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Circumventing the WHO Code? An observational study

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Circumventing the WHO Code? An observational study

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Abstract

Background This study compares the formula milk advertisements that appeared in parenting magazines published in two countries that have enacted measures to restrict the advertising of infant formula products in response to the international code with two that have not.

Methods Content analysis was used to compare the type and frequency of formula milk advertisements that appeared in parenting magazines collected from the USA, Canada, the UK and Australia during 2007, and to examine whether there was a relationship between these frequencies and advertising regulations.

Findings Advertisements that promoted formula products or brands occurred in all of the magazines sampled but the type of product advertised differed. Follow-on formula advertisements occurred more frequently in titles from the UK, where infant formula advertising is prohibited (RR 3.82, 95% CI 2.65 to 5.50, p<0.0001) than they did in titles from the USA/Canada where infant and/or follow-on formula advertising is permitted. Toddler milk advertisements appeared more frequently in titles from Australia, where infant and follow-on formula advertising is prohibited, than they did in titles from countries where direct-to-consumer infant and/or follow-on formula advertising is permitted. Rate ratios were as follows: UK only 0.03 (95% CI 0.01 to 0.11, p<0.0001); USA/Canada only 0.02 (95% CI 0.01 to 0.06, p<0.0001).

Interpretation Bans on the advertising of infant formula products do not prevent companies from advertising (follow-on or toddler formula). These products are presented in ways that encourage consumers to associate the claims made in them with a group of products (a product line) that includes infant formula.

What is already known on this topic

- ▸ Exposure to formula milk advertising has been associated with a shorter duration of exclusive breastfeeding and shorter overall breastfeeding duration.

- ▸ The International Code of Marketing of Breastmilk Substitutes aims to protect mothers and their infants from the marketing of breastmilk substitutes, including formula milk.
- ▸ Companies resist national efforts to implement the International Code of Marketing of Breastmilk Substitutes, whether by legislation or voluntary industry self-regulation.

What this study adds

- ▸ Formula advertisements appeared in British, Australian, American and Canadian parenting magazines regardless of regulations designed to prohibit the marketing of breastmilk substitutes.
- ▸ Line extension and brand-focused advertising reduce the effectiveness of national restrictions on the advertising of infant formula products.

Exclusive breastfeeding for the first 6 months of life followed by an extended period during which breastmilk makes a substantial contribution to a young child's mixed diet is recommended with remarkable unanimity across the globe.[1–5] Replacing breastmilk with other foods, including infant formula, is known to carry important health risks for both infants and their mothers.[6–8] Nonetheless, adherence to these recommendations is poor in Australia, Canada, the UK and the USA.[9–12]

There is some evidence that exposure to advertising for formula milk products is associated with poorer breastfeeding outcomes.[13–18] However, there is a significant gap in the literature about the effect of the regulation of breastmilk substitute advertising on breastfeeding rates. In acknowledgement of the difficulties associated with detecting an effect of advertising exposure on the behaviours of populations[9–22] and the money that is spent undertaking it, the World Health Assembly (WHA) has expressed the view that formula milk advertising is likely to influence infant feeding behaviour, and called upon advertisers to demonstrate that their advertising has no deleterious effect on breastfeeding rates.[23]

Infant formula advertising regulation and response

In 1981 the member states of the WHA adopted the International Code of Marketing of Breastmilk Substitutes (WHA 32.22), which prohibits the advertising of infant feeding products (including milk or infant formula, teas and other foods represented as suitable for infants less than 6 months old and infant feeding bottles/teats) when they are ‘marketed or otherwise represented as a partial or total replacement for breast milk’.[24]

Member states must enact national measures to give effect to this resolution. Australia restricts the advertising of any formula milk product represented as suitable for infants under a year old, including follow-on formula, by a self-regulatory instrument known as the Marketing in Australia of Infant Formulas (MAIF) Agreement.[25] The UK prohibits the advertising of infant formula products—but not follow-on formula products—to the general public,[26] and neither the USA nor Canada restricts the advertising of any type of formula milk product.

