiro, Southeastern Brazil: 1996-2006

ABSTRACT

OBJECTIVE: To analyze time trend in breast-feeding (BF) and exclusive breast-feeding (EBF).

METHODS: Data from a monitoring system, based on surveys conducted during the National Immunization Campaign in the city of Rio de Janeiro, Southeastern Brazil, in 1996, 1998, 2000, 2003 and 2006, were analyzed. Study population was comprised of 19,044 children younger than one year of age, who were present in vaccination stations. A probability cluster sample (vaccination stations), self-weighted and representative of the population of children younger than 12 months of age (<12), was studied for each year. A structured questionnaire with closed questions about the child's diet at the moment of the study and maternal sociodemographic characteristics was applied. The BF and EBF indicators proposed by the World Health Organization were adopted.

RESULTS: BF<12 increased from 61.3% to 73.4% between 1996 and 2006. Similar trend was observed in all age groups analyzed. EBF in children <4 and <6 months of age (EBF<6) increased from 18.8% to 42.4% and from 13.8% to 33.3%, respectively. Improvements in BF>6 and EBF<6 were found in all categories of all maternal sociodemographic variables. For EBF<6, the disadvantage observed in women with a lower level of education in 1996 and in women who worked in 1998 was not completely overcome by 2006.

CONCLUSIONS: BF and EBF increased in the period studied, independently from child age group and maternal sociodemographic characteristics. The differences found among women in distinct sociodemographic situations were not completely overcome.

DESCRIPTORS: Breast Feeding, Epidemiology, Infant Nutrition, Socioeconomic Factors, Maternal and Child Health, Time Series Studies.

INTRODUCTION

In the last decades, the growing process of promotion of and investment in breast-feeding results from the involvement and mobilization of organized civil society, the work of international organizations and the implementation of public policies.^{13,16,17,a} However, assessment of the repercussion of such actions on the improvement of breast-feeding indices is scarce in the international literature.

The World Health Organization (WHO) estimates that 35% of infants younger than four months of age are exclusively breast-fed and that the median duration of breast-feeding is 18 months, with important differences among countries and world regions.¹⁸

In Brazil, considerable decrease in breast-feeding (BF) between the 1960s and 1970s and intensification of actions aimed at the recovery of this practice from the 1980s onwards were observed.^{1,6,8,10,14,15} National studies reveal that the median duration of BF went from 74 days in 1975 to 134 days in 1989, to about 210 days in 1996 and to 282 days in 2006.^{15,b,c,d} As regards exclusive breast-feeding (EBF), it is estimated that, in 1986, 3.6% of babies younger than four months of age were exclusively breast-fed, without any other liquid or solid foods.^e In 1999, studies performed in Brazilian state capitals and the Federal District indicated that BF and EBF prevalences at six months of age varied from 53.8% to 84.6% and from 2.8% to 16.9%, respectively. Among infants aged four months, these prevalences varied from 64.6% to 90.0% and from 7.2% to 32.2%, respectively.¹¹ On average, EBF prevalence in infants aged between zero and four months was 35.6%.¹⁴ In 2006, a national study indicated BF and EBF prevalences of 91.8% and 39.8%,^d respectively, in infants younger than six months. All these results reveal the important increase in breast-feeding in the last decades in Brazil.

Following the process of intensification of breast-feeding promotion in the country, the city of Rio de Janeiro, Southeastern Brazil, has implemented several strategies since the 1980s. Aiming to follow the time trends of this practice in the city, supported by several academic institutions, the City of Rio de Janeiro Department of Health implemented a population-based monitoring system of diet habits among children younger than one year of age in 1996.^f

The present study aimed to analyze the time trend of breast-feeding and exclusive breast-feeding and their evolution according to maternal sociodemographic characteristics.

METHODS

Data from surveys conducted as routine practice of the City of Rio de Janeiro Department of Health were used. These surveys are conducted during national vaccination campaigns against poliomyelitis (mean coverage of 98.7% of the target group in the city, during the study period), from which indicators for current child diet ("current status")^{3,14} are constructed. Data from the 1996, 1998, 2000, 2003 and 2006 surveys were analyzed.

