

# Advertisements of follow-on formula and their perception by pregnant women and mothers in Italy

Adriano Cattaneo,<sup>1</sup> Paola Pani,<sup>1</sup> Claudia Carletti,<sup>1</sup> Margherita Guidetti,<sup>2</sup> Valentina Mutti,<sup>3</sup> Cecilia Guidetti,<sup>4</sup> Alessandra Knowles,<sup>1</sup> on behalf of the Follow-on Formula Research Group

<sup>1</sup>Health Services Research and International Health, Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Trieste, Italy

<sup>2</sup>University of Modena and Reggio Emilia, Modena, Italy

<sup>3</sup>University of Milan Bicocca, Milan, Italy

<sup>4</sup>Institute of Social Research, Milan, Italy

## Correspondence to

Dr Adriano Cattaneo, Health Services Research and International Health, Institute for Maternal and Child Health, IRCCS Burlo Garofolo, Via dell'Istria 65/1, Trieste 34137, Italy; [adriano.cattaneo@burlo.trieste.it](mailto:adriano.cattaneo@burlo.trieste.it)

Received 23 June 2014

Revised 8 October 2014

Accepted 9 October 2014

## ABSTRACT

**Objective** To assess how follow-on formula milks for infants aged 6–12 months are presented to and understood by mothers.

**Design** A quantitative and qualitative cross-sectional study including (1) an analysis of advertisements in three magazines for parents; (2) in-depth semistructured qualitative interviews to pregnant women on their perception of two advertisements for follow-on formula and (3) self-administered questionnaires for mothers to explore their exposure to and perception of formula advertisements.

**Participants** Eighty pregnant women 32–36 weeks of gestation with no previous children and 562 mothers of children <3 years old.

**Setting** Maternal and child health centres in eight cities of Italy.

**Results** Advertisements of formula (n=89) represented about 7% of all advertisements in the three magazines, the majority (58%) being for follow-on formula. Advertisements were parent-oriented, aimed at helping parents solve health problems of their babies or at eliciting good feelings, or both. The qualitative interviews to pregnant women showed inability to define the advertised products at first glance due to the ambiguity of the numeral 2 and the presumed age of the portrayed baby; this inability did not disappear after carefully viewing the advertisements and reading the text. When asked in the self-administered questionnaires whether they had ever come across advertisements of infant formula, 81% of mothers reported that they had, despite the legal inexistence of such advertisements, and 65% thought that it was for a product to be used from birth.

**Conclusions** Advertisements of follow-on formula are perceived by pregnant women and mothers as promoting infant formula.

## INTRODUCTION

The WHO, UNICEF, many national policies, including the Italian one, and professional associations, including the Italian Society of Neonatology, recommend exclusive breast feeding to 6 months and continued breast feeding, with adequate and safe complementary feeding, up to 1 or 2 years and beyond, or until desired by mothers and children.<sup>1–4</sup> Yet, the percentage of mothers who follow these recommendations is low in Italy,<sup>5</sup> in many European and other industrialised countries<sup>6–7</sup> and worldwide.<sup>8</sup> In Italy, the low rates of exclusive breast feeding at 6 months and of continued breast feeding

## What is already known on this topic

- ▶ The marketing of breastmilk substitutes is associated with reduced rates and shorter duration of breast feeding in favour of formula feeding.
- ▶ In most countries of the European Union, advertisements of infant formula are forbidden, while those of follow-on formula and other breastmilk substitutes are allowed.
- ▶ In Australia, it has been suggested that the commercial promotion of toddler formula is used by the industry as a line extension to promote infant and follow-on formula.

## What this study adds

- ▶ In Italy, legal advertisements of follow-on formula are misunderstood by pregnant women, who interpret them as promoting infant formula.
- ▶ Most mothers report that they have come across advertisements of infant formula that are actually forbidden by law.
- ▶ In the European Union, the marketing of follow-on formula, and other breastmilk substitutes, should be subject to the same restrictions currently applied only to infant formula.

at 1–2 years, associated with the widespread use of formula,<sup>5–9</sup> call for a better understanding of the factors underlying the decision to replace breast milk with infant formula.

