

Marketing claims on infant formula and toddler milk packages: What do caregivers think they mean?

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Background

Inappropriate marketing of infant formula, including potentially misleading nutrition and health claims on product packages, discourages breastfeeding initiation and continuation and raises public health concerns. In 1981, the World Health Organization (WHO) established the International Code of Marketing of Breast-milk Substitutes (the Code) which strongly encourages countries and manufacturers to regulate marketing of infant formula.¹ Among other provisions, the Code calls for product labels on infant formula packages to include statements about the superiority of breastfeeding, and bans pictures and text that idealize infant formula. It also calls for prohibitions on nutrition and health claims that imply that infant formula is equivalent to or better than breastfeeding.

In 2016, the WHO expanded the Code to cover products specifically marketed for feeding young children up to age 3.² This action was taken in response to the introduction and aggressive marketing of new product categories aimed at young children, including “toddler milks” for children 12-36 months. Toddler milks consist primarily of powdered milk, corn syrup solids or other caloric sweeteners, and vegetable oil.³ The added sugar in these products is not recommended for children under two years old.⁴ In addition, an expert panel, representing four key national health and nutrition organizations, recommended that parents do not serve toddler milks to their young children as they offer no unique nutritional value beyond healthy food and are more expensive than cow’s milk.⁵ Furthermore, toddler milks often use similar branding, packaging, and labels as infant formulas from the same manufacturers, which may confuse caregivers about their benefits and appropriateness for children of different ages.

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The United States is one of a small number of countries that has not adopted any legal measures to implement the Code, and U.S. infant formula labels conflict with many Code provisions. In a 2017 analysis, infant formula packages averaged 5.9 nutrition claims and 3.1 messages about children’s development.⁶ In addition, all packages included some type of message about breastfeeding (e.g., “Breastfeeding is best”), but none clearly stated the superiority of breastfeeding or risks of formula feeding.

Moreover, there is insufficient scientific evidence to support common product claims, including benefits for fussiness, gas or colic, or links between DHA and brain development or prebiotics and the immune system.^{7,8} These claims may mislead caregivers about the benefits of serving infant formula and imply that formulas are as good as or better than breastfeeding.

Researchers have documented similar problematic labeling practices on toddler milk packages. In the United States, these products averaged 4.0 nutrition-related and 2.6 child-development messages per package,⁹ and these claims tout numerous benefits for toddlers' nutrition, cognitive development and growth.¹⁰ As a result, caregivers may also attribute unproven nutrition and health-related benefits to serving toddler milks. This marketing could also convince parents that young children require expensive commercial products and that family meals are inadequate for toddlers' nutrition requirements. Furthermore, cross-promotion of toddler milks with infant formulas from the same manufacturer may confuse caregivers about the appropriate ages to serve individual products.¹¹ As a result, they may provide toddler milks, which do not provide the required nutrients for optimal infant development, to their babies under 12 months old.

However, research has not yet examined whether claims and other marketing messages mislead or deceive caregivers about the benefits of serving infant formula and toddler milks. In this study, Rudd Center researchers surveyed caregivers to assess their understanding of the meaning of common claims on an infant formula or toddler milk package, including benefits for their child and how these products compare to breastfeeding or serving healthy foods. We also measured whether there was a misconception that toddler milks are appropriate for infants.

The survey

Rudd Center researchers conducted an online survey of U.S. caregivers of infants or toddlers in their household, including 555 caregivers of infants (6-11 months) and 1,090 toddler caregivers. Toddler caregivers were approximately evenly divided between younger toddlers (12-23 months) and older toddlers (24-36 months). A diverse sample was recruited to compare responses by participant race/ethnicity, education, and household income (see **Appendix Table**).

Infant caregivers were shown images of one infant formula product package (see **Figure 1**, page 3); and toddler caregivers were shown images of one toddler milk package (see **Figure 2**, page 4). Participants were asked if they had seen the product before and then asked to indicate what the messages on the package meant to them, selecting from a number of options. The survey included additional questions, reported elsewhere. Detailed methods are provided in the **Appendix**.

