

# Factors associated with infant feeding practices after hospital discharge

## Fatores associados à prática alimentar do recém-nascido pós-alta hospitalar

Celene Aparecida Ferrari Audi<sup>a</sup>, A M S Corrêa<sup>a</sup>, M R D O Latorre<sup>b</sup> and Rafael Pérez-Escamilla<sup>c</sup>

<sup>a</sup>*Departamento de Medicina Preventiva-Epidemiologia. Faculdade de Ciências Médicas. Universidade Estadual de Campinas. Campinas, SP, Brasil.* <sup>b</sup>*Departamento de Epidemiologia. Faculdade de Saúde Pública. Universidade de São Paulo. São Paulo, SP, Brasil.* <sup>c</sup>*Department Nutrition and Public Health. University of Connecticut. Storrs, Connecticut, USA*

### Keyword

Breast feeding. Infant, newborn.  
Perinatal care. Infant care.

### Abstract

#### Objective

To assess factors associated with infant feeding practices on the first day at home after hospital discharge.

#### Methods

A total of 209 women, who had a child aged four months or less and were living in Itapira, Brazil, were interviewed during the National Immunization Campaign Day in 1999. Statistical analysis was performed using the Chi-square test and a logistic regression model was used for verifying an association between dependent and independent variables.

#### Results

Women aged 25.5 years on average and 18.2% were teenagers. Fifty-three percent of the women delivered vaginally and most vaginal deliveries (78.5%) took place in the public hospital. The prevalence of exclusive breastfeeding on the first day at home was 78.1% and 11.6% of the infants were receiving formula at this time. The only factor associated with EBF on the first day at home was being a teenaged-primiparous mother (OR=9.40; 95% CI: 1.24-71.27). This association remained statistically significant even after controlling for type of delivery and hospital where the birth took place. Feeding formula on the first day at home was only significantly associated with the hospital (i.e., birth at the city hospital was a protective factor (OR=0.33; 95% CI: 0.13-0.86), even after controlling for vaginal delivery.

#### Conclusions

On the first day at home after hospital discharge, teenaged-primiparous mothers were more likely to exclusive breastfeeding as well as those infants born in the municipal public hospital. Further studies are needed from a multidisciplinary approach.

### Resumo

#### Objetivo

Avaliar os fatores associados à prática de amamentação no primeiro dia em casa após a alta hospitalar.

#### Métodos

Foram realizadas 209 entrevistas com mães de lactentes, com idade até quatro meses de vida, residentes em Itapira, SP, no momento em que levaram seus filhos para serem vacinados durante a Campanha Nacional de Vacinação, em 1999. Utilizou-

### Descritores

Aleitamento materno. Recém-nascido.  
Assistência perinatal.

### Correspondence to:

Celene Aparecida Ferrari Audi  
Rua Francisco Galli, 245  
13976-152 Itapira, SP, Brasil  
E-mail: celeneaparecida@bol.com.br

This study was carried out at Instituto de Saúde da Secretaria de Saúde do Estado de São Paulo and Faculdade de Saúde Pública da Universidade de São Paulo.

Received on 25/3/2004. Reviewed on 26/8/2004. Approved on 9/11/2004.

*se de análise exploratória dos dados, teste do qui-quadrado. Verificou-se associação entre as variáveis dependentes e independentes por análise de regressão logística.*

#### **Resultados**

*Observou-se, que a idade média das mães foi de 25,5 anos e 18,2% eram mães adolescentes. Nasceram por parto vaginal 53% dos lactentes, sendo a maioria (78,5%) em hospital municipal. Constatou-se que 78,1% dos lactentes no primeiro dia em casa encontravam-se em aleitamento materno exclusivo e 11,6% já haviam consumido outros alimentos. O único fator associado à maior chance de estar amamentando exclusivamente no primeiro dia em casa foi o fato de a mãe ser adolescente e primípara (OR=9,40; IC 95% (OR)=1,24-71,27), ajustado para o tipo de parto e hospital de nascimento. Em relação ao uso de leite artificial no primeiro dia em casa, a mãe atendida no hospital municipal teve menor chance de usar leite artificial (OR=0,33; IC 95% (OR)=0,13-0,86), mesmo após o controle para o parto vaginal.*