In many countries, including Italy, there are three main types of formula milks on the market: infant formula, for infants up to 6 months; follow-on formula, recommended from 6 to 12 months; and toddler formula, for children after 12 months. In 1981, the WHO and UNICEF produced the International Code of Marketing of Breastmilk Substitutes,<sup>10</sup> followed by periodic Resolutions of the World Health Assembly, to regulate the commercial promotion of formula and of other foods, fluids and tools that might undermine breast feeding; the role of marketing in reducing the rates of breast feeding or shortening its duration in favour of formula feeding is in fact well

**To cite:** Cattaneo A, Pani P, Carletti C, et al. *Arch Dis Child* Published Online First: [please include Day Month Year] doi:10.1136/archdischild-2014-306996

documented.<sup>11–20</sup> The 1986 Resolution stated that ‘the practice being introduced in some countries of providing infants with specially formulated milks (so-called ‘follow-on milks’) is not necessary’.<sup>21</sup> In Italy, the current legislation on marketing of breastmilk substitutes,<sup>22</sup> derived from a European Union Directive of 2006,<sup>23</sup> forbids all forms of advertisement regarding infant formula, but poses no limits to the commercial promotion of follow-on and toddler formula, and of other breastmilk substitutes.

In the light of research carried out in the UK and Australia,<sup>24–27</sup> showing how difficult it is for pregnant women and mothers to tell the difference between promotion of follow-on or toddler formula and promotion of infant formula, we conducted a similar research to verify whether this applies also to Italian mothers. The objective of this study is to assess how advertisements of follow-on formula for infants aged 6–12 months are presented to and understood by mothers.

## MATERIALS AND METHODS

The study was designed as a three-component multicentre observational research and was approved by the Ethics Committee of the Institute for Maternal and Child Health IRCCS Burlo Garofolo in Trieste.

### Analysis of advertisements

The first component was implemented at the Unit for Health Services Research and International Health of the Institute for Maternal and Child Health in Trieste, where the study was developed and designed. It consisted in the quantitative and qualitative analyses of all the issues published between May 2012 and August 2013 of the three magazines for parents with highest circulation in Italy: ‘Io e il mio bambino’ (A, 740 000 copies), ‘Bimbi sani e belli’ (B, 719 000 copies) and ‘Donna e mamma’ (C, 427 000 copies).<sup>28</sup> The analysis aimed at identifying all the advertisements of follow-on formula and measuring their frequency in relation to the total number of pages of the three magazines and the total number of pages devoted to advertisements. It was also designed to assess qualitatively their format and contents. Advertisements of a single product spreading over more than one page were considered as one advertisement. When a single advertisement included more than a product, for example, toddler or special formulae in addition to follow-on formula, it was also counted as one. Advertisements of other products (ie, baby foods or beverages) by the same companies were noted but were not included in the analysis. The same criteria were applied to advertisements in which follow-on formula was included but was not associated with a specific brand or company.

### In-depth interviews of pregnant women

The second and the third research components were carried out in eight sites, representing different geographical areas, presumably with different breastfeeding rates<sup>29</sup>: four cities in the north (Trieste, Bergamo, Milan, Carpi), two in the centre (Ancona, Rome) and two in the south (Messina, Palermo) of Italy. The second component of the research consisted in in-depth semi-structured qualitative interviews to 10 pregnant women in each of the eight sites, for a total of 80 interviews. Primigestae at 32–36 weeks of gestation who were able to sustain a long and complex interview in Italian were identified among all pregnant women attending antenatal clinics between January and June 2013. Health professionals (physicians, nurses, midwives and others) were excluded because of their knowledge of the topic. After explaining the objective of the study, obtaining written

informed consent and gathering anonymously basic socio-demographic data, a trained researcher interviewed the women. Given the length of the interview, only the first one or two women accepting to participate were recruited per day at each site. The researcher’s training was based on a guide to the interview developed by two of the authors and tested on five pregnant women in Milan. Subsequently, a trial interview was carried out in each of the eight research sites; the results were used to prepare the final version of the guide used by all the interviewers. The test interviews were not included in the analysis. The dialogue between interviewer and pregnant woman centred on two advertisements for follow-on formula chosen among those found in the magazines for parents and was aimed at exploring the perception and understanding by the woman of the messages conveyed by the advertisements after a first glance and after carefully reading the text included. Recruitment stopped after the 10th interview in each site. All the answers were tape recorded and transcribed the same day of the interview or soon after (within 48 h). The transcriptions were subsequently analysed using a framework analysis approach that allows us to identify the themes developed during the interaction between interviewers and pregnant women.<sup>30 31</sup>

