

Supplementary material

Title: Digital marketing of formula and baby food negatively influences breastfeeding and complementary feeding: a cross-sectional study and video recording of parental exposure in Mexico

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Breastfeeding and child feeding practices. Parents were asked about their youngest child's consumption of the following list of foods, the day previous to the interview.

Supplementary Table 1. Foods and beverages were included in the questionnaire on feeding practices in children under two years of age.

Formulas
Infant formula (stage 1) (0-6 months)
Follow-on formula (stage 2) (6-12 months)
Growing-up milk (stage 3) (+12 months)
Special formula (comfort, to prevent colic or constipation, with probiotics)
Hypoallergenic formula (hydrolyzed)
Lactose-free formula
Fortified formula (DHA, HMO, iron, etc)
Other milk
Raw milk (cow, goat, etc)
Liquid or powdered pasteurized milk (cow, goat, etc)
Licons milk (liquid or powdered)
Flavored milk (chocolate, vanilla, other)
Evaporated milk
Soy, oat, almond, or other non-dairy milk
Other
Liquids/beverages
Plain water
Sodas
Natural juices (fruits/vegetables)
Packaged juices
Coffee
Tea

Atole
Broths
Cereals and legumes
Pasta
Rice
Tortillas or other food made with corn dough
Cereals not specific for baby (oat, amaranth, tapioca, quinoa, etc)
Tubers (potatoes, cassava, sweet potato, etc)
Bread (sweet/salt)
Industrialized bread
Legumes (beans, lentils, broad beans, etc)
Fruits and vegetables (fresh, frozen, whole, chopped, or pureed homemade)
Fruits (apple, orange, papaya, banana, etc)
Vegetables (carrots, broccoli, green leafy, tomatoes, etc)
Meats (whole, chopped, or pureed homemade)
Beef and pork meat
Heart, liver, offal (kidney, sweetbreads)
Chicken
Fish (fresh or canned)
Ham or sausages or other cold cuts
Dairy and eggs
Cheese
Yakult o similar
Yogurt
Danonino type
Eggs
Commercial foods and beverages for children under two years of age and other industrialized products
Baby cereals (Nestum, Cerelac, other)
Vegetable or fruit canned baby porridge (Gerber, Heinz, other)
Meat canned baby porridge (Gerber, Heinz, other)
Packaged juices for baby
Bottled water for baby
Yogurt for baby
Cookies/snacks for baby
Organic packaged baby food
Supplements (Pediasure)
Breakfast cereals
Packaged chips, chips, cookies, candies, chocolates, or cupcakes

Selection of formula and baby food companies

We obtained information from the leading formula and baby foods with the highest sales and consumption in the country. We analyzed the Euromonitor report on baby food sales in Mexico [1] and the National Health and Nutrition Survey (ENSANUT 2018-19) [2] and selected the 10 companies and their brands that met at least 2 of the 4 selection criteria: 1)

that they were identified as in the ENSANUT 2018-19 and/or Euromonitor, 2) >100,000 followers in their main social media and/or official website, and 3) they were among the best sellers in pharmacies/supermarkets online. Two additional companies were included due to their rising sales of baby food (Holle Organic and Heinz), although did not meet all the inclusion criteria. The 11 companies and their brands/products are presented in **Supplementary Table 2**.

Supplementary Table 2. Companies and brands of formulas and baby foods were included in the study of digital marketing in Mexico.

Company	Brand
Nestlé	Nan Nido Good Care Excella Gold Gerber Cerelac Nestum
Mead Johnson	Enfamil Enfagrow Nutramigen Pregestimil
Abbott	Similac Pediasure
Nutricia/Danone	Aptamil Danonino Danone
Genomma Lab	Novamil
Alula-Sanulac /Wyeth	Progress Gold SMA Gold Promil Gold Infacare
FriesmanCampi	Frisolac Friso
Siegfried Rhein	Nutri Baby
Nucitec	Alpha Pro
Holle baby food	Holle Organic
Heinz	Heinz baby club

Source: Elaborated with information from Euromonitor, The National Health and Nutrition Survey 2018-19, social media, and official websites of companies, pharmacies, and supermarkets in Mexico. IYCF: Infant and young child feeding practices.

Supplementary Table 3. Breastfeeding and IYCF practices in children under two years of age, and motivation and purchase of formula and baby food in Mexico. Online survey (n=1,074).