#### **Conclusões**

*No primeiro dia em casa após alta hospitalar, adolescentes primíparas tiveram maior chance de amamentar exclusivamente, assim como aquelas crianças que nasceram no hospital municipal. Sugere-se a realização de outros estudos, que contemplem uma abordagem multidisciplinar.*

## INTRODUCTION

Prenatal and delivery care routines frequently have an exclusive “biomedical and aseptic” focus. Originally, many of these routines were designed to control perinatal infection and facilitate the job of health workers or the use of medical equipment and not to promote mothers’ self-confidence in breastfeeding. This “biomedical and aseptic” focus is worrisome as it can have a negative influence on breastfeeding performance.<sup>25</sup>

A longitudinal study conducted in Santos, Brazil, aimed at evaluating the ten steps of “Baby Friendly Hospital Initiative” (BFHI). It was found that exclusive breastfeeding lasted almost two months longer in patients from a hospital with an intensive breastfeeding promotion program when compared with a control hospital with limited breastfeeding promotion.<sup>10</sup> The program included rooming-in, early breastfeeding initiation and breastfeeding counseling, as well as support from health care personnel.

The Santos hospital with intensive breastfeeding promotion based its efforts on the BFHI, officially launched in 1990 by the United Nations Children’s Fund (Unicef) and the World Health Organization (WHO) to promote, protect, and support concrete actions that facilitate breastfeeding. This way, BFHI fully supports a key operational goal from the Innocenti Declaration,<sup>25</sup> which was that by 1995 all governments should ensure that every maternity ward followed all of the 10 steps recommended by BFHI.<sup>19</sup>

The Brazilian Ministry of Health,<sup>13</sup> supported by the Pan American Health Organization (PAHO) and Unicef, has begun retraining maternity services so

that they can successfully implement the BFHI 10 steps. Based on individual studies<sup>10,16,17</sup> and a recent WHO review,<sup>25</sup> these policy changes are expected to improve breastfeeding practices in Brazil, both within and outside the hospital setting. However, few studies, if any, have evaluated the impact of BFHI on infant feeding practices the first day after the mother is discharged from the hospital and returns home.

According to Murahovschi,<sup>14</sup> the first two weeks of life are the most vulnerable breastfeeding period. This is the period when the mother’s previous decision to breastfeed will be put to the test, with the possibility of reversal of attitude on the part of the mother who was not planning to breastfeed. A pleasurable and efficient management of initial breastfeeding is the best way to establish the practice of breastfeeding; otherwise, even mothers who were originally disposed towards breastfeeding may face failure.

This is a very crucial time that may determine the success of extended breastfeeding, and most certainly, of exclusive breastfeeding. Research on the prevalence of breastfeeding in Brazilian state capitals and in the Federal District showed that the average duration of exclusive breastfeeding is still short (23.4 days) and that among the urban population the pattern of early introduction of other fluids and food while breastfeeding is maintained.<sup>13</sup>

Venâncio et al<sup>22</sup> in a study in the state of São Paulo have found a huge variation of EBF prevalence among municipalities studying children under the age of four months. That prevalence ranged from 0% to 54% and, even within the same region in the state, the prevalence was not homogeneous.

Therefore, the objectives of this study were to examine: a) infant feeding behaviors and b) institutional, sociodemographic and biomedical risk factors associated with lack of exclusive breastfeeding and formula feeding on the first day at home after delivery of the baby.

## METHODS

Itapira is a city in the interior of the state of São Paulo that had 63,377 inhabitants in 2002.<sup>5</sup> Its economy relies heavily on sugar cane cultivation, an industrial district and the service sector.

Data used in this research are derived from another study.\* During the 1999 National Immunization Campaign, participant women were asked to respond to an infant feeding survey module that included retrospective questions on infant feeding practices the first day at home after hospital discharge.<sup>22</sup>

The analytical sample presented in this study was selected in two stages. In the first stage, only data on those infants born in Itapira and under one year of age, brought by their mothers to be immunized, were further considered (n=679 maternal-infant dyads, representing 81.6% of those interviewed). To minimize memory recall of problems related to feeding practices on the first day at home, a subsample of 209 children aged four months or younger was selected.