### Questionnaire for mothers

The third research component consisted in a survey of mothers of children <3 years old recruited in immunisation or maternal and child health centres in the eight study sites in the first half of 2013. The sample size, based on those of previous similar studies, was distributed equally among the sites, about 50 per site, except for Rome where 200 participants were to be recruited to compensate for the size and spread of the city. Sample mothers were recruited consecutively among all those attending the clinics. A total of 56 eligible mothers were excluded: 49 who were unable to read Italian and seven who refused to participate. Those who were able to read Italian and gave informed consent were asked to fill in an anonymous questionnaire aimed at exploring exposure to marketing. The questionnaire included a section on personal experience in infant and young child feeding (whether they had breast fed or formula fed or both, and for how long), a section on exposure to and perception of formula advertisements, and a final section on socio-demographic variables. In the second section, mothers were asked whether they had ever seen or heard formula advertisements. They were then shown pictures of six infant formula products of different brands, selected among those with the highest market share, and asked whether they had ever seen them advertised. Because the marketing of infant formula is forbidden by the Italian law, one would expect mothers to respond that they had never come across advertisements of those products. Mothers were then asked to answer more detailed questions on where they had seen or heard the advertisements and on what messages they conveyed. They were also asked the type of formula (infant, follow-on or toddler) they thought they had seen advertised. A preliminary version of the questionnaire had been tested in Trieste before the beginning of the survey on five mothers; as for the pilot test interviews of the second research component, these preliminary interviews were not included in the analysis. Data were typed into a customary EpiInfo database by research assistants in each site and sent to the Trieste centre. The qualitative data were analysed using SPSS; main categories were elaborated to investigate the convergence between elements and to compare answers to closed-ended and open-ended questions. Quantitative data were analysed with STATA; logistic regression was used to adjust outcomes by children’s age.

## RESULTS

### Analysis of advertisements

The three magazines for parents had 120 (range 106–132) pages per issue on average. Advertisements took up 24%–26% of the total space. Those regarding formula (n=89) represented about 7% of all advertisement, in 91% of cases they filled a whole page, in the remaining cases two pages. Among these advertisements, those for follow-on formula were the majority (58%), followed by toddler formula for children 13–24 months (28%) and over 24 months of age (14%). There were minor differences among magazines, with magazine B containing 65% of advertisements for follow-on formula and magazine C containing 22% of advertisements for toddler formula over 24 months. As prescribed by law, there were no advertisements for infant formula. Advertisements for follow-on formula concentrated on three brands only: Novalac, Nestlé and Nutriben; three different brands were represented also in advertisements of toddler formula (Mellin, Granarolo and Parmalat). The May 2013 issue of magazine B contained a number of pages with lists of products and prices. Among the products, eight were follow-on and 12 toddler formulae; the lists included a picture of each product, a summary of its characteristics and its price. As these were clearly price lists, they were not counted as advertisements. In the July 2012 issue of magazine C and in two issues (June and July 2012) of magazine B, there were pages promoting prize contests by baby food companies; as there was no direct advertisement of specific products, these pages were also excluded from the analysis. To complete our assessment, we visited the web pages of the three magazines every month. In July 2012, an illegal advertisement for infant formula was spotted on the home page of magazine C. Advertisements for follow-on and toddler formula were present several times on the home pages of magazines A and C.

All the advertisements were constituted by a slogan (about 25% of the overall space), an image (about 50%) and a more or less detailed description of the product (about 25%). The slogans were always parent-oriented, aimed at helping parents solve possible health problems of their babies (colic, difficulty in sleeping or digesting) or at eliciting good feelings (love, affection), or both ('only your true love can keep you awake all night'). Only in one case the slogan indicated that the product was of good quality despite the low cost. The parent-oriented slogans usually came with an image that reinforced the message; an image of the product was included in all advertisements,

mostly on a small scale, except in cases in which the image alone represented the product. Finally, the description of the product was also oriented to parents and references to specific ingredients (eg, probiotics) or to scientific articles were often added.

### In-depth interviews of pregnant women

The 80 women interviewed for the second component of the study had an average age of 32 years (range 20–42), were highly educated (56% with a university degree or higher) and had a paid occupation (16% were unemployed, 9% housewives). Almost 66% had attended an antenatal course, mostly in a hospital (46%) or in a public maternal and child health centre (42%). However, 55% were under the care of a private gynaecologist, especially in Messina and Palermo, while 32% were cared for in public hospitals. About 70% of the 35 women who knew whether or not they had been breast fed as babies reported having been breast fed; the mean duration of breast feeding being around 5 months.