Results

The majority of participants, 60% of both infant and toddler caregivers, indicated that they had seen the infant formula or toddler milk product package before.

Messages on the infant formula package

When asked what these messages mean about the infant formula as compared to breastmilk, only 5% of caregivers indicated that the messages on the package mean that the infant formula is better than breastmilk for babies (see **Figure 1** and **Table 1**). However, 71% believed the messages mean that the formula is as good as breastmilk, while just one-quarter believed that they mean the formula is not as good as breastmilk. Participants with some college or a 2-year college degree were more likely to agree that the messages mean the formula is as good as breastmilk and less likely to agree that that they mean it is not as good as breastmilk, compared to less and more educated caregivers.

In addition, 60% of participants indicated the messages mean that the infant formula will “allow my baby to develop all his/her mental potential.” In addition, 49% believed they mean that the formula would keep their baby from getting sick more often and 42% thought they mean that the formula would make their baby smarter. Interestingly, beliefs that the messages mean their baby will develop their mental potential decreased with caregiver education, whereas beliefs about the other two statements increased.

Figure 1. *Infant formula package* (shown to infant caregivers)



Table 1. *Meaning of messages on infant formula package*

	Infant caregivers (6-11 months)			
	% agreement			
	Total (n=555)	High school or GED (a) (n=94)	Some college or 2-year college (b) (n=210)	4-year college graduate or higher (c) (n=251)
What do the messages found on this package mean to you? (select one option)				
This infant formula is not as good as breastmilk for babies*	24%	30%	19% (a,c)	26%
This infant formula is as good as breastmilk for babies	71%	66%	79% (a,c)	67%
This infant formula is better than breastmilk for babies	5%	4%	2%	6%
What do the messages found on this package mean to you? (select all that apply)				
This drink will...				
Allow my baby to develop all his/her mental potential*	60%	69% (b,c)	65%	52%
Keep my baby from getting sick as often*	49%	36%	49% (a)	54% (a)
Make my baby smarter*	42%	18%	43%	51% (a,b)

*Responses differ significantly by education level ($p < .05$).

Letters indicate significant differences between individual education level groups.

Messages on the toddler milk package

Nearly all (92%) of toddler caregivers believed that the messages on the toddler drink package mean the product is for toddlers, and 70% thought they mean this is a good product to give most toddlers when they are too old for infant formula (see **Figure 2** and **Table 2**).

However, more than one-half of caregivers thought the messages mean the product is for babies too, including two-thirds of caregivers with a college education or higher.

Figure 2. Toddler formula package (shown to toddler caregivers)

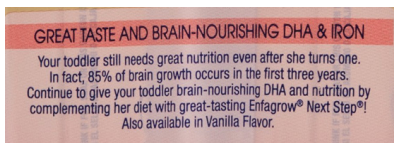


Table 2. Meaning of messages on toddler milk package

	Toddler caregivers (12-36 months)			
	% agreement			
	Total (n=1,090)	High school or GED (a) (n=244)	Some college or 2-year college (b) (n=375)	4-year college graduate or higher (c) (n=471)
What do the messages found on this package mean to you? (select all that apply)				
This product is for toddlers	92%	97%	97%	86%
This product is for babies*	55%	30%	43% (a)	68% (a,b)
This is a good drink to give most toddlers when they are too old for infant formula (Agree, disagree, not sure)				
% agree*	70%	60%	70% (a)	75% (b)
% disagree	10%	16%	8%	7%
What do the messages found on this package mean to you? (choose all that apply)				
This drink...				
Gives toddlers nutrition that they wouldn't get from other sources*	52%	59% (b,c)	51%	49%
Is a good supplement when a toddler doesn't want to eat	43%	42%	45%	43%
Is necessary for toddlers to have correct nutrition	33%	36%	34%	31%
Is better for toddlers than plain whole milk	29%	25%	28%	31%
Is a good replacement for fruits and vegetables*	17%	7%	15% (a)	25% (a,b)
Will make toddlers smarter	15%	14%	15%	16%

*Responses differ significantly by education level (p<.05).

