



## Short report

## Is unimpeded marketing for breast milk substitutes responsible for the decline in breastfeeding in the Philippines? An exploratory survey and focus group analysis

Howard L. Sobel<sup>a,\*</sup>, Alessandro Iellamo<sup>a</sup>, René R. Raya<sup>b</sup>, Alexander A. Padilla<sup>c</sup>, Jean-Marc Olivé<sup>a</sup>, Soe Nyunt-U<sup>a</sup><sup>a</sup> WHO, Manila, Philippines<sup>b</sup> Action for Economic Reform (AER), Manila, Philippines<sup>c</sup> PhilHealth, Department of Health, Manila, Philippines

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## ABSTRACT

Infant mortality and morbidity risk is linked to formula usage. The proportion of Filipino infant formula users rose 6% between 2003 and 2008. It is hypothesized this rise resulted from aggressive formula industry marketing.

We conducted a household survey between April and December 2006 and focus groups in April–May 2007 in The Philippines to examine the association between mothers' exposure to advertising and other information sources and formula feeding decisions. Sixteen barangays (communities) were randomly selected from three purposively selected disadvantaged rural, urban and mixed municipalities. A total of 345 households had children under 24-months age: 114, 142 and 89 households from the rural, urban and mixed municipalities, respectively. In addition 38 respondents participated in 3 focus groups of 10–15 participants each, from three selected barangays.

After adjusting for education and economic indicators logistic regression analysis showed that, children were more likely to be given formula if their mother recalled advertising messages, or a doctor, or mother or relative recommended it. Those using formula were 6.4 (1.8–23.1) times more likely to stop breastfeeding before 12 months. The focus groups described how television advertisements, doctors and medical representatives enticed them to use formula. We conclude that two factors were strongly associated with the decision to formula feed: self-reported advertising exposure, and physicians' recommendations.

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## Introduction

Globally, 10 million children died before the age of 5 years in 2003. Breastfeeding was the most effective intervention which could prevent 1.3 million deaths (Jones, Steketee, Black, Bhutta, & Morris, 2003). A WHO pooled analysis reported not breastfeeding was associated with a 5.8 times increased risk of all-cause mortality in the first two months of life and remained elevated into the second year. Non-breastfed under-six month old Brazilian infants had 14 times greater risk of dying from diarrhea and 3.6 times from pneumonia compared to those exclusively breastfed (PAHO, 2002). Even U.S. breastfed children had 21–24% fewer deaths compared to those not breastfed (Chen & Rogan, 2004). Many studies also show

an increased risk of illness associated with formula feeding (PAHO, 2002). *Enterobacter sakazakii*, a bacteria known to be harmful to pre-term infants, sometimes contaminates infant formula during manufacturing (FAO, WHO, 2004).

The Philippines, with 82,000 annual deaths, is one of 42 countries accounting for 90% of under-five year old deaths globally (Black, Morris, & Bryce, 2003). Only 16% of 4–5 month old Filipinos were breastfed exclusively while 30% formula fed, up 6% in 5 years (NSO, 2003, 2008).

Research shows that factors influencing the decision to breastfeed include: infant weight (Bautista, 1997), breast milk as the first feed (Sachdev & Mehrptra, 1995), frequency of crying (Karacam, 2008), mother's educational level (Rasheed, Frongillo, Devine, Alam, & Rasmussen, 2009), income level (Arango, 1984) and employment (Rasheed et al., 2009).

Mothers tend to breastfeed when given accurate information (Dulon, Kersting, & Bender, 2003; Horton et al., 1996; Susin et al., 1999), through media campaigns (McDivitt, Zimicki, Homik, &

\* Corresponding author. Tel.: +855 632 338 7479; fax: +855 632 338 8605.

E-mail addresses: [sobelh@wpro.who.int](mailto:sobelh@wpro.who.int) (H.L. Sobel), [alessandro.iellamo@gmail.com](mailto:alessandro.iellamo@gmail.com) (A. Iellamo), [rraya@gmail.com](mailto:rraya@gmail.com) (R.R. Raya), [alpaddy@yahoo.com](mailto:alpaddy@yahoo.com) (A.A. Padilla), [jmjolive@gmail.com](mailto:jmjolive@gmail.com) (J.-M. Olivé), [nyuntus@wpro.who.int](mailto:nyuntus@wpro.who.int) (S. Nyunt-U).