When asked to define at first glance the product they were being shown (half of them were shown an advertisement of Mellin 2; the other half, of Aptamil 2), 33% said it was formula, 31% milk, 19% a specific brand of milk, 5% infant formula, the remaining 12% gave generic answers such as breastmilk substitute. Two women in this last group thought it was breast milk; only one gave the correct answer: follow-on formula. In the conversation that followed, women said they were misled by the ambiguity of the numeral 2 and by the presumed age of the baby portrayed in the advertisement. Regarding the former (table 1), 65% of the women were unable to assign it its proper meaning. Regarding the latter, table 2 clearly shows how difficult it was for these pregnant women to estimate the baby's age. The Aptamil advertisement was considered more ambiguous because of the attitude of the mother, the position of the baby (interpreted as protective, 'in utero', 'in a shield') and his or her scarcity of hair. Table 3 shows the main messages of the two advertisements as perceived by the women before and after reading their texts. Women shown the Aptamil advertisement were more likely to perceive it as similar to breast milk, while those shown Mellin were more impressed by the higher concentration of nutrients. Fifty-five per cent of 56 respondents who were able to indicate the target age of the product correctly said it was for babies older than 6 months; 17% thought the target were children older than 12 months, 13% from 3 to 5 months, 11% from birth and 4% for any age. For 52% of 46 respondents, the product would be useful for mothers with no breast milk or who are not willing to breast feed, for 24% for working mothers, for 13% for mothers who decide to stop breast feeding and for 7% when breast milk is not enough.

**Table 1** Perceived meaning of the numeral 2 after a first glance at and after careful reading of the advertisements

Meaning of numeral 2	After a first glance (%)	After careful reading (%)
From 6 months	0	43
For the second phase of growth	35	19
Other answers	65	38
Added value	9	4*
2 cups (Mellin 2)	8	14
Better than 1	8	9
2-month-old babies	5	0
2-year-old babies	1	0
Don't know	13	0
Other	21	11

\*More iron (Mellin 2 only).

**Table 2** Presumed age of the baby portrayed in the two advertisements

Age (months)	Aptamil 2 (%)	Mellin 2 (%)
2–4	20	3
5–6	39	21
7–11	34	38
12	7	28
>12	0	10

**Table 3** Main messages of the two advertisements after a first glance and after careful reading

Main message	After a first glance		Main message	After careful reading	
	Aptamil 2 (%)	Mellin 2 (%)		Aptamil 2 (%)	Mellin 2 (%)
Similar to breast milk*	39	18	Similar to breast milk*	46	24
Higher amount of nutrients	0	31	Higher amount of iron	0	31
Health and happiness	32	10	Better nutrition	13	23
Protection and care	16	0	Good health and growth	10	2
Good growth	8	10			
Good digestion	0	5	Good digestion	5	5
Other	5	26	Other	26	15

\*Suitable for replacement, supplementation or follow-up.

After carefully looking at the images and reading the text of the advertisements, which is something the average target of these advertisements may seldom do, the understanding of the respondents changed, as shown in [tables 1](#) and [3](#). Yet, there was still a substantial proportion of women who were unable to assign the correct meaning to the numeral 2. The improved understanding of this, however, corresponded to an improved identification of the target: 78% thought the product was for infants over 6 months compared with 55% before reading the text. Yet, for 10% of the respondents, the product targeted infants after weaning and for 2% those with iron deficiency. To 41% of women the product was a supplement to breast milk, to 29% a breastmilk substitute and to 12% it was indicated for mothers who had stopped breast feeding.

### Questionnaire for mothers

The sample of the third and final component of the study was 572. After excluding seven mothers with children older than 3 years and three mothers with very incomplete data, the distribution of the 562 analysable questionnaires was as follows: Trieste 53, Bergamo 53, Milan 50, Carpi 50, Ancona 46, Rome 211, Messina 50 and Palermo 49. The age range was 16–52 years, with a mean of 33.9 and an SD of 5.53; 88% of the

**Table 4** Proportion of mothers who had given breast milk only, formula only and both, by research site, adjusted for children's age ( $\chi^2=58.84$ ;  $p<0.001$ )

Site	N	Breast milk (%)	Formula (%)	Both (%)
Trieste	53	42	15	42
Bergamo	53	26	11	63
Milan	50	33	0	67
Carpi	50	46	11	43
Ancona	46	40	13	47
Rome	211	42	10	48
Messina	50	26	21	53
Palermo	49	17	41	41
Total	562	36	15	50

mothers were Italian; 33% had a university degree, 42% a high school degree; 57% had one child, 32% two and 11% more than two. In total, 469 women (85%) had breast fed at least one of their children. [Table 4](#) shows the proportion of mothers who had given breast milk only, formula only and both, by research site, after adjusting for the age distribution of their infants and children. In total, 220 mothers (39%) were still breast feeding their infants and children aged 0–6 months (72%), 6–12 months (16%), 12–18 months (10%) and over 18 months (2%), while 118 (21%) had stopped by the third month (32%), between 3 and 9 (38%), or after 9 months of age (30%).