The study population was comprised of children younger than one year of age. Probability cluster samples (vaccination stations), self-weighted and representative of this population, were calculated, based on the number of children in this age group who were vaccinated in each vaccination station, in the year preceding the survey.

Data collection involved a closed structured questionnaire, applied to adults accompanying children by qualified volunteers, most of who were undergraduate students in nutrition, supervised by City of Rio de Janeiro Department of Health professionals and professors from partner universities.

Although surveys had been planned to be conducted in the first stage of the vaccination campaign, due to logistical limitations, some of the interviews (37%, on average) were performed in the second stage until 2003. To avoid the same children being interviewed two times, data collection in each stage covered part of the city area, enabling vaccination stations located in the same geographic area to be studied in one single stage.

The questionnaire used included the following topics: child's diet at the moment of study (a food frequency method was used in 1996, while the 24-hour recall was used from 1998 onwards); delivery and birth characteristics; food consumption on the first day at home (for infants younger than four months of age) and maternal characteristics (age, parity, level of

^a World Health Organization. The optimal duration of exclusive breastfeeding. Results of a WHO systematic review. Geneva; 2001. (Note for the Press, 7).

^b Leão MM, Coitinho DC, Recine E, Costa LAL, Lacerda AJ. O perfil do aleitamento materno no Brasil. In: Instituto Brasileiro de Geografia e Estatística / Fundo das Nações Unidas para a Infância. Perfil estatístico de crianças e mães no Brasil. Rio de Janeiro, 1989. p.97-110.

^c Bem-Estar Familiar no Brasil. Pesquisa Nacional sobre Demografia e Saúde [Relatório de Pesquisa]. Rio de Janeiro; 1997

^d Ministério da Saúde. PNDS 2006. Pesquisa Nacional de Demografia e Saúde da Criança e da Mulher. Brasília; 2008.

^e Monteiro CA. O panorama da nutrição infantil nos anos 90. São Paulo: UNICEF; 1997. (Série Cadernos de Políticas Sociais. Documentos para Discussão, 1).

^f Castro IRR, Damião JJ, Montenegro CA, Gomes MASM, Azevedo AMF, Brasil CLP, et al. Breast-feeding Surveillance System (BSS) nested in national days of vaccination: design and findings in the city of Rio de Janeiro (Rio)-Brazil. In: Abstracts of International Congress of Nutrition. Vienna: Austrian Nutrition Society; 2001. p.437.

education, work at the moment of study). Some of the changes that occurred in the questionnaire throughout the period studied did not compromise comparisons among surveys in terms of breast-feeding and exclusive breast-feeding indicators.

The WHO breast-feeding categories were adopted:^a exclusive breast-feeding (EBF) – infants who were exclusively breast-fed and did not receive any other liquid or solid foods, except for mineral supplements, vitamins or medications; breast-feeding (BF) – infants who were breast-fed, with or without supplements.

Thus, breast-feeding indicators, constructed for time trend analysis, were as follows: EBF and BF prevalences in children younger than four months of age, between four and 5.9 months of age, and younger than six months (EBF<4, EBF4-5.9, EBF<6, BF<4, BF4-5.9 and BF<6, respectively) and BF prevalence in children aged six months and older and those younger than 12 months (BF≥6 and BF<12). Standard-error of prevalence estimates was calculated, considering the cluster sample design.

To compare breast-feeding estimates among the study years, aiming to control the potential effect that possible changes in the sociodemographic profile of mothers of the children studied could have on estimated prevalences, a logistic regression analysis was made for each of the breast-feeding indicators constructed. The dependent variable was the breast-feeding indicator and the independent variables were the year of surveys and maternal characteristics available: age (<20, 20-24, 25-29, 30-34 and ≥35 years) and level of education (<7, 8-10 and ≥11 years of education).