Abulaban, 1993), and social (Bryant, 1982) and medical professional support (Abada, Trovato, & Lalu, 2001). However, in environments where women are exposed to social, economic and cultural influences inimical to breastfeeding, they tend to prematurely stop breastfeeding (WHO, 1989). Breastfeeding “educational materials” produced by infant formula manufacturers (Shealy, Li, Benton-Davis, & Grummer-Strawn, 2005) and formula sample distribution were found to negatively impact breastfeeding (Howard et al., 2000). Television advertisements, doctors and relatives also influence the decision to use formula (Fidler & Costello, 1995; Suleiman, 2001). However, a Philippine study reported a minor impact of formula sample distribution and advertising on feeding decisions (Stewart et al., 1991).

The Philippines provides an ideal setting to study the effect of marketing on infant feeding practice with its aggressive industry practices (Raya, 2008) and rising formula usage. According to Euromonitor (2008), “Filipino Milk Formula Market Grows Unimpeded”. More than US\$ 100 million was spent on advertising breast milk substitutes in half of 2006 (Conde, 2007).

The present study examines factors influencing decisions to formula feed infants, including mothers’ recall of advertising messages, health professionals’ recommendations, personal sales representation and other information sources in purposively selected disadvantaged communities in the Philippines.

## Methods

We conducted a household survey in a sample of disadvantaged rural and urban barangays (communities) and then conducted focus groups to examine factors influencing decisions to formula feed infants.

### Survey tool and implementation

Questions related to feeding and marketing were added to an E-Net (a network of educational NGOs) educational questionnaire conducted in Filipino. E-Net developed and pre-tested the 30-min educational survey to determine the basic household profile, housing and amenities, employment status, education profile, reasons for not attending school and school expenses in seven municipalities and one city where they work. The marketing questions were developed in June 2005, pre-tested and finalized in April 2006. Community workers were trained using a standard enumerators’ manual including field-testing. E-Net supervised the interview. The survey was conducted April to December 2006.

Of the seven E-net municipalities, three were selected to represent varying population densities; Toboso (rural), Murcia (urbanizing wealthier), and Sariaya (rural and urban mix). Barangay selection was the same used for the overall E-net survey. These three municipalities had 75 barangays which were categorized into proximity strata (within, near or far from the town center). Of these, 16 were randomly selected within proximity strata. All households with children <24 months in the selected barangays were surveyed with the marketing questionnaire. Only mothers were interviewed.

Chi-square and *t*-tests were used to measure differences in categorical and continuous variables. Logistic regression was used to calculate adjusted odds ratios for formula use relative to breastfeeding. STATA 10 (STATA Corporation, TX, USA) was used for data analysis.

Most variables were defined using a standardized tool (MIMAP, 2004). Houses with light house roofing materials, including bamboo, nipa and salvaged/makeshift materials, are found among poor families (NSO 2008). Light roofing materials were used as a proxy of low socio-economic status (SES). Formula use included any formula regardless of addition of other foods, liquids or breastfeeding.

The predictor variables and corresponding questions used to define them are as follows: 1) Recalled Advertisement: “*In the past six months, have you ever seen or heard any advertisement for Formula Milk?*” 2) Advertising message: “*Can you recall the messages or information given by the advertisement?*” 3) Primary source of advertising message promotion was the first answer given to the question: “*Where did you see or hear the advertisement for Formula Milk?*” They were then asked, “*Where else did you see ...?*” until the respondent had no more answers. 4) Source recommending use of infant formula: “*Who recommended formula to you?*” For each question respondents gave unaided responses which were classified according to predetermined categories.

### Focus group discussion

The research team of AER, an E-Net member, developed Focus Group Discussion (FGDs) guides based on the survey results to probe for factors that may influence infant feeding choices. Themes explored included: What led you to feed your child as he/she is currently fed? What sources of information have you come across on infant feeding? Can you remember any specific messages? What is special about the messages? In what ways do they appeal to you? What are the reasons you use a given brand of formula milk? How do milk companies promote their products? How do the milk companies influence you? Facilitators were trained to encourage free-flowing dialog by following up on participants’ answers.

The FGDs were organized in Toboso (rural) and Sariaya (rural and urban mix) where the survey took place, and Makati City (urban), April–May 2007. Health workers in these localities selected a mixture of 10–15 mothers with children aged under 6 months, 6–12 months and 1–2 years.