In total, 455 mothers (81%) stated that they had come across advertisements of formula. Of these, only 17 (4%) reported that they had never seen an advertisement for the six infant formula products they were shown. Almost 84% declared that they had seen advertised Mellin infant formula, by far the most popular; 52% had seen Nestlé, 31% Plasmon and Aptamil, 28% Hipp and 25% Humana. They thought that they had seen them on television (66%), magazines (62%), catalogues (32%), leaflets (23%), websites (15%) or at fairs and conferences (4%). As far as the understanding of the advertisements is concerned, 69% of the mothers believed they suggest that formula ensures appropriate growth and development, 56% that it reinforces the immune system, 14% that it is convenient, 9% that it makes infants healthier and happier and 4% that it improves brain development. When specifically asked about the type of formula, 297 mothers (65%) who said that they had seen an advertisement thought that it was for a product to be used from birth, 25% from 6 months and 10% from 12 months. The percentages of mothers who thought that they had seen advertisements of infant formula differed by site and maternal education, but the differences were not statistically significant. Similarly, there were no statistically significant differences between mothers who had given their infants breast milk, formula or both, indicating that the line extension effect of marketing may act on all mothers, irrespective of their infant-feeding experiences. Almost 20% of mothers declared that they had received free samples of formula, 45% from their paediatricians, 16% in the hospital, 8% at fairs and other events, 7% in a pharmacy, 7% in shops and the remaining 17% from other sources. The percentage of mothers receiving free samples was higher in Messina (37%), Milan (28%) and Carpi (23%) and lower in Trieste (12%) and Bergamo (13%); the differences by site were statistically significant ( $p<0.01$ ).

### DISCUSSION

Our study confirms the results of previous studies<sup>24–27 32 33</sup>; legal advertisements of follow-on, or toddler, formula are perceived by pregnant women and mothers as promoting infant formula, which is forbidden by law. This appears to be true in Italy, and probably in European Union countries subject to similar legislation,<sup>23</sup> and also in countries such as Australia, Canada and the USA, that have imposed different measures to restrict advertising of infant formula.<sup>33</sup> It is clear that companies take advantage of loopholes in the legislations to achieve their marketing objectives anyhow.<sup>34</sup> Yet, follow-on formula is probably an unnecessary product. As mentioned in the introduction, it was considered not necessary by a World Health Assembly resolution in 1986.<sup>21</sup> This position has been reiterated in a recent briefing,<sup>35</sup> in which WHO 'maintains that as well as being unnecessary, follow-on formula is unsuitable when used as a breastmilk replacement from six months of age onwards', and adds that 'current formulations lead to higher protein intake and lower intake of essential fatty acids, iron, zinc and B

vitamins than those recommended by WHO for adequate growth and development of infants and young children'. Follow-on formula, therefore, is unnecessary and is also unsuitable as a replacement of breast milk. The opinion that follow-on formula is unnecessary has been expressed also by a group of experts coordinated by the Early Nutrition Academy.<sup>36</sup> In their report they state that 'infant formula can continue to serve as a breastmilk substitute for the entire duration of the first year of life and even beyond'. They add that 'during the first year of life, both infant and follow-on formula serve to substitute for breastmilk; therefore, the marketing of both groups of products should respect the International Code of Marketing of Breast Milk Substitutes'.

The results of the second and third components of our study show that the majority of pregnant women and mothers have little knowledge of the different types of formula for different ages that are available on the market, irrespective of their level of education. They are confused by the different numbers they see on labels that otherwise have the same layout and by the undefined age of the infants portrayed in the advertisements. Though their understanding may increase after reading the texts of labels and advertisements which is something most mothers probably do not do, an important proportion of women continue to be confused about the indications of different products and tend to rely, therefore, on the advice of health professionals. Paediatricians, however, as well as other professionals, are the priority target of separate marketing activities, and relying on them may also lead to excessive use of formula in relation to needs.<sup>37 38</sup> The confusion created by advertisements may decrease the confidence of mothers in their ability to breast feed,<sup>39</sup> and thus lead to inappropriate use of breastmilk substitutes. This is even more likely if mothers consider that, by distributing samples of formula, paediatricians and other health professionals endorse these products.