Two types of comparison were made among the years. First, the year of study was included in the model as dummy variable, with the prevalence odds ratio (POR) of each year being analyzed in relation to the base year (1996). POR estimates were considered to be statistically significant when their confidence intervals did not include the value 1.

Next, the year of study was included in the model as a continuous variable for the analysis of linear trend of prevalence estimates, where the variable year showing a p value<0.05 for Wald statistics was considered a statistically significant trend.

Moreover, additional analyses of linear trend were made for the outcomes of interest, using the set of data between 1998 and 2006 and with all maternal characteristics available for this period being considered in the adjustment: age, level of education, primiparity (yes or no) and work (yes or no).

Analysis of the evolution of breast-feeding according to maternal characteristics was made for the EBF<6 and BF≥6 indicators, based on the international recommendation^a of exclusive breast-feeding until six months of age and maintenance of breast-feeding until two years of age or older. For this analysis, the comparison among years of study according to maternal age and level of education was made using regression models that considered the set of 1996-2006 data and including the year of study and maternal level of education and age as independent variables. Models that took into consideration the set of 1998-2006 data and included the year of study and maternal level of education, age, parity and work as independent variables were used to analyze the evolution of these indicators according to maternal parity and work, considering the fact that all this information was only available from 1998 onwards.

The analysis of association between BF≥6 and EBF<6 and maternal characteristics for each year used logistic regression models.

Given the difference in time intervals among studies, trend analysis was complemented with the analysis of the rate of absolute annual variation in BF and EBF prevalences, according to the age groups selected.

The databases were constructed using the Epi Info software, version 6.04, and the SPSS software, version 13.0.

Population representativeness of samples was analyzed by the comparison between certain study variables and the National Information System on Live Births. The following variables were compared: low weight at birth (% <2,500g), maternal age and level of education (categorized as <7, 8-11 and ≥12 years of education, following the information system structure).

The population studied in the five surveys totaled 19,044 children younger than one year of age, of which 3,738, 3,742, 3,652, 4,279, 3,633 children were studied in 1996, 1998, 2000, 2003 and 2006, respectively. Sample distribution in relation to child age and maternal characteristics is shown in Table 1.

The surveys conducted followed the ethical standards required by the Declaration of Helsinki and Resolution 196/96 of the National Health Council. Since 2003, research protocols have been approved by the City of Rio de Janeiro Department of Health Research Ethics Committee.

RESULTS

For all the children studied, BF<12 increased from 61.3% to 73.4% between 1996 and 2006 (trend

^a World Health Organization. Indicators for assessing breastfeeding practices. Report of an informal meeting. Geneva; 1991.

$p=0.000$), with a statistically significant increase from 2003 onwards (when the models that treated the year of study as dummy variable were considered). Similar trend of increase was also observed in all age groups analyzed (Table 2).

EBF showed a linear trend of increase in all age groups analyzed ($p=0.000$), with prevalences that were, at the end of the period studied, between 2.3 and 2.5 times higher than those in the beginning of the period (Table 3). Statistically significant differences for EBF<4, EBF<6 and EBF4-5.9 were observed from 2000, 1998 and 2006 onwards, respectively (when models that treated the year of study as dummy variable were considered).

Additional analyses of linear trend, considering the set of data from 1998 to 2006, and all maternal variables available for this period (age, level of education, primiparity and work) also showed a trend of statistically significant increase for both indicators (BF and EBF) in all age groups analyzed ($p=0.000$, except for BF<4 months ($p=0.001$) and for EBF4-5.9 ($p=0.002$)).

In the period between 1996 and 2006, mean rates of increase of EBF<4 and EBF<6 were above those observed for BF<6 and BF \geq 6, with the highest variations observed for EBF in the period between 2003 and 2006, and for BF, between 2000 and 2003 (Table 4).

Table 1. Distribution of the population studied according to child age and maternal characteristics by year of study. City of Rio de Janeiro, Southeastern Brazil, 1996-2006.