Each FGD had handwritten, tape recorded and transcribed notes. Participants were informed the sessions would be tape recorded. The team leader reviewed the transcriptions multiple times and tape recordings at least once. Specific attention was paid to determine that the facilitator did not interrupt the flow of the discussion, nor asked leading questions. Transcripts were coded as follows: all answers were grouped, categorized and labeled according to the aforementioned themes. These were then reviewed to identify common patterns in the responses of the participants. Only those themes reflected in comments made by more than one participant were included in the results.

### Ethical approval

All participants were informed about the study, that confidentiality would be maintained and that they could withdraw at any time without explanation. They were given an opportunity to clarify questions. All participants provided informed consent. Department of Health Human Research Ethics Committee granted ethical clearance on October 28, 2005.

## Results

Of the total 5219 households, 6.7% (345) had at least one child under 24 months age. Of these, 33.0% (114) were from Toboso, 42.2% (142) from Murcia, and 25.8% (89) from Sariaya. All households with children under 24 months age agreed to participate in the survey. Questions in the survey had no missing data except for ceiling materials which had 9.9% (34) missing observations.

Of the 345 children under 24 months of age, 41.1% (142) were using formula (Table 1). Formula usage was associated with municipality of residence ( $p < 0.05$ ). Around two-thirds (67.2%) of mothers of formula users had graduated high school versus one-third (32.5%) of those not using formula ( $p < 0.05$ ). About one-fifth (21.8%) of formula users lived in a house made with light

roofing materials (i.e., low SES) versus 38.2% of non-formula users ( $p < 0.05$ ). Formula users were on average 1.5 months older than non-users ( $p > 0.05$ ). In multi-logistic regression, formula usage remained associated with education (OR 2.0 95% CI 1.5–2.6) and municipality (OR 1.8 95% CI 1.3–2.5).

Of the 345 respondents with children under 24 months old, 75.1% (259) recalled having seen an advertisement for infant formula: 68.4% (236) on television, 16.5% (57) on radio, and less than 3% (11) in a health center, hospital, magazine, newspaper, billboard, poster, grocery, supermarket or shop.

Of the 345 respondents, 59.1% (204) recalled an advertisement message content. Of these 204, 47.1% (96) recalled it contained ingredients which “make babies healthy”, 45.3% (92) “make children smart...”, and 8.3% (17) “protects against infections” and 17.2% (35) recalled that “Breast milk is best for babies.”

Mothers were significantly more likely to give formula if they recalled an advertising message, particularly on television, or reported that their doctors, mothers or relatives had recommended use (Table 2). Recommendations from a nurse, midwife, friend or co-worker was not associated with formula use. Recalling that breast milk is best was neither associated with formula use nor breastfeeding ( $p > 0.05$ ). Those receiving a doctor's prescription for formula were 3.25 (1.78–5.91) times more likely to use formula.

After excluding 22 who never started breastfeeding, infants given formula were 6.4 (1.8–23.1;  $p = 0.004$ ) times more likely to have stopped breastfeeding before 12 months of age.

A total of 38 mothers participated in the three FGDs: 15 from Toboso, 13 from Sariaya and 10 from Makati City. None refused participation. Twenty breastfed their babies, 11 exclusively formula fed and 7 mixed breast and formula feeding. Women who used formula, reported being influenced by television advertisements, doctors, and milk company representatives.

When asked “How do these milk companies promote their products?” Representative answers included: “Television”, “There are doctors who advise us” and “there are others who gave out some books and bottles.”

The participants had high recall of the advertising messages which included: “Batang May Laban (child with strong resistance),” *hindi sakitin (child without sickness)*,” “*nakakatibay ng buto (child with bones)*,” “*may nucleotides (with nucleotides)*,” although no one could say what nucleotides were, and “*for the gifted child.*” Mothers in the Makati FGD sang the messages.

**Table 1**  
Percent of infant formula use by demographics of survey respondents.

Demographic variables	Uses infant formula	Does not use infant formula
Total	142	203
Municipality*		
Murcia	30.3%	48.7%
Toboso	32.4%	33.5%
Sariaya	37.3%	17.7%
Age of Child (months)	10.3 (5.9)	8.7 (6.0)
Gender of Child (% male)	59.9%	53.2%
Education of Mother*		
Elementary School, entered but did not Graduate	12.7%	23.7%
Elementary School Graduate	24.7%	43.8%
High School Graduate	45.8%	27.6%
College Graduate	16.9%	4.9%
Occupation of mother		
Housewife	68.1%	74.3%
Vendor	14.9%	9.9%
Office	4.3%	1.0%
Other (rice field workers, elected officials)	12.8%	14.9%
Light House Roofing Materials, % (n/N)*,b	21.8%	38.2%

\*  $< 0.001$ .