Our study has some limitations. The eight sites were not chosen at random, but based on availability of interested researchers. They represent, however, different regions of Italy, and there are no reasons to think that women from other regions would have produced different results. Participants were recruited consecutively, not randomly, but there is no reason to think that pregnant women interviewed at prenatal services and mothers surveyed at immunisation services would not be representative of all pregnant women and mothers as these services are almost universal in terms of coverage. There are two exceptions: (a) because of difficulties with language, migrant women and mothers were under-represented (only about 2.5% of the sample in our third study component compared with almost 15% of registered births from migrant women in Italy)<sup>40</sup>; (b) because of the length of the interview, women with higher education and interest in infant feeding were over-represented (33% had a university degree in our third study component compared with 16% in the general population).<sup>41</sup> However, a fair representation of migrant and less educated women would have probably increased the percentage of respondents confused by advertisements. Further research may be needed to better understand the response to marketing of migrant and less educated women. Finally, as the qualitative interviews of the second research component were carried out by eight different interviewers, and because the answers by pregnant women may be influenced by the attitudes of these interviewers, one might wonder whether the results might suffer from such variability. However, the interviewers were all trained in the use of the guide and on the possible pitfalls in qualitative research, and we did not find evidence of serious mistakes in their transcriptions of the interviews.

To conclude, our research confirms that the marketing of follow-on formula, and indeed of any other breastmilk substitute, may be used by the industry as a line extension to circumvent the law. This is potentially harmful insofar as it may lead to lower rates and duration of breast feeding. It should, therefore, be subject to far greater restrictions than those currently implemented in most countries by legislations that are clearly free of loopholes that allow companies to evade restrictions and rely on indirect forms of marketing.

**Correction notice** This paper has been amended since it was published Online First. The name of the institution for author affiliation (1) and the corresponding author is missing the name of the institution: IRCCS Burlo Garofolo. This has now been amended.

**Collaborators** The following are members of the Follow-on Formula Research Group: Chiara Barbiero, Claudia Carletti, Adriano Cattaneo, Alessandra Knowles, Marcella Montico, Paola Pani (Institute for Maternal and Child Health, Trieste); Margherita Locatelli, Stefania Conti, Edda Pellegrini (Papa Giovanni XXIII Hospital, Bergamo); Valentina Mutti, Antonella Nespoli (University of Milan Bicocca, Milan); Cecilia Guidetti (Institute of Social Research, Milan); Maria Enrica Bettinelli, Costanza De Gioia, Miriam Lelli, Rita Mascheroni (Local Health Authority, Milan); Irene Cetin, Paola Pileri (Luigi Sacco University Hospital, Milan); Margherita Guidetti (University of Modena and Reggio Emilia); Rita Gatti, Grazia Pompilio, Valentina Ortenzi, Laura Stronati (Local Health Authority, Ancona); Angela Giusti (National Institute of Health, Rome); Antonietta Spadea, Iolanda Rinaldi (Local Health Authority Rome A, Rome); Laura Galluzzo, Patrizia Vadacca, Simona Sarta, Emilio Piccione (University of Rome Tor Vergata, Rome); Sergio Conti Nibali (Local Health Authority, Messina); Rosamatria Crisafulli, Roberto Conti Nibali, Francesco Corrado (University Hospital, Messina); Monica Garraffa, Maria Di Pasquale, Maria Caterina Gallo (Association Le Balate, Palermo).

**Contributors** AC designed and coordinated the study, participated in data analysis and interpretation, and drafted and revised the paper. He is guarantor. PP, CC, MG, VM, CG and AK designed and tested the data collection tools, monitored data collection for the whole trial, helped gathering data in some of the study sites, participated in data analysis and interpretation, and revised the different drafts of the paper. With support from MM, they wrote the statistical analysis plan, and cleaned and analysed the data. MM helped interpreting the data and revised the paper. All the other authors helped finalise the study design and the data collection tools, were in charge of organising and implementing data collection in the different study sites, including transcription of the qualitative interviews and entering of quantitative data in the customary EpiInfo database, and revised the different drafts of the paper. All members of the Follow-on Formula Research Group had full access to all of the data, take responsibility for the integrity of the data and the accuracy of the data analysis, and read and approved the final version of the paper.