Variable	Year of survey									
	1996		1998		2000		2003		2006	
	n	%	n	%	n	%	n	%	n	%
Child age group (months)										
< 4	1.242	33.2	1.191	31.8	1.268	34.7	1.486	34.7	1.264	34.5
4 - 5.9	708	18.9	649	17.3	642	17.6	736	17.2	536	15.4
6 - 12	1.788	47.8	1.902	50.8	1.742	47.7	2.057	48.1	1.833	50.1
Maternal age group (years)										
< 20	624	16.8	698	18.8	646	17.8	694	16.4	597	16.4
20 - 24	1.057	28.5	1.047	28.3	1.019	28.1	1.192	28.2	975	26.8
25 - 29	889	20.4	910	24.6	890	24.6	1.072	25.3	896	24.6
30 - 34	701	18.9	635	17.1	656	18.1	746	17.6	684	18.8
\geq 35	437	11.8	414	11.2	412	11.4	530	12.5	485	13.3
Maternal level of education (completed years of education)										
\leq 7	1.630	45.5	1.589	44.5	1.448	41.7	1.432	35.3	1.070	30.0
8 - 10	856	23.9	901	25.3	917	26.4	1.102	27.2	938	26.3
\geq 11	1.097	30.6	1.077	30.2	1.107	31.9	1.524	37.6	1.556	43.7
Primiparity	---	---	3.710 ^a	47.6	3.647 ^a	46.4	4.236 ^a	45.3	3.620 ^a	48.5
Maternal work	---	---	3.703 ^a	24.4	3.621 ^a	21.2	4.232 ^a	23.1	3.614 ^a	26.8

^a Number of cases with information available.

Table 2. Prevalence of breast-feeding in children younger than 12 months of age according to child age group by year of study. City of Rio de Janeiro, Southeastern Brazil, 1996-2006.

Age group (months)	Year of survey					p-value ^b
	1996	1998	2000	2003	2006	
	% (SE) ^a	% (SE)	% (SE)	% (SE)	% (SE)	
<4	81.6 (1.3)	82.4 (1.2)	85.8 (0.9)	88.4 (0.9)	89.7 (1.1)	0.000
4 -5.9	62.3 (2.2)	61.6 (2.1)	59.7 (2.0)	72.1 (1.8)	75.0 (1.5)	0.000
<6	74.6 (1.2)	75.1 (1.3)	77.0 (1.0)	83.0 (0.9)	85.2 (1.0)	0.000
\geq 6	46.8 (1.2)	45.0 (1.5)	45.1 (1.3)	53.8 (1.2)	61.8 (1.3)	0.000
Total	61.3 (1.0)	59.8 (1.1)	61.8 (1.0)	68.9 (0.8)	73.4 (0.9)	0.000

^a Standard error of the estimate.

^b For linear trend, adjusting for maternal age and level of education.

Table 3. Prevalence of exclusive breast-feeding in children younger than six months of age according to age group by year of survey. City of Rio de Janeiro, Southeastern Brazil, 1996-2006.

Age group (months)	Year of survey					p-value
	1996 % (SE)*	1998 % (SE) ^a	2000 % (SE)	2003 % (SE)	2006 % (SE)	
< 4	18.8 (1.4)	22.1 (1.3)	23.9 (1.2)	31.3 (1.5)	42.4 (1.8)	0.000
4-5.9	5.1 (0.7)	7.4 (1.2)	6.5 (1.1)	7.1 (0.8)	13.0 (1.5)	0.000
<6	13.8 (0.9)	16.9 (1.0)	18.1 (1.0)	23.3 (1.0)	33.3 (1.5)	0.000

^a Standard error of the estimate.

^b For linear trend, adjusting for maternal age and level of education.

A trend of statistically significant increase of EBF<6 and BF≥6 was found in mothers of all age groups and levels of education, in primiparous and multiparous mothers and in those who worked and did not work at the moment of the study (trend p=0.000 in all situations).