Those children selected were born in two hospitals in Itapira: the public hospital, which is certified as BFHI and have developed intensive work for two years, training every team using the orientation courses by WHO/Unicef/MH, changing their routines and implementing the ten steps to successful breastfeeding; and, the private hospital, without policies on breastfeeding.<sup>15</sup>

EBF is considered if the infant receives solely breast milk directly from the breast or as expressed human milk. This definition rules out the inclusion of any other fluids or solids with the exception of vitamin and/or mineral supplements or medicines.

Full breastfeeding means a diet based on breast milk and token amounts of water-based fluids such as teas and water.<sup>24</sup>

Formula feeding (FF) is defined as an infant diet based on formula, with or without other foods, including breast milk.

The independent variables examined were: type of hospital delivery (vaginal vs. cesarean-section), maternal age (teenager vs. adult), parity (primiparous vs. multiparous), birth weight (low vs. normal birth weight), area of residence and length of hospital stay (up to 24 h and greater than 24h), being this cutoff point convenient considering that the discharge in private hospital were precocious.

The dependent variables were exclusive breastfeeding and formula feeding.

The Chi-square test was used to examine the association between the independent variables and the infant feeding classification on the first day at home after hospital discharge.

The four categories examined were: primiparous teenager, multiparous teenager, primiparous adult and multiparous adult. Based on preliminary patterns of association with EBF these four categories were combined in two (teenaged-primiparous vs. the rest). Associations were expressed as crude and adjusted odds ratios and their respective 95% confidence intervals.

## RESULTS

The average maternal age was 25.5 years (standard deviation =6.3 years) and 18.2% of respondents were teenagers. Over half of the infants experienced a vaginal delivery and 5.7% had low birth weight. As much as 42.6% of the women were employed outside of their homes when they became pregnant with the study child. Almost a quarter (24%) had the benefit of maternity leave, while 20.8% had already returned to work on the day of the interview.

The majority of the infants (78.5%) were born at the public hospital. There were no hospital-related statistically significant differences for: proportion of teenagers (p=0.108), proportion of primiparae (p=0.793), prevalence of low birth weight (p=0.501), area of residence (p=0.385) and length of hospital stay (p=0.154). However, the likelihood of a vaginal delivery was significantly higher (p<0.001) at the public hospital (Table 1).

On the first day at home after hospital discharge, 91.4% of newborns were being breastfed. Almost three-quarters of all newborns (73.2%) were being exclusively breastfed, 7.2% were fully breastfed, 10.5% were FF, 1.9% were not breastfed, 1.0% were not offered any fluids during their first day at home and data were missing for 6.2%.

\*The mentioned study is: Evaluation of infant feeding practices during the first year of life through national immunization campaign days. Unpublished data.

**Table 1** - Characteristics of women with 4-month-old or younger infants, Itapira, São Paulo, Brazil, in 1999. (N=209)

| Variable                  | Category  | Public hospital<br>N (%) | Private hospital<br>N (%) | p-value* |
|---------------------------|-----------|--------------------------|---------------------------|----------|
| Delivery type             | Vaginal   | 100 (61.9)               | 11 (24.4)                 | <0.001   |
|                           | Cesarean  | 64 (39.1)                | 34 (75.6)                 |          |
| Teenaged-mother           | Yes       | 34 (20.7)                | 4 (8.9)                   | 0.108    |
|                           | No        | 130 (79.3)               | 41 (91.1)                 |          |
| Primiparous               | Yes       | 67 (40.9)                | 20 (44.4)                 | 0.793    |
|                           | No        | 97 (59.1)                | 25 (55.6)                 |          |
| Low birth weight          | Yes       | 10 (6.1)                 | 2 (4.4)                   | 0.501    |
|                           | No        | 154 (93.9)               | 43 (95.6)                 |          |
| Length of hospital stay** | up to 24h | 41 (27.5)                | 17 (40.5)                 | 0.154    |
|                           | >24h      | 108 (72.5)               | 25 (59.5)                 |          |
| Area of residence         | Rural     | 12 (7.3)                 | 2 (4.4)                   | 0.385    |
|                           | Urban     | 152 (92.7)               | 43 (95.6)                 |          |
| Total                     |           | 164 (100.0)              | 45 (100.0)                |          |