**Funding** The study was funded by the Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy, and was approved by its Ethics Committee (RC 49/11). The study was also partially funded by the universities, institutions, local health authorities and associations that allowed their researchers to collect data in the eight study sites where the study took place.

**Competing interests** None.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data sharing statement** The full data set is available upon reasonable request from the corresponding author at [adriano.cattaneo@burlo.trieste.it](mailto:adriano.cattaneo@burlo.trieste.it). Consent for data sharing was not obtained, but the presented data are anonymised and risk of identification is low.

## REFERENCES

- 1 WHO. *Global strategy for infant and young child feeding*. Geneva: WHO, 2002.
- 2 Ministero della salute. *Linee di indirizzo nazionali sulla protezione, la promozione ed il sostegno dell'allattamento al seno*. Gazzetta ufficiale n 32 del 7 Febbraio 2008, Roma, 2008.
- 3 American Academy of Pediatrics Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics* 2012;129:827–41.
- 4 Società Italiana di Neonatologia. Raccomandazioni sull'allattamento materno per i nati a termine, di peso appropriato, sani. *Medico e Bambino* 2002;21:91–8.
- 5 Carletti C, Pani P, Knowles A, et al. Breastfeeding to 24 months of age in the northeast of Italy: a cohort study. *Breastfeed Med* 2011;6:177–82.
- 6 Cattaneo A, Burmaz T, Arendt M, et al. Protection, promotion and support of breast-feeding in Europe: progress from 2002 to 2007. *Public Health Nutr* 2009;13:751–9.
- 7 Ibanez G, Martin N, Denantes M, et al. Prevalence of breastfeeding in industrialized countries. *Rev Epidemiol Sante Publique* 2012;60:305–20.