Models that treated the year of study as dummy variable indicated statistically significant differences in the EBF<6 and EBF≥6 estimates throughout the period studied, corroborating the results obtained using linear regression models.

The analysis of association between EBF<6 and BF≥6 and maternal characteristics showed that there was no association between these indicators and maternal age and parity (except for age and EBF<6 in 1996 and for parity and BF≥6 in 1998). Maternal level of education was directly associated with EBF<6, but not with BF≥6 (except in 1996) and maternal work was associated with both indicators in all years of study when this information was available. The disadvantage observed in women with lower level of education was not overcome until 2006. On the other hand, the advantage observed for EBF<6 in women who did not work decreased in the period studied, with the prevalence ratio for this indicator varying from 2.73 in 1996 to 1.86 in 2006. This occurred due to the proportionately greater increase of EBF in women who worked (Table 5).

DISCUSSION

Based on the five surveys conducted, it can be affirmed that there was an increase in BF prevalence in children younger than one year of age, both in the first and second semesters of life, and a great increase in EBF in the three age groups studied (<4; 4 to 5.9; and <6 months). In addition, the increase of EBF<6 and BF≥6 occurred in mothers from all age groups and levels of education, in those primiparous and multiparous, and in those who worked and did not work at the moment of the study. The disadvantage observed in EBF<6 in mothers who worked decreased, but had not been completely overcome by the end of the period studied.

As regards the population representativeness of samples, the distribution of maternal age in all the years studied was similar to that observed in the National Information System on Live Births. On the other hand, the distribution of maternal level of education revealed an under-representation of the segment of women with higher level of education (12 or more years of education) (mean of 12.1% in the studies and 24.4% in the National Information System on Live Births). Consequently, estimates of EBF prevalence, which was found to be positively associated with maternal education, could have been under-estimated in the present study. In other words, the magnitude of EBF is at least

Table 4. Rate of absolute annual variation (percentage point) of prevalence of breast-feeding and exclusive breast-feeding in children younger than one year of age according to age group by period of time. City of Rio de Janeiro, Southeastern Brazil, 1996-2006.

Categories of breast-feeding and child age (in months)	Period of time				
	1996 / 1998	1998 / 2000	2000 / 2003	2003 / 2006	1996 / 2006
Exclusive breast-feeding					
< 4	1.65	0.90	2.47	3.70	2.36
< 6	1.55	0.60	1.73	3.33	1.95
Breast-feeding					
< 6	0.25	0.95	2.00	0.73	1.06
≥ 6	-0.90	0.05	2.90	2.67	1.50

Table 5. Prevalence of exclusive breast-feeding in children younger than six months of age (EBF<6) and of breast-feeding in children aged between six and 12 months (BF≥6) according to maternal sociodemographic variables by year of study. City of Rio de Janeiro, Southeastern Brazil, 1996-2006.