Letters indicate significant differences between individual education level groups.

One-half of caregivers considered the messages on the package to mean that this drink gives toddlers nutrition that they wouldn't get from other sources, and 43% thought they mean it is a good supplement when a toddler doesn't want to eat. Approximately one-third indicated these messages mean the product is necessary for toddlers to have correct nutrition and that it is better for toddlers than plain whole milk. Fewer than 20% indicated that they mean this product is a good replacement for fruits and vegetables or that it will make toddlers smarter. However, the likelihood that parents believed that the messages mean it is a good replacement for fruits and vegetables increased with level of education. There were no other differences by caregiver education in perceived meaning of these statements.

Discussion

These findings provide additional support for concerns about potentially misleading claims on infant formula and toddler milk labels. The U.S. Surgeon General's 2011 call to action to support breastfeeding recommended actions to ensure that formula claims are truthful and not misleading, including research on how consumers perceive the claims.¹² In this study, the majority of caregivers perceived that the messages on these product packages convey information that is contrary to recommendations from healthcare providers. For example, more than 70% of caregivers surveyed agreed that the messages on the infant formula package mean that this product is as good as breastmilk. Thus, these messages contradict public health efforts to communicate the superiority of breastfeeding. Similarly, more than one-half of caregivers of toddlers agreed that the messages on the toddler milk label mean that it provides nutrition not available from other sources, while approximately 30% thought they mean the product is necessary for toddlers' nutrition and/or better for them than plain whole milk. In addition, 70% agreed that the product is a good drink for toddlers, although experts do not recommend toddler milks or the added sugars they contain for young children.^{13,14}

Furthermore, despite the lack of scientific evidence to support benefits from the added ingredients in infant formula,^{15,16} more than 40% of infant caregivers agreed that the formula would benefit their baby's mental development and/or keep them from getting sick as often. Lending support to concerns that toddler milk labels may imply that the product is intended for infants under 12 months, more than one-half of toddler caregivers agreed that the toddler milk was a good product for babies, in addition to toddlers. Also notable was the finding that caregivers with a college degree were more likely to agree with some incorrect meanings, including that toddler milks are for babies and that infant formulas will "keep my baby from getting sick as often," or "make my baby smarter." Therefore, the tendency to interpret implied (but not directly stated) benefits from these claims does not appear to be due to literacy level. This finding supports other research showing that the use of scientific and technical language in formula marketing is highly persuasive.¹⁷

Policy implications

Follow-up research should assess whether the messages on infant formula and toddler milk packages are believable and how they affect consumer behavior. However, these findings provide preliminary evidence that regulatory actions are needed to address misleading and potentially deceptive claims on infant formula and toddler milk products.

The U.S. Food and Drug Administration (FDA) has the authority over food standards and labels, while the U.S. Federal Trade Commission (FTC) has the authority to address false, unfair or deceptive marketing.¹⁸

The FDA has issued draft guidance for manufacturers regarding structure/function claims on infant formula,¹⁹ but requirements for toddler milk claims (including nutrient content, structure/function, qualified health and health claims) are currently the same as those for all food and drink products. The FDA could establish stricter requirements for claims on all products intended for children under age 3, and it could encourage manufacturers to voluntarily provide data to support structure/function claims on toddler milks, as well as infant formula. The FTC could use its authority to bring individual cases against companies that convey misleading and deceptive messages in their marketing.

Conclusion

Previous research has documented the prevalence of nutrition-related and child development claims on infant formula and toddler milk packages, and experts have raised concerns that these claims may discourage breastfeeding and create the impression that young children require commercial products to get proper nutrition. These findings demonstrate that the majority of infant and toddler caregivers surveyed do perceive common marketing messages to mean that infant formula and toddler milk products provide additional nutrition and unsubstantiated benefits for young children, and support the need for greater regulation to address these misleading and potentially deceptive marketing claims.