<sup>b</sup> Light house roofing materials is a proxy for socio-economic status.

**Table 2**

Comparison of odds of using formula relative to messages and sources of information on infant formula and breastfeeding.

	Use formula		Unadjusted (95% Confidence intervals; $p$ -value)	Adjusted (95% Confidence intervals; $p$ -value)
	Yes	No		
<b>Recalled Advertising Message</b>				
Any	66.9%	53.7%	1.7 (1.1–2.8)***	2.0 (1.2–3.4)**
Makes child smart	44.7%	36.5%	1.4 (0.8–2.5)	2.0 (1.0–3.9)***
Make child healthy	48.4%	35.6%	1.7 (1.0–3.0)	2.2 (1.2–4.1)***
Recalled Breast milk is best	11.3%	9.4%	1.2 (0.6–2.6)	1.6 (0.7–3.5)
<b>Primary source of advertising message promotion</b>				
TV	80.3%	68.1%	1.9 (1.1–3.4)***	2.1 (1.2–3.8)***
Radio	32.5%	42.7%	0.7 (0.3–1.5)	0.7 (0.3–1.7)
<b>Source recommending use of infant formula<sup>a</sup></b>				
Pediatrician or Obstetrician	23.2%	5.4%	5.3 (2.5–12.0)*	3.7 (1.7–8.2)*
Nurse or Midwife	16.2%	18.2%	0.9 (0.5–1.6)	1.5 (0.8–2.9)
Mother or Relative	18.3%	7.4%	2.8 (1.4–5.9)*	2.7 (1.3–5.5)**
Friend or Co-worker	6.3%	3.9%	1.7 (0.6–5.0)	1.6 (0.5–4.8)

\* $p < 0.001$ , \*\* $p < 0.01$ ,  $> 0.001$  \*\*\* $p < 0.05$ ,  $> 0.01$ .

<sup>a</sup> Respondents could mention only one source.

Several participants noted sales representatives approached them. “They called me to ask if I had already given birth. And then they sent me reading materials.” “They gave me a form. It asked what brand of milk I will be using after I give birth. When I was on my 7th month, they called me to ask if I have already given birth. They sent me reading materials on how to feed baby.” “There were actually two who sent me those invitations... [name of company] gave me also mittens and reading materials.” “They sent me an invitation to go to [name of popular fast food chain] for the seminar.”

Many noted that doctors had recommended formula. “A doctor once gave me a prescription to buy a certain infant formula. She said that the baby is not getting anymore nutrients from me. I asked why? And she answered that my baby was already big. But now that is already prohibited.” [The participant refers to the Philippine Milk Code (Executive Order 51) and the Rooming In Act (RA 7600) which prohibit health workers from promoting or prescribing infant formula except when medically indicated.] “She [a doctor] was even the one selling it to me. I think it is because of the Medical Representatives ... I told her that I will still consult it with my husband first because life is really difficult these days. And he told me also that if I really want to, then it's okay. And so I shifted to bottle-feeding.”

## Discussion

This study found 59.1% of mothers of young children recalled an infant formula advertisement message and one-sixth reported a doctor recommended using formula. Those who recalled a message were twice and those who reported a doctor recommended using formula were about 4 times as likely to feed their children infant formula.

E-Net partners work in poverty stricken areas. Fewer than half the women in our study completed high school. Nationally, only in the lower two quintiles had less than half of women graduated high school (NSO, 2003) supporting the assertion that our study population is relatively impoverished. Despite poverty and the extra strain on household income associated with formula use, 41.1% of the infants and young children were fed formula. Formula use increased with increasing educational level and decreasing poverty.

When women are provided with accurate information and professional and social support, they tend to breastfeed (Dulon et al., 2003; Susin et al., 1999). In contrast, early formula use and premature breastfeeding termination is likely when mothers are

exposed to pervasive and persuasive messages (Shealy et al., 2005; UNICEF, 2007). Other studies, similar to ours, reported television advertisements, doctors and relatives influence the decision to use formula (Fidler & Costello, 1995; Suleiman, 2001). We cannot explain the previous Philippine study that found sample distribution and formula advertising had a minor impact on feeding decisions (Stewart et al., 1991).