Variable	EBF < 6					BF ≥ 6				
	1996 % (SE) ^a	1998 % (SE)	2000 % (SE)	2003 % (SE)	2006 % (SE)	1996 % (SE)	1998 % (SE)	2000 % (SE)	2003 % (SE)	2006 % (SE)
Age group (years)										
<20	9.3 (1.3)	12.8 (1.8)	16.6 (1.9)	22.0 (2.8)	31.3 (2.6)	47.3 (3.8)	38.3 (3.0)	48.5 (2.8)	54.2 (3.0)	65.3 (3.1)
20-24	11.9 (1.6)	15.4 (1.5)	16.2 (1.7)	21.7 (1.7)	30.3 (2.3)	46.8 (2.3)	46.5 (2.3)	45.5 (2.2)	54.9 (2.2)	58.5 (2.2)
25-29	17.2 (1.9)	19.5 (2.1)	19.8 (2.2)	26.1 (2.3)	34.8 (2.5)	50.9 (2.5)	46.3 (2.3)	47.2 (2.5)	54.1 (2.0)	62.7 (2.2)
30-34	16.5 (2.0)	19.2 (2.3)	20.5 (2.3)	22.8 (2.4)	38.9 (2.9)	45.4 (2.6)	45.0 (3.3)	42.2 (3.0)	54.3 (2.7)	60.5 (2.9)
≥ 35	14.3 (2.1)	20.8 (2.6)	18.7 (2.7)	24.8 (2.5)	33.3 (3.8)	44.0 (3.5)	47.6 (4.1)	40.9 (3.4)	51.9 (2.9)	64.7 (2.7)
p-value ^b	0.020	0.614	0.427	0.522	0.071	0.250	0.211	0.495	0.583	0.300
Level of education (years of education)										
≤ 7	12.1 (1.2)	13.3 (1.1)	15.7 (1.3)	21.0 (1.5)	26.7 (1.9)	51.2 (1.5)	49.4 (1.8)	47.1 (1.9)	57.2 (2.2)	63.9 (2.7)
8 - 10	13.3 (1.7)	13.5 (1.5)	20.8 (2.0)	21.5 (1.8)	34.5 (2.4)	45.9 (2.3)	44.7 (2.7)	46.2 (2.2)	57.7 (2.1)	61.4 (2.8)
≥ 11	17.1 (1.7)	25.4 (2.0)	19.3 (1.7)	27.0 (1.6)	37.8 (2.1)	42.6 (1.9)	41.1 (2.8)	42.7 (2.9)	50.5 (1.9)	61.0 (1.8)
p-value ^c	0.156	0.000	0.032	0.017	0.002	0.005	0.106	0.869	0.396	0.510
Work										
Yes	—	7.0 (1.6)	9.1 (1.8)	16.5 (2.0)	19.9 (2.2)	—	38.4 (2.2)	33.7 (2.1)	44.7 (2.2)	53.9 (2.0)
No	—	19.1 (1.1)	19.8 (1.1)	24.7 (1.2)	37.0 (1.8)	—	47.9 (1.8)	49.6 (1.4)	57.9 (1.3)	65.7 (1.6)
p value ^d		0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.001
Primiparity										
Yes	—	14.6 (1.4)	17.5 (1.4)	24.0 (1.6)	33.1 (1.7)	—	42.1 (1.9)	45.6 (1.6)	52.4 (1.8)	58.5 (1.8)
No	—	18.8 (1.3)	18.7 (1.3)	22.8 (1.2)	33.2 (1.9)	—	48.0 (1.9)	44.7 (1.6)	55.0 (1.7)	64.9 (1.7)
p-value ^e		0.045	0.646	0.831	0.743		0.528	0.893	0.256	0.177

^a Standard error of the estimate.

^b Adjusting for maternal age in 1996 and for maternal level of education, primiparity and work from 1998 onwards.

^c Adjusting for maternal age in 1996 and for maternal age, primiparity and work from 1998 onwards.

^d Adjusting for maternal age, level of education and primiparity.

^e Adjusting for maternal age, level of education and work.

what was observed. Comparison between these findings and those from other studies is not simple, once both the methods adopted for data collection and the indicators constructed are not usually comparable. Studies were conducted in cities of different Brazilian regions, between 1997 and 2002, with a similar methodology and adoption of at least one of the following categories: EBF<4, EBF<6 and BF<12. Together, they provided data on 143 cities.^{4,5,8,11,12,14,15}

In these studies, EBF<4 varied from 18.8% (city of Rio de Janeiro, in 1996, data from the present study) to 48.8%¹⁵ (Feira de Santana, northeastern region, in 2001). The best result for EBF<4, observed in Rio de Janeiro (42.4% in 2006) was lower than those observed in Florianópolis, southern region, in 1997 (46.3%),⁵ almost ten years before, and in Feira de Santana, in 2001 (48.8%). The mean of EBF<4, observed in the Brazilian state capitals in 1999 (35.6%), was more

than 10% higher than that found in Rio de Janeiro in the same year (23%, when data from the 1998 and 2000 surveys are combined).