National efforts to regulate the advertising of infant feeding products are often met with resistance from infant formula manufacturing companies.[27–35] Furthermore, when national measures are taken to prohibit the marketing of infant formula (suitable for use as sole nutrition from birth), 'follow-on formula' (suitable for use as a partial nutrition from 4 to 6 months) is often promoted aggressively.[27 30] The manufacturers of these products argue that follow-on formula escapes the definition of 'breastmilk substitute'—and can be freely advertised to mothers—because it is represented as suitable for infants at the age when complementary feeding is recommended in addition to breastfeeding.[36] 'Toddler milk' is similar to 'follow-on formula' in that it is presented in packaging very similar to that of infant formula, but escapes the legal definition of 'infant formula' and can be advertised freely where infant and follow-on formula advertising is prohibited (as in Australia).

It has been suggested that these companies might be advertising follow-on formula products including toddler milks in a manner calculated to circumvent national regulations devised to restrict the advertising of infant formula products.[27 30 37–40]

Evidence suggests that women do not differentiate between advertising for toddler milk or follow-on formula and advertising for infant formula. The results of an Australian study indicated that women identified toddler milks (a type of follow-on formula) as part of a product line that they described collectively as 'formula', and which included infant formula.[37] This finding is consistent with findings from a British study indicating that mothers perceived follow-on formula advertisements to be advertising infant formula.[38 39]

In this context it is useful to examine the advertising strategies employed in response to national prohibitions on the advertising of some formula milk products.

Aims

This study utilised content analysis to determine whether prohibition of the advertising of one or more formula milk products (such as the prohibition of infant formula advertising, or the prohibition of infant and

follow-on formula advertising) decreased the frequency with which advertising for formula milk products or brands appeared in parenting magazines. It also examined whether toddler milk advertisements appeared more frequently in parenting magazines published in Australia, where the advertising of infant and follow-on formula products are prohibited, than they did in those published in countries where the advertising of infant and/or follow-on formula products is permitted; and whether follow-on formula advertisements appeared more frequently in titles published in the UK, where the advertising of infant formula products is unlawful, than it did in titles published in the USA and Canada where the advertising of infant formula products is permitted.

Methods

Data collection

Concurrent 12-month samples of the most widely read parenting magazines (based on 2005 Audit Bureau of Circulation and 2005/6 Morgan Readership Survey data) from Australia, the USA, the UK and Canada were collected during 2007 for analysis. The titles are displayed in table 1.

Table 1. Frequency of formula milk advertisements by type

Regulation type	Country	Title	Total pages of ads	Total formula	Infant formula	Follow-on formula	Toddler milk	GUM	Formula brand
Infant formula ads unlawful	UK	Prima Baby and Pregnancy	994	76*	0	47	0	14	29
		Practical Parenting UK	846	45*	0	41	0	13	4
		Mother & Baby UK	1504	64*	0	34	0	13	30
		Totals	3344	185	0	307	0	40	63
No regulation	Canada	Today's Parent	1289	33*	28	24	3	0	1
	USA	Parents	1473	27	19	8	0	0	0

Regulation type	Country	Title	Total pages of ads	Total formula	Infant formula	Follow-on formula	Toddler milk	GUM	Formula brand
		Parenting	1166	36	34	2	0	0	0
		Totals	3928	96	81	34	3	0	0
Voluntary prohibition of infant formula and follow-on formula ads	Australia	Australian Practical Parenting	667	19	0	0	18	0	1
		Australian Parents	306	17	0	0	13	0	4
		Totals	1280	36	0	0	31	0	5

* Infant formula, follow-on formula, toddler formula and/or growing up milk (GUM) are frequently presented in a single ad. Totals are therefore less than the sum of the other categories. Ads spanning two pages were counted as one.

Blocks of advertising for any product or service one sixth of a page or larger were counted and tallied.

Advertisements for formula milk products or brands were identified and classified.

Advertisements that promoted infant or follow-on formula, toddler milk, growing up milk, ‘mothers’ club', telephone or online information service or proprietary ingredients (such as patented proteins or probiotics) and shared a brand identity with infant formula products were included in the definition of formula advertisements. If there was any confusion about whether or not these products or services were part of a formula range, confirmation was sought from company websites.

Formula advertisements were coded using four categories (table 2). The categories were not mutually exclusive and each advertisement was coded for all of the formula milk types it depicted. When a single advertisement promoted more than one type of formula milk that advertisement was only counted as one instance of advertising.