Outcome variables	%
<i>Breastfeeding and child feeding practices</i>	
Exclusive breastfeeding (children under 6 month) % de niños de 0-5 meses de edad que fueron alimentados exclusivamente con leche materna en el día anterior	32.6
Mixed breastfeeding (children under 6 months)¹ % of children 0-5 months of age who were fed formula and/or animal milk in addition to human milk on the previous day	34.5
Continued breastfeeding (12-23 months) % of children 12-23 months of age who were breastfed on the previous day	45.2
Consumption of sugary beverages (6-23 months)² % of children 6-23 months of age who consumed sugary beverages on the previous day	42.6
Consumption of unhealthy foods (6-23 months)³ % of children 6-23 months of age who consumed unhealthy food on the previous day	72.0
Consumption of formula (0-23 months) % of children 0-23 months of age who consumed formula milk on the previous day	58.2
<i>Purchase and purchase motivation of formula and baby food</i>	
Formula and baby food purchases in physical or online stores % of parents who made one or more purchases of formula and baby food in physical and/or online stores in the month before the survey	87.2
Formula and baby food purchases in online stores % of parents who made one or more online purchases of infant formula and/or baby food in the month before the survey	17.7
Purchase motivation % of parents who report purchasing infant formula and baby food due to:	
Nutrient content	44.6
Ease of serving	37.1
Easy to preserve and store	22.5
Product is organic	21.8
Effectiveness for baby satiety	19.7
Relieves gastrointestinal symptoms	14.2
Purchase intention % of parents who report having performed:	
Formula and infant food online searches	37.8
Visits to infant formula and baby food companies' websites or social media	34.4

IYCF: Infant and Young Child Feeding practices according to indicators recommended by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) [3]. 1. Exclusive breastfeeding, human milk and plain water, human milk and animal milk/formula, human milk and non-dairy fluids, human milk, and complementary feeding products. 2. Commercially produced and packaged, sweetened beverages, including 100% fruit juice and fruit-flavored drinks to which sweeteners have been added. 3. Packaged foods for babies, and other industrialized products that can be high in sugar, salt, and/or unhealthy fats.

Supplementary Table 4. Association between exposure (self-report) of parents to digital marketing of formula and baby food, with the purchase of products and IYCF practices. Stratified by intention to exclusively breastfeed before birth.

Exposure to digital marketing in the last month (self-report)	Purchase of formula and baby foods ¹	Changes in child's feeding ¹	Exclusive breastfeeding (0-5 months) ²	Continued breastfeeding (12-23 months) ³	Mixed breastfeeding (0-5 months) ²	Consumption of processed food ¹	Consumption of formula ¹	Consumption of sugary drinks ¹
	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI
Frequency of digital marketing								
Never	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
1-2 times/week	2.1 ** (1.1-4.5)	0.86 0.41-1.8	2.2 (0.60-7.8)	1.1 (0.47-2.3)	0.90 (0.20-4.1)	1.1 (0.60-1.8)	0.98 (0.57-1.7)	0.12 (0.69-2.1)
3-5 times/week	3.2 *** (1.7-6.4)	1.8 0.9-3.6	0.74 (0.21-2.6)	1.6 (0.74-3.5)	3.2 (0.77-13.5)	1.2 (0.70-2.1)	1.7* (0.98-2.9)	1.4 (0.80-2.4)
Daily	2.1* (1.0-4.0)	1.7 0.13-1.47	2.3 (0.51-10.0)	2.0 (0.82-1.6)	0.5 (0.08-3.5)	0.85 (0.46-2.6)	1.1 (0.57-1.9)	0.93 (0.51-1.7)
Tertiles of the number of advertised products observed in digital media								
Tertile 1	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
Tertile 2	1.58 (0.94-2.6)	1.95** (1.1-3.6)	0.52 (0.19-1.4)	0.87 (0.48-1.59)	1.3 (0.39-4.3)	1.4 (0.93-2.2)	1.4 (0.96-2.2)	1.39 (0.92-2.1)
Tertile 3	2.9*** (1.6-5.4)	3.5*** (1.9-6.2)	0.44 (0.16-1.22)	1.4 (0.75-2.5)	5.4*** (1.4-20.9)	1.5 (0.96-2.3)	1.7*** (1.1-2.6)	1.58** (1.1-2.4)