Appendix: Methods and Measures

This cross-sectional analysis used an online survey of parents with babies (6-11 months) or toddlers (12-36 months) to assess their understanding and agreement with marketing messages – including product claims – used to promote commercial baby and toddler food and drinks. The large non-probability sample (N=1,645) was recruited to obtain a diverse cross-section of participants for meaningful comparison between groups.

Survey participants

Two national online survey panels were used to recruit participants, including one panel of U.S. Hispanic households. Both panels provide their members with a variety of incentives for participation, which is entirely voluntary. Potential participants were screened to include parents or primary caregivers of at least one 6- to 36-month-old child who were primarily responsible for making decisions on what to feed their child. Quota sampling was established to approximate equal proportions of respondents by child's age (6-11 months, 12-23 months, 24-36 months) and household income (under \$40,000, \$40,000-\$74,000, \$75,000+). Additional quotas for Black and Asian parents were established for the first survey panel, and high and low levels of acculturation for the Hispanic panel.

Of the original sample of 2,585 participants, 18% were excluded for not meeting inclusion criteria and 14% initiated but did not complete the survey or had implausible or automated responses. The final dataset included 1,645 respondents, mostly female (80%), 25-44 years old, with at least some college education.

Survey design and pretest

Researchers developed a 30-minute survey delivered online (including on mobile devices) via Qualtrics survey software.²⁰ Survey items were pretested using a convenience sample of 20 parents of infants and toddlers (6-36 months old) who completed the survey and participated in one-on-one cognitive interviews, including probes to determine understanding and validity of survey items.^{21,22} The University's Institutional Review Board determined the study to be exempt.

Participant demographics

Participants reported the age and gender of their child(ren) between 6 and 36 months of age. Children with a disease or condition that requires a special diet (e.g. lactose intolerance) were excluded. Parents with more than one eligible child were prompted to select the child with the most recent birthday and answer questions about that child.

Participants also reported their own gender, age, marital status, highest level of education, race/ethnicity, and household income. Racial/ethnic groups were categorized as non-Hispanic White, non-Hispanic Black, Hispanic, Asian and mixed or other. Additionally, participants who selected Hispanic ethnicity answered the Short Acculturation Scale for Hispanics (SASH). This validated tool provides a preferred language score ranging from 1 (only Spanish) to 5 (only English). Hispanic participants were classified as less-acculturated (score <3.0) or more-acculturated.^{23, 24}

Statistical analysis

Statistical Analysis System (SAS) software was used to analyze all data.²⁵

APPENDIX TABLE. PARTICIPANT DEMOGRAPHIC CHARACTERISTICS

	Total		Age of child					
	n	%	Infants (6-11 months)		Young toddlers (12-23 months)		Older toddlers (24-36 months)	
			n	%	n	%	n	%
	1,645	100%	555	100%	556	100%	534	100%
Parent race/ethnicity								
White non-Hispanic	537	33%	157	28%	190	34%	190	36%
Black non-Hispanic	367	22%	171	31%	120	22%	76	14%
Hispanic: more acculturated	242	15%	69	12%	84	15%	89	17%
Hispanic: less acculturated	268	16%	82	15%	72	13%	114	21%
Asian	196	12%	65	12%	80	14%	51	10%
Mixed/other	35	2%	11	2%	10	2%	14	3%
Parent gender								
Female	1,309	80%	441	79%	438	79%	430	81%
Male	322	20%	110	20%	115	21%	97	18%
Household income								
Under \$40,000	749	46%	245	44%	252	45%	252	47%
\$40,000 - \$74,000	493	30%	174	31%	159	29%	160	30%
Over \$75,000	395	24%	131	24%	143	26%	121	23%
Parent education								
High school or GED	338	21%	94	17%	116	21%	128	24%
Some college or 2-year college	585	36%	210	38%	187	34%	188	35%
College graduate or higher	722	44%	251	45%	253	46%	218	41%

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