Table 2. Formula advertising coding frame

Code	Description
Infant formula	A product based on milk or other edible food constituents of animal or plant origin, which is suitable for use as the sole source of nourishment for infants from birth

Code	Description
Follow-on formula	A product based on milk or other edible food constituents of animal or plant origin, which is suitable for use as the principal liquid source of nourishment in a progressively diversified diet for infants aged from 6 months who are not breastfed
Toddler milk	A fortified milk-based product only suitable for children more than a year old that is packaged in a container that is the same size and shape as a container that contains infant formula and marketed as part of a line of formula products
Brand advertising	An advertisement that bears the same brand marker(s) as an advertisement for infant, follow on or toddler formula but does not advertise a milk product. These advertisements included advertisements for helplines, mothers' clubs, websites and proprietary ingredients

Data analysis

Poisson regression was used to test three hypotheses:

1. H_1—The regulatory environment had no effect on the frequency of all types of formula advertisements after adjusting for the total number of pages of advertising.
2. H_2—The regulatory environment had no effect on the frequency of follow-on formula advertisements after adjusting for the total number of pages of advertising.
3. H_3—The regulatory environment had no effect on the frequency of toddler milk advertisements after adjusting for the total instances for formula advertising.

The Poisson models were fit to the counts and use the log of the denominators (total pages of advertising or total instances of formula advertising) as offset variables. Data analysis was conducted using STATA data analysis and statistical software version 11.

Reliability

In order to assess the reliability of the coding frame the same researcher recoded a randomly selected 25% sample of each title 2 months after the initial data collection (stability). In addition a second researcher, not associated with the project, coded a randomly selected 25% sample of each title (reproducibility). Counts of formula advertising were identical. Bland–Altman limits of agreement were calculated for counts of total pages of advertising. Although the limits of agreement could have been smaller, they indicate that appropriate stability (−5.3, 3.3) and reproducibility (−6.3, 4.5) was achieved, given the required purpose.

Results

Advertising comprised between 45% and 60% of the magazines' content. Formula advertisements were generally large and prominent. Most instances (91.8%) of formula advertising were full-page advertisements.

Table 1 illustrates the frequency with which the five types of formula advertisements (infant formula, follow-on formula, toddler formula, growing-up-milk and formula brand) occurred in each title across the year.

All formula advertisements

Poisson regression revealed that there was a statistically significant difference in the number of formula advertisements that occurred in each of the three regulation groups (no regulation, infant formula ads unlawful and voluntary prohibition of infant formula and follow-on formula ads) after adjusting for the total number of advertising pages (χ^2=41.99, p<0.0001). Thirty-three per cent fewer formula advertisements appeared in titles from the no regulation group than in those from the voluntary prohibition of infant formula and follow-on formula ads (RR 0.67, 95% CI 0.46 to 0.99), and 46% more formula advertisements appeared in titles from the infant formula ads unlawful group than in those from the voluntary prohibition of infant formula and follow-on formula ads group (RR 1.46, 95% CI 1.03 to 2.09).

Infant formula advertisements

Eighty-one direct advertisements for infant formula products were observed. As expected, all of these appeared in titles that were published in the USA and Canada (no regulation). Further analysis of this subgroup was thus not feasible.

Follow-on formula advertisements

One hundred and fifty-six follow-on formula product advertisements were observed. Of these 122 appeared in British titles (infant formula ads unlawful) and 34 in titles published in the USA or Canada (no regulation).

Poisson regression was used to determine whether follow-on formula product advertisements occurred more frequently in British titles (infant formula ads unlawful) than they did in titles from countries where infant formula product advertisements are permitted, after adjusting for the total pages of advertising. Follow-on formula advertisements appeared almost four times more frequently in titles from the UK (RR 3.82, 95% CI 2.65 to 5.50, $p<0.0001$) than they did in titles from the no regulation group.

Toddler milk advertisements

Thirty-four advertisements that promoted only toddler milks were observed. Three advertisements for toddler milk were found in the Canadian titles (no restriction) and 31 in Australian titles (voluntary prohibition of infant formula and follow-on formula ads).

Poisson regression determined that toddler milk advertisements occurred more frequently in Australian titles (voluntary prohibition of infant formula and follow-on formula ads) than they did in titles from countries where infant and/or follow-on formula product advertisements are permitted, after adjusting for the total number of (any) formula advertisements. There were 97% fewer toddler milk advertisements in titles from the infant formula ads unlawful group (RR 0.03, 95% CI 0.01 to 0.11, $p<0.0001$) and 98% fewer toddler milk advertisements in titles from the no regulation group (RR 0.02, 95% CI 0.01 to 0.06, $p<0.0001$) than occurred in titles from the voluntary prohibition of infant formula and follow-on formula ads group. Framed another way, toddler milk advertisements appeared over 33 times more frequently in titles from Australia (where neither infant nor follow-on formula advertising is permitted) than they did in titles from the UK (where follow-on formula advertising is permitted) and 50 times more frequently in Australian titles than they did in titles from Canada (where both infant and follow-on formula advertising is permitted).