\*p-value: probability value corresponding to chi-square test

\*\*Missing data due to women unable to provide this information

In relation to the rest of the sample the majority of the primiparous teenagers were more likely to have: breastfed exclusively on their first day at home (96.6% vs. 74.9%,  $p=0.002$ ), delivered at the city hospital (89.7% vs. 76.7% for the rest of women,  $p=0.114$ ), had a vaginal delivery (72.4% vs. 50.0%  $p=0.025$ ), to have been literate (100% vs. 92.8%  $p=0.135$ ) and to not been working outside of their homes (3.4% vs. 23.0%,  $p=0.012$ ).

Table 2 shows the factors associated with EBF on the first day at home in bivariate analyses. The variables associated with EBF were being a teenaged-primiparous mother ( $OR_{EBF}=9.41$ ; 95% CI: 1.30-191.39) when compared with the rest of the women, and vaginal delivery ( $OR_{EBF}=2.17$ ; 95% CI: 1.02-4.61) when compared with cesarean delivery. Being born at the public hospital was the only factor associated with FF ( $OR=0.34$ ; 95% CI: 0.12-0.85) (Table 3).

Multivariate logistic regression on Table 4 confirmed an independent association between teenaged-primiparous mother and more likelihood of EBF on

day one at home ( $OR=9.40$ ; 95% CI: 1.24-71.27), after controlling for type of delivery and hospital where the birth took place. Likewise, being born at public hospital was independently associated with less likelihood of FF on the first day at home ( $OR=0.33$ ; 95% CI: 0.13-0.86), after controlling for the effect of hospital of birth, delivery type and teenaged-primiparous mothers.

## DISCUSSION

This study shows the value of immunization campaign-based retrospective research to better understand the determinants of EBF and other infant feeding practices.

In the sample studied, the use of water and tea on the first day at home (3% and 10%, respectively) was not as common as previously thought. It is important to continue discouraging it during the first six months of life, as this practice is not necessary even in warm tropical climates and may increase the risk of infant morbidity.<sup>1,18</sup>

**Table 2** - Factors associated with exclusive breastfeeding on the first day at home after discharge from the maternity ward: Bivariate analyses. Itapira, São Paulo, Brazil, 1999. (N=196)

| Variable                     | Category  | EBF<br>N (% yes) | Day 1<br>N (% no) | Total<br>(%) | Crude OR | 95% CI        | p-value* |
|------------------------------|-----------|------------------|-------------------|--------------|----------|---------------|----------|
| Hospital                     | CH        | 124 (81.0)       | 29 (19.0)         | 100          | 2.06     | (0.91-4.68)   | 0.089    |
|                              | SC        | 29 (67.4)        | 14 (32.6)         | 100          | 1.00     |               |          |
| Delivery type                | Vaginal   | 86 (84.3)        | 16 (15.7)         | 100          | 2,17     | (1.02-4.16)   | 0.042    |
|                              | Cesarean  | 67 (71.3)        | 27 (28.7)         | 100          | 1,00     |               |          |
| Teenaged- primiparous mother | Yes       | 28 (96.6)        | 1 (3.4)           | 100          | 9.41     | (1.30-191.39) | 0.018    |
|                              | No        | 125 (74.9)       | 42 (25.1)         | 100          | 1.00     |               |          |
| Low birth weight             | Yes       | 9 (81.8)         | 2 (18.2)          | 100          | 1.28     | (0.24-8.96)   | 0.551*** |
|                              | No        | 144 (77.8)       | 41 (22.2)         | 100          | 1.00     |               |          |
| Length of hospital stay**    | Up to 24h | 47 (82.5)        | 10 (17.5)         | 100          | 1.44     | (0.62-3.43)   | 0.473    |
|                              | >24h      | 101 (76.9)       | 31 (23.1)         | 100          | 1.00     |               |          |
| Area of residence            | Rural     | 9 (64.3)         | 5 (35.7)          | 100          | 0.47     | (0.13-1.74)   | 0.167*** |
|                              | Urban     | 144 (79.1)       | 38 (20.9)         | 100          | 1.00     |               |          |
| Total                        |           | 153 (78.1)       | 43 (21.9)         | 100          |          |               |          |