¹n=576 ²n=145 ³n=292

*p<0.10, **p<0.05, ***p<0.001. OR: Odds ratio. Logistic regression model adjusted for: the age of the baby (in months), age and sex of the survey participant, socioeconomic level, number of children, marital status, occupation, schooling, and region of the country. 1. Parents who made a purchase of formula and/or baby foods defined as commercial foods for children under two years of age, in the last month in physical or online stores. 2. Mothers/fathers who reported changing the way they were feeding their youngest children influenced by advertisements for formula and baby food observed in digital media. 3. Infants 0-5 months of age who were fed exclusively with breast milk during the previous day. 4. Children 12-23 months of age who were fed breast milk during the previous day. 5. Exclusive breastfeeding, human milk and plain water, human milk and animal milk/formula, human milk and non-dairy fluids, human milk and complementary feeding products. 6. Children 0-23 months that consumed packaged foods for babies, and other industrialized products that can be high in sugar, salt, and/or unhealthy fats during the previous day. 7. Children 0-23 months that consumed infant formula (0-6 months), follow-on formula (6-12 months), growing-up milk (+12 months), and special formulas in the previous day. 8. Children 0-23 months that consumed commercially produced and packaged, sweetened beverages, including 100% fruit juice and fruit-flavored drinks to which sweeteners have been added during the previous day.

Supplementary Table 5. Association between exposure (self-report) of parents to digital marketing of formula and baby food, with the purchase of products and IYCF practices. Stratified by intention to mixed breastfeed or formula feed before birth.

Exposure to digital marketing in the last month (self-report)	Purchase of formula and baby foods ¹	Changes in child's feeding ¹	Exclusive breastfeeding (0-5 months) ²	Continued breastfeeding (12-23 months) ³	Mixed breastfeeding (0-5 months) ²	Consumption of processed food ¹	Consumption of formula ¹	Consumption of sugary drinks ¹
	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI	OR 95% CI
Frequency of digital marketing								
Never	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
1-2 times/week	2.2 (0.71-6.7)	1.6 (0.76-3.3)	1.44 (0.22-9.3)	0.99 (0.42-2.3)	1.15 (0.24-5.2)	0.77 (0.42-1.4)	0.72 (0.37-1.4)	0.50 (0.23-1.1)
3-5 times/week	1.8 (0.65-5.1)	2.2** (1.2-4.4)	0.86 (0.12-6.0)	1.6 (0.71-3.8)	2.0 (0.49-8.2)	0.97 (0.53-1.8)	1.2 (0.61-2.2)	0.96 (0.44-2.0)
Daily	4.8 (0.95-25.1)	2.3** (1.1-5.1)	0.66 (0.08-5.3)	0.87 (0.25-3.0)	2.0 (0.48-8.4)	0.63 (0.31-1.3)	1.9 (0.76-1.1)	1.5 (0.56-4.3)
Tertiles of the number of advertised products observed in digital media								
Tertile 1	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)	(ref)
Tertile 2	1.38 (0.57-3.33)	1.56 (0.89-2.7)	0.82 (0.19-3.5)	1.38 (0.71-2.6)	0.97 (0.30-3.1)	1.3 (0.93-2.2)	0.85 (0.52-1.4)	0.75 (0.43-1.3)
Tertile 3	1.79 (0.66-4.9)	2.9*** (1.7-4.9)	0.13** (0.02-0.69)	0.73 (0.35-1.5)	1.7 (0.63-4.6)	1.5 (0.93-2.4)	2.8*** (1.6-5.0)	2.1** (1.1-3.9)

¹n=498 ²n=119 ³n=243

*p<0.10, **p<0.05, ***p<0.001. OR: Odds ratio. Logistic regression model adjusted for: the age of the baby (in months), age and sex of the survey participant, socioeconomic level, number of children, marital status, occupation, schooling, and region of the country. 1. Parents who made a purchase of formula and/or baby foods defined as commercial foods for children under two years of age, in the last month in physical or online stores. 2. Mothers/fathers who reported changing the way they were feeding their youngest children influenced by advertisements for formula and baby food observed in digital media. 3. Infants 0-5 months of age who were fed exclusively with breast milk during the previous day. 4. Children 12-23 months of age who were fed breast milk during the previous day. 4. Exclusive breastfeeding, human milk and plain water, human milk and animal milk/formula, human milk and non-dairy fluids, human milk and complementary feeding products. 5. Children 0-23 months that consumed packaged foods for babies, and other industrialized products that can be high in sugar, salt, and/or unhealthy fats during the previous day. 6. Children 0-23 months that consumed infant formula (0-6 months), follow-on formula (6-12 months), growing-up milk (+12 months), and special formulas in the previous day. 7. Children 0-23 months that consumed commercially produced and packaged, sweetened beverages, including 100% fruit juice and fruit-flavored drinks to which sweeteners have been added during the previous day.

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