This study found that the risk of breastfeeding termination within one year of age was increased 6.4 times by infant formula use. UNICEF/WHO recommends breastfeeding for at least 2 years. Addition of formula leads to decreased stimulation from suckling and its reflex for breast milk production (WHO, 2003). Virtually all women are physiologically able to breastfeed (WHO, 1989).

Alternatives to maternal breastfeeding include feeding with expressed maternal breast milk, surrogate breastfeeding, expressed breast milk from a healthy donor or a human milk bank and lastly infant formula feeding by cup (WHO, 2003). Situations where these alternatives are warranted include: active Herpes simplex virus type 1 lesions on the mother's breasts; maternal medications such as sedating psychotherapeutic drugs, anti-epileptic drugs, opioids, radioactive iodine, and cytotoxic chemotherapy; and a few rare inborn errors of metabolism of the newborn. Even with mothers with HIV, exclusive breastfeeding was found to have the same disease free survival as exclusive formula feeding. Mixed feeding increased the risk of HIV infection (WHO, 2009). Advertisements and physician messages reported by the respondents never mentioned these medical indications as the basis to decide to formula feed.

#### Limitations

The populations from the 3 purposively selected municipalities are not representative of the whole nation. Participants were less educated, more rural and presumably of lower SES than the nation as a whole. The authors believe these limitations do not diminish the results, but suggest the marketing messages are reaching the most vulnerable sector of the Philippine population, which also has the highest infant mortality rates.

Possible recall bias is a concern. Participants were asked to recall messages up to 6 months before. Even so, 59.1% could state advertising message content without prompting which shows the salience of the messages. Similarly, knowing the FGD topic, participants may be biased to report influences of manufacturers. However, interviewers were trained to ask non-leading questions. The transcripts and recordings confirmed the spontaneity of the respondents' quotes. The recollection of how doctors convinced participants to use formula, the industry representatives' persistence and the participants singing the advertisement were striking.

In 1978, the late Senator Edward Kennedy held a US Senate Hearing on the unethical marketing of infant formula. Fourteen World Health Assembly resolutions including the International Code of Marketing of Breast Milk Substitutes (WHO, 1981) were adopted to curtail unethical marketing promotions (IBFAN, 2005). However, few countries have fully implemented Art.5.1 of the Code: "There should be no advertising or other forms of promotion to the general public of products within the scope of this Code." This study strongly supports the need for enforced, total bans of marketing advertisements and other promotions of breast milk substitutes worldwide. Finally, in the context of the Hippocratic Oath, this study strongly recommends all health professionals to identify and weed out promotions of medically unnecessary and unsafe feeding practices within its membership.