EBF: Exclusive breastfeeding

\*p: probability value corresponding to chi-square test

\*\*Missing data due to women unable to provide this information

\*\*\*Fischer's exact test

**Table 3** - Factors associated with artificial (formula) feeding on the first day at home after discharge from the maternity ward: Bivariate analyses. Itapira, São Paulo, Brazil, 1999. (N=190)

| Variable                     | Category   | FF<br>N (% yes) | Day 1<br>N (% no) | Total<br>(%) | OR   | 95% CI      | p-value* |
|------------------------------|------------|-----------------|-------------------|--------------|------|-------------|----------|
| Hospital                     | CH         | 13 (8.7)        | 136 (91.3)        | 100          | 0.34 | (0.12-0.85) | 0.038    |
|                              | SC         | 9 (22.0)        | 32 (78.0)         | 100          | 1.00 |             |          |
| Delivery type                | Vaginal    | 8 (8.1)         | 91 (91.9)         | 100          | 0.48 | (0.17-1.31) | 0.178    |
|                              | Cesarean   | 14 (15.4)       | 77 (84.6)         | 100          | 1.00 |             |          |
| Teenaged- primiparous mother | Yes        | ..**            | 29 (100)          | 100          | 0.00 | (0.00-1.15) | 0.020*** |
|                              | No         | 22 (13.7)       | 139 (86.3)        | 100          | 1.00 |             |          |
| Low birth weight             | Yes        | 2 (18.2)        | 9 (81.8)          | 100          | 1.77 | (0.00-9.76) | 0.371*** |
|                              | No         | 20 (11.2)       | 159 (88.8)        | 100          | 1.00 |             |          |
| Length of hospital stay****  | Up to 24 h | 6 (10.7)        | 50 (89.3)         | 100          | 0.90 | (0.29-2.68) | 0.843*** |
|                              | >24 h      | 15 (11.7)       | 113 (88.3)        | 100          | 1.00 |             |          |
| Area of residence            | Rural      | 2 (16.7)        | 10 (83.3)         | 100          | 1.56 | (0.06-859)  | 0.416*** |
|                              | Urban      | 20 (11.2)       | 158 (88.8)        | 100          | 1.00 |             |          |
| Total                        |            | 22 (11.6)       | 168 (88.4)        | 100          |      |             |          |

FF: formula feeding

\*p: probability value corresponding to Chi-square test

\*\*No cases reported

\*\*\*Fischer's exact test

\*\*\*\*Missing data due to women unable to provide this information

The study results strongly suggest that, contrary to a priori expectations,<sup>4,9,23</sup> teenaged-primiparous women were more likely to EBF their newborns the first day at home. This finding might be explained, at least in part, by county programs administered through public hospitals (where the vast majority of these women gave birth) that target teenagers with additional support for pregnancy and postnatal care, including breastfeeding. In addition, these women were less likely to be employed outside their homes or undergo a cesarean section, thus these potential risk factors for not EBF soon after delivery were less prevalent in this subgroup of women.

It is hypothesized that it is possible that these women had to rely less on formal employment, due to more community and family support. The current study does not allow separating the independent influence of the hospital where the birth took place from cesarean section on EBF on day one at home, as both were highly correlated. Therefore, both of these hypotheses will be tested through future studies.