- 8 Cai X, Wardlaw T, Brown DW. Global trends in exclusive breastfeeding. *Int Breastfeed J* 2012;7:12.
- 9 Giovannini M, Riva E, Banderali G, et al. Exclusive versus predominant breastfeeding in Italian maternity wards and feeding practices through the first year of life. *J Hum Lact* 2005;21:259–65.
- 10 World Health Assembly. *International code of marketing of breastmilk substitutes*. Resolution of the 34th World Health Assembly. No. 34.22. Geneva: WHO, 1981.
- 11 Greiner T. *The promotion of bottle feeding by multinational corporations: how advertising and the health professions have contributed*. Ithaca, NY: Cornell University, 1975.
- 12 Greiner T, Latham MC. The influence of infant food advertising on infant feeding practices in St. Vincent. *Int J Health Serv* 1982;12:53–75.
- 13 Adair LS, Popkin BM, Guilkey DK. The duration of breast-feeding: how is it affected by biological, sociodemographic, health sector, and food industry factors? *Demography* 1993;30:63–80.
- 14 Howard C, Howard F, Lawrence R, et al. Office prenatal formula advertising and its effect on breast-feeding patterns. *Obstet Gynecol* 2000;95:296–303.
- 15 Donnelly A, Snowden HM, Renfrew MJ, et al. Commercial hospital discharge packs for breastfeeding women. *Cochrane Database Syst Rev* 2000;(2):CD002075.
- 16 Foss KA, Southwell BG. Infant feeding and the media: the relationship between Parents' Magazine content and breastfeeding, 1972–2000. *Int Breastfeed J* 2006;1:10.
- 17 Rosenberg KD, Eastham CA, Kasehagen LJ, et al. Marketing infant formula through hospitals: the impact of commercial hospital discharge packs on breastfeeding. *Am J Public Health* 2008;98:290–5.
- 18 Sobel HL, Iellamo A, Raya RR, et al. Is unimpeded marketing for breast milk substitutes responsible for the decline in breastfeeding in the Philippines? An exploratory survey and focus group analysis. *Soc Sci Med* 2011;73:1445–8.
- 19 Feldman-Winter L, Grossman X, Palaniappan A, et al. Removal of industry-sponsored formula sample packs from the hospital: does it make a difference? *J Hum Lact* 2012;28:380–8.
- 20 Zhang Y, Carlton E, Fein SB. The association of prenatal media marketing exposure recall with breastfeeding intentions, initiation, and duration. *J Hum Lact* 2013;29:500–9.
- 21 World Health Assembly. *Resolution 39.28*. Geneva: WHO, 1986.
- 22 Ministero della salute. *Regolamento concernente l'attuazione della direttiva 2006/141/CE per la parte riguardante gli alimenti per lattanti e gli alimenti di proseguimento destinati alla Comunità europea ed all'esportazione presso Paesi terzi*. Gazzetta Ufficiale—Serie Generale n.155. Rome, 2009.
- 23 European Commission. *Directive 2006/141/EC*. Brussels: European Commission, 2006.
- 24 NOP World for Department of Health. *Attitudes to feeding: report of survey findings*. London: Crown, 2005.
- 25 National Childbirth Trust. *Follow-on milk advertising survey: topline results*. London: UNICEF UK, 2005.
- 26 Berry NJ, Jones S, Iverson D. It's all formula to me: women's understandings of toddler milk ads. *Breastfeed Rev* 2010;18:21–30.
- 27 Berry NJ, Jones SC, Iverson D. Toddler milk advertising in Australia: Infant formula advertising in disguise? *Australasian Marketing Journal* 2012;20:24–7.
- 28 DOXA/IPSOS. *Indagine sulla lettura dei quotidiani e dei periodici in Italia*. Milan: AUDIPRESS, 2011.
- 29 Lauria L, Lamberti A, Buoncristiano M, et al. *Percorso nascita: promozione e valutazione della qualità di modelli operativi. Le indagini del 2008–2009 e del 2010–2011*. Rapporti ISTISAN39. Rome: Istituto Superiore di Sanità, 2012.
- 30 Rirchie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess RG, eds. *Analyzing qualitative data*. London: Routledge, 1994:173–94.
- 31 Cardano M. *Tecniche di ricerca qualitativa: percorsi di ricerca nelle scienze sociali*. Roma: Carocci, 2003.
- 32 Berry NJ, Jones SC, Iverson D. Relax, you're soaking in it: sources of information about infant formula. *Breastfeed Rev* 2011;19:9–18.
- 33 Berry NJ, Jones SC, Iverson D. Circumventing the WHO Code? An observational study. *Arch Dis Child* 2012;97:320–5.
- 34 Faircloth C. *A weak formula for legislation: how loopholes in the law are putting babies at risk*. London: UNICEF UK/National Childbirth Trust/Save the Children UK, 2007.
- 35 WHO. *Information concerning the use and marketing of follow-up formula*. Geneva: WHO, 2013.
- 36 Koletzko B, Bhutta ZA, Cai W, et al. Compositional requirements of follow-up formula for use in infancy: recommendations of an international expert group coordinated by the Early Nutrition Academy. *Ann Nutr Metab* 2013;62:44–54.
- 37 Howard FM, Howard CR, Weitzman M. The physician as advertiser: the unintentional discouragement of breast-feeding. *Obstet Gynecol* 1993;81:1048–51.
- 38 Wright CM, Waterston AJ. Relationships between paediatricians and infant formula milk companies. *Arch Dis Child* 2006;91:383–5.
- 39 Parry K, Taylor E, Hall-Dardess P, et al. Understanding women's interpretations of infant formula advertising. *Birth* 2013;40:115–24.
- 40 ISTAT. *Natalità e fecondità della popolazione residente nel 2011*. Rome: ISTAT, 2012.
- 41 ISTAT. *Essere madri in Italia*. Rome: ISTAT, 2007.



## Advertisements of follow-on formula and their perception by pregnant women and mothers in Italy

Adriano Cattaneo, Paola Pani, Claudia Carletti, Margherita Guidetti, Valentina Mutti, Cecilia Guidetti and Alessandra Knowles

*Arch Dis Child* published online December 15, 2014

---

Updated information and services can be found at:

<http://adc.bmj.com/content/early/2014/12/22/archdischild-2014-306996>

---

*These include:*

### References

This article cites 23 articles, 5 of which you can access for free at: <http://adc.bmj.com/content/early/2014/12/22/archdischild-2014-306996#BIBL>

### Email alerting service

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

---

### Topic Collections

Articles on similar topics can be found in the following collections

[Infant nutrition \(including breastfeeding\)](#) (364)  
[Childhood nutrition](#) (615)  
[Pregnancy](#) (464)  
[Reproductive medicine](#) (843)  
[Epidemiologic studies](#) (1549)

---

### Notes

To request permissions go to:

<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:

<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:

<http://group.bmj.com/subscribe/>