Comparing EBF<6 values, available in fewer studies, it was observed that, in 1999, the city of Rio de Janeiro showed an index higher than the mean of 111 cities in the state of São Paulo (17.5% (when results from 1998 and 2000 were combined) and 13.9%, respectively).¹⁴ However, the best results obtained for the city of Rio de Janeiro (33.3% in 2006) were lower than those recorded in Feira de Santana (38.5% in 2001). Yet, as regards BF<12, also available in fewer studies, indices varied between 50.7% (João Pessoa, northeastern region, in 1997)⁵ and 73.4% (Rio de Janeiro, RJ, in 2006).

These results show the great heterogeneity of BF and EBF in different Brazilian realities. In addition to the possible cultural, socioeconomic and demographic differences among places, another aspect that may explain such heterogeneity is the level of implementation of public policies that promote breast-feeding in each of these realities, information omitted in almost all studies.¹⁴

The positive association between EBF<6 and maternal level of education observed in the present study corroborates the results obtained in the study on 111 cities of the state of São Paulo,¹⁴ whereas the positive association between BF>6 and maternal work emphasizes the findings of the study on BF in infants younger than one year of age, performed in Londrina, Southern Brazil.¹²

The dynamics of the evolution of BF and EBF observed between 1996 and 2006 can be divided into two periods: in the first, from 1996 to 2000, a stability of BF in all age groups studied and an increase in EBF<6 were recorded. In the second, from 2000 to 2006, an increase in BF in all age groups and a sharper increase in EBF<6, compared to the period between 1996 and 2000, both in children who were <4 months of age and those between 4 months and 5.9 months of age, were recorded. These data indicate the complexity of the evolution of such practices, suggesting the need to monitor these dynamics as an instrument to formulate and, when necessary, redirect breast-feeding promotion actions. This is because, just as EBF and BF prevalences are heterogeneous in each reality, the dynamics of their evolution can also be heterogeneous, once they seem to be influenced by the initial magnitude of such practices

and by the differences in the approaches adopted in promotion actions that can be developed.¹⁴

The relevant increase in BF and EBF in Rio de Janeiro agrees with the intensification of breast-feeding promotion actions in Brazil and in this city in the last decades. On the national level, the aspects that characterize this process are as follows: the national coordination of actions, the interaction between public power and civil society, the innovative actions of social mobilization, the media campaigns and the effective implementation of strategies proposed internationally, such as the regulation of marketing and sales of breast-milk substitutes, the Baby-Friendly Hospital Initiative (BFHI), the implementation of a human milk bank network, the yearly held week of mobilization for breast-feeding and the qualification of human resources.^{1,9,10,14}

All these activities have been developed in the city of Rio de Janeiro. As a result, in 2006, it was observed that of all life births in local maternity hospitals, 77.4% were cared for in BFHI-accredited units, corresponding to 27.4% of all the live births living in this city.

In addition to these activities, the Breast-feeding-Friendly Primary Care Initiative was implemented in the city of Rio de Janeiro in 2000, aiming at promoting, protecting and supporting breast-feeding in the primary care network.⁷ Inspired by the BFHI and in agreement with the proposal of organization of actions in health care priorities, the Breast-feeding-Friendly Primary Care Initiative proposes directives for actions from pre-natal care to the first years of life and deals with the breast-feeding practice while considering aspects of sexuality, changes occurring during pregnancy and lactation, and rights of working women and students, among other things. Moreover, principles of counseling in breast-feeding are valued.⁷ Apparently, the Breast-feeding-Friendly Primary Care Initiative implementation influenced the sharper increase in BF and EBF, according to what is suggested by findings from a primary care unit of the city of Rio de Janeiro.²

In conclusion, the results shown by the present study reveal the dynamics of evolution of BF and EBF during one decade, in the state capital of a developing country. It was shown how this practice can change in short periods, suggesting that investing in promotion actions can in fact have positive repercussions for the increase in prevalence.

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