Hospital policies conducive for EBF (i.e., giving birth at the BFHI-certified public hospital) confirmed the authors' a priori expectation that they would be associated with less likelihood of FF at the first day at home. This study further confirmed that public hospitals have policies more conducive to EBF than non-public ones in the state of São Paulo.<sup>6,20</sup> It is impor-

tant that this situation be changed in the near future, as BFHI leads to improve infant feeding practices during the first year of life.<sup>12</sup> Pérez-Escamilla<sup>18</sup> found in a longitudinal study carried out in Brazil, Honduras and Mexico that women who delivered at BFHI hospitals had significantly longer duration of EBF and/or any kind of breastfeeding. This group also showed with these data the high cost-effectiveness of investing in BFHI-like policies and programs.<sup>3</sup>

Research has revealed the impact of hospital practices favorable to breastfeeding on the beginning and effective establishment of breastfeeding. Carvalhaes<sup>2</sup> recommended an evaluation of the frequency of behaviors unfavorable to breastfeeding through the routine use of a protocol promoted by Unicef and based on the observation of the mother-infant dyad during feedings. Unfavorable scores are an alarm signal for immediate weaning and may be interpreted as a reason for prolonged maternity ward stay or indicate supporting home interventions. Venâncio suggests that this protocol seems adequate for services in "transition status" towards the Ten steps to a successful Maternal Breastfeeding.<sup>21</sup>

Some have suggested the need to add an 11<sup>th</sup> step to BFHI, seeking to provide additional psycho-emotional support during the three labor and delivery stages,<sup>7</sup> as well as for prematurely-born babies or those with other risk factors that may hinder their develop-

**Table 4** - Factors associated with infant feeding on the first day at home after discharge from the maternity ward: multivariate logistic regression, Itapira, São Paulo, Brazil, 1999.

| Dependent variable      | Independent variable | Category | Crude OR | Adjust. OR | 95% CI       | p-value |
|-------------------------|----------------------|----------|----------|------------|--------------|---------|
| Exclusive breastfeeding | Teenaged-primiparous | Yes      | 9.41     | 9.40       | (1.24-71.27) | 0.030   |
|                         |                      | No       | 1.00     | 1.00       |              |         |
| Formula feeding         | Hospital of birth    | CH       | 0.34     | 0.33       | (0.13-0.86)  | 0.023   |
|                         |                      | SC       | 1.00     | 1.00       |              |         |
|                         |                      |          |          |            |              |         |

\*Other categories combined: Teenaged-multiparous, adult-primiparous and adult-multiparous mothers

ment.<sup>8</sup> Thus, it is essential to conduct prospective studies to further test the social and breastfeeding support hypotheses that may explain how women at high risk (teenaged-primiparous mothers) not only were at less risk for not EBF on day one at home but also were more successful at doing so.

Because early infant feeding decisions influence enormously longer term success with exclusive and any breastfeeding, it is imperative that future research studies concentrate on finding out which are the key obstacles for exclusive breastfeeding during the transition that takes place when the mother leaves the maternity ward and settles back in her home. The present study adds to the body of evidence strongly suggesting that

multidisciplinary research in this area is needed as early breastfeeding decisions depend on complex environmental-individual interactions involving the mother, her child, pre-, peri- and postnatal health services, in addition to peer pressure as well as aggressive marketing by infant formula manufacturers.<sup>11</sup>

## ACKNOWLEDGEMENTS

To the coordinators of the project Breastfeeding and Municipalities SES/IS, NUPENS/FSP/USP (*Secretaria Estadual de Saúde/Instituto de Saúde, Núcleo de Pesquisa em Nutrição em Saúde/Faculdade de Saúde Pública/Universidade de São Paulo*) for providing the data used in the analyses.