#### References

- Abada, T. S. J., Trovato, F., & Lalu, N. (2001). Determinants of breastfeeding in the Philippines: a survival analysis. *Social Science & Medicine*, 52(1), 71–81.
- Arango, J. O. (1984). Promoting breast feeding: a national perspective. *Public Health Reports*, 99(6), 559–565.
- Bautista, L. E. (1997). Factors associated with initiation of breast-feeding in the Dominican Republic. *Pan American Journal of Public Health*, 2(2), 107–114.
- Black, R. E., Morris, S. S., & Bryce, J. (2003). Where and why are 10 million children dying every year? *The Lancet*, 361, 2226–2234.
- Bryant, C. A. (1982). The impact of kin, friend and neighbor networks on infant feeding practices. *Social Science & Medicine*, 16, 1757–1765.
- Chen, A., & Rogan, W. J. (2004). Breastfeeding and the risk of post-neonatal death in the United States. *Pediatrics*, 113(5), e435–439.
- Conde, C. H. (2007). Breastfeeding: a Philippine battleground. *International Herald Tribune (Asia-Pacific)*. <http://www.iht.com/articles/2007/07/17/news/philis.php>.
- Dulon, M., Kersting, M., & Bender, R. (2003). Breastfeeding promotion in non-UNICEF certified hospitals and long-term breastfeeding success in Germany. *Acta Paediatrica*, 92(6), 653–658.
- Euromonitor. (2008). *Global packaged food: Market opportunities for baby food to 2013*. London: Euromonitor International.
- Fidler, K., & Costello, A. (1995). The role of doctors in influencing infant feeding practices in South India. *Tropical Doctor*, 25, 178–180.
- Food and Agriculture Organization of the United Nations, World Health Organization. (2004). *Enterobacter sakazakii and other microorganisms in powdered infant formula*. <http://www.who.int/foodsafety/publications/micro/es.pdf>.
- Horton, S., Sanghvi, T., Phillips, M., Fielder, J., Perez-Escamilla, R., Lutter, C., et al. (1996). Breastfeeding promotion and priority setting in health. *Health Policy and Planning*, 11(2), 156–168.
- Howard, C., Howard, F., Lawrence, R., Andersen, E., DeBlicke, E., & Weitzman, M. (2000). Office prenatal formula advertising and its effect on breastfeeding patterns. *Obstetrics and Gynecology*, 95(2), 296–303.
- IBFAN. (2005). *International Code Documentation Centre, Annotated compilation of the International Code of marketing of breast milk substitutes and relevant world health assembly resolutions, Penang, Malaysia*.
- Jones, G., Steketee, R. W., Black, R. E., Bhutta, Z. A., & Morris, S. S. (2003). How many child deaths can we prevent this year? *Lancet*, 362, 65–71.
- Karacam, Z. (2008). Factors affecting exclusive breastfeeding of healthy babies aged zero to four months: a community-based study of Turkish women. *Journal of Clinical Nursing*, 17(3), 341–349.
- McDivitt, J. A., Zimicki, S., Homik, R., & Abulaban, A. (1993). The impact of the Healthcom mass media campaign on timely initiation of breastfeeding in Jordan. *Studies in Family Planning*, 24(5), 295–309.
- MIMAP. (2004). *Community based system poverty reduction program, Philippines*.
- National Statistic Office. (2003). *National demographics and health survey, Manila, Philippines*.
- National Statistic Office. (2008). *National demographics and health survey, Manila, Philippines*.
- PAHO. (2002). *Quantifying the benefits of breastfeeding: A summary of the evidence, Washington DC, USA*.
- Rasheed, S., Frongillo, E. A., Devine, C. M., Alam, D. S., & Rasmussen, K. M. (2009). Maternal, infant, and household factors are associated with breast-feeding trajectories during infants' first 6 months of life in Matlab, Bangladesh. *The Journal of Nutrition*, 139, 1582–1587.
- Raya, R. R. (2008). The Philippine breastfeeding struggle continues. *The Lancet*, 371(9615), 794–795.
- Sachdev, H. P. S., & Mehrptra, S. (1995). Predictors of exclusive breastfeeding in early infancy: operational implications. *Indian Pediatrics*, 32, 1287–1296.
- Shealy, K. R., Li, R., Benton-Davis, S., & Grummer-Strawn, L. M. (2005). *The CDC guide to breastfeeding interventions*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.
- Stewart, J. F., Popkin, B. M., Guilkey, D. K., Akin, J. S., Adair, L., & Flieger, W. (1991). Influences on the extent of breast-feeding: a prospective study in the Philippines. *Demography*, 28(2).
- Suleiman, A. (2001). A study on marketing and its effects on infant feeding practices. *Medical Journal Malaysia*, 56(23).
- Susin, L. R. O., Giugliani, E. R. J., Kummer, S. C., Maciel, M., Simon, C., & de Silveira, L. C. (1999). Does parental breastfeeding knowledge increase breastfeeding rates? *Birth*, 26(3), 149–156.
- UNICEF. (2007). Documentary on milk code violations. *Formula for Disaster*. <http://youtube.com/watch?v=SNYDPKQOVUE> viewed in Dec 2009.
- WHO. (1981). *International code of marketing of breast-milk substitutes*. [http://www.who.int/nutrition/publications/code\\_english.pdf](http://www.who.int/nutrition/publications/code_english.pdf) Geneva.
- WHO. (1989). Infant Feeding: the physiological basis. *Bulletin of the World Health Organization*, 67(Suppl.), 41–51.
- WHO. (2003). *Global strategy for infant and young child feeding*. Geneva.
- WHO. (2009). *Acceptable medical reasons for use of breast-milk substitutes*. [http://whqlibdoc.who.int/hq/2009/WHO\\_FCH\\_CAH\\_09.01\\_eng.pdf](http://whqlibdoc.who.int/hq/2009/WHO_FCH_CAH_09.01_eng.pdf) Geneva.