## REFERENCES

1. Brown KH, Creed-Kanashiro H, Dewey G. Optimal complementary feeding practices to prevent childhood malnutrition in developing countries. *Food Nutr Bull* 1995;16:320-39.
2. Carvalhaes MABL, Correa CRH. Identificação de dificuldades no início do aleitamento materno mediante aplicação de protocolo. *J Pediatr (Rio de J)* 2003;79(1):13-20.
3. Horton S, Sanghvi T, Phillips M, Fiedler J, Perez-Escamilla R, Lutter C et al. Breastfeeding promotions and priority setting in health. *Health Policy Plan* 1996;11:156-68.
4. Ineichen B, Pierce M, Lawrence R. Teenage mothers as breast feeders: attitudes and behaviors. *J Adolesc* 1997;20:505-9.
5. Instituto Brasileiro de Geografia e Estatística [IBGE]. Censo demográfico: dados distritais. Rio Janeiro; 2001.
6. Kramer MS, Chalmers B, Hodnett ED, Sevkovskaya Z, Dzikovich I, Shapiro S et al. Promotion of Breastfeeding Intervention Trial (PROBIT): a randomized trial in the republic of Belarus. *JAMA* 2001;285:413-20.
7. Kroeger M. Labor and delivery practices: *the eleventh step to successful breastfeeding?* In: 23<sup>rd</sup> International Congress of Midwives; 1996 Jan 10 Vancouver, British Columbia. Canada: Centre of Excellence for Women's Health; 1996. p. 1-14.
8. Levin A. Iniciativa cuidado neonatal humanizado. *Acta Paediatr* 1999;88:353-5.
9. López VGM, Pérez GJG. Factores maternos asociados a la duración de la lactancia en áreas periféricas de Guadalajara, México. *Bol Oficina Sanit Panam* 1993;115:118-26.
10. Lutter CK, Perez-Escamilla R, Segall A, Sanghvi T, Teruya K, Wickham C. The effectiveness of a hospital-based program to promote exclusive breast-feeding among low-income women in Brazil. *Am J Public Health* 1997;87:659-63.
11. Lutter CK. Breastfeeding promotion: is its effectiveness supported by scientific evidence and global changes in breastfeeding behaviors? *Adv Exp Med Biol* 2000;478:355-68.
12. Ministério da Saúde. Normas básicas para alojamento conjunto: iniciativa Hospital Amigo da Criança. Brasília (DF); 1993.
13. Ministério da Saúde. Secretaria de Políticas de Saúde. Área de Saúde da Criança. Pesquisa de prevalência do aleitamento materno nas capitais e no Distrito Federal. Brasília (DF); 2001. p. 49.
14. Murahovschi J. Amamentação: repensando as dificuldades. *J Pediatr (Rio J)* 2003;79(6):561-6.
15. Organização Mundial da Saúde. Proteção, promoção e apoio ao aleitamento materno: o papel especial dos serviços materno-infantis. Genebra; 1989.
16. Pérez-Escamilla R, Segura-Millan S, Pollitt E, Dewey KG. Determinants of lactation performance across time in an urban population from Mexico. *Soc Sci Med* 1993;37:1069-78.
17. Perez-Escamilla R, Lutter C, Correa AMS. Exclusive breastfeeding duration is associated with attitudinal, socioeconomic and Biocultural determinants in three Latin American countries. *J Nutr* 1995;125:2972-84.
18. Perez-Escamilla R, Segura-Millán S, Canahuati J, Allen H. Prelacteal feeds are negatively associated with breast-feeding outcomes in Honduras. *J Nutr* 1996;126:2765-73.

19. Sokol EJ. Em defesa da amamentação: manual para implementar o código internacional de mercadização de substitutos do leite materno. São Paulo: IBFAN Brasil; 1999. p. 284.
20. Toma TS, Monteiro CA. Avaliação da promoção do aleitamento materno nas maternidades públicas e privadas do município de São Paulo. *Rev Saúde Pública* 2001;35:409-14.
21. Venâncio SI. Dificuldades para o estabelecimento da amamentação: o papel das práticas assistenciais das maternidades [editorial]. *J Pediatr (Rio de J)* 2003;79(1):1-2.
22. Venâncio SI, Escuder LMM, Kitoko P, Rea MF, Monteiro CA. Frequência e determinantes do aleitamento materno em municípios do Estado de São Paulo. *Rev Saúde Pública* 2002;36:313-8.
23. Wambach KA, Cole S. Breastfeeding and adolescents. *J Obstet Gynecol Neonatal Nurs* 2000;29:282-94.
24. World Health Organization [WHO]. Indicators for assessing health facility practice that affect breastfeeding. Update. Programmer for control of diarrheas diseases. Geneva; 1992. p. 1-4.
25. World Health Organization [WHO]. Evidence for the ten steps to successful breastfeeding. Geneva; 1998.