Formula brand advertisements

Advertisements promoting ingredients or services associated with infant formula brands only occurred in titles published in the UK and Australia (infant formula ads unlawful and voluntary prohibition of infant formula and follow-on formula ads groups). Advertisements that promoted marketing strategies such as a telephone/email helpline, a website, or a ‘mum's club’ that shared a brand identity with a line of formula

products only appeared in British magazines and advertisements for proprietary ingredients (Nestle bifidusBL) only in Australian titles. These are shown in table 1 under the column labelled ‘brand’.

Discussion

Neither the British statutory instrument nor the Australian MAIF agreement reduced the frequency with which formula advertisements per se appeared in parenting magazines. In fact, formula advertisements appeared with greater frequency in the British and Australian titles than they did in the American and Canadian ones. However, both the Australian and British regulations appeared successfully to prevent the advertising of certain formula milk products. This pattern is consistent with the observation that follow-on formula product promotion is common in countries where steps have been taken to implement the international code.[27 30 40–43]

While this may suggest that the regulations are counterproductive, other explanations are more plausible. First, it is more likely that there are more direct advertising opportunities (such as paying hospitals to distribute infant formula samples to new mothers) available to companies where there are no restrictions placed on the advertising of formula milk products. Second, it will be argued here that when the advertising of one or more formula milk products is prohibited, advertising for a different product using the same brand identifiers seems to take its place.

The ubiquity with which formula advertising occurs is concerning. Although there is a significant research gap in this area, several studies have found a relationship between exposure to formula advertising and declines in breastfeeding initiation, duration or intensity. Research conducted in developed countries has found that mothers who see formula advertising during their pregnancies or shortly after birth were more likely to be using infant formula at 0–2 weeks and 8–10 weeks and less likely to be breastfeeding at all time points.[18 44 45] Furthermore, Filipinas who were able to recall seeing a formula milk advertisement were less likely to intend to breastfeed and were less likely be breastfeeding by day 2 of their infants' lives.[15] Those who were able to recall seeing a formula milk advertisement were also less likely to be breastfeeding exclusively when their infants were 2, 4 and 6 months of age.[16] Similarly, St Vincent mothers' total

breastfeeding duration decreased by 19 days and the introduction of non-human milk occurred 3.5 days earlier for every infant food brand name she could recall.[14]

Advertising for follow-on formula, toddler milk or any other product or service that shares a brand identity with infant formula is likely to influence infant feeding behaviour in much the same way as advertising for infant formula does because consumers do not differentiate between them.[37 38] Therefore, the reduction in frequency of infant formula (or infant and follow-on formula) advertising observed in the UK and Australia is unlikely to mitigate the effect of formula milk advertising per se on infant feeding practices.

It is likely that the consumer perception that advertisements for any formula milk product or service is an advertisement for infant formula is the result of a deliberate advertising strategy. Both follow-on formula and toddler milk products are clear examples of a strategy described in the marketing literature and known as line extension.

'Line extensions occur when a company introduces additional items in a given product category under the same brand name, such as new flavours, forms, colors, ingredients, or package sizes.'[46] Importantly, line extensions offer consumers the perception that products that share a brand are the same in most important ways. For example, Coca-Cola uses line extension to present Diet Coke and Coke Zero as the same as Coca-Cola in every way (colour, flavour, packaging, price, texture) except that they do not contain sugar.

Line extension enables advertisers to focus their advertising on brand attributes common to all products bearing their brand in the knowledge that consumers will apply what they have learnt about one product to all the others in that line.[47] Sixty-nine advertisements for related services (eg, telephone helplines, marketing clubs, free gifts and websites) or proprietary ingredients (such as Nestle's Bifidus BL) that shared a brand identity with an infant formula product appeared in magazines from the UK and Australia. Only one such advertisement appeared in magazines from the USA or Canada. This suggests that formula milk advertisers are using line extension to enable them to evade national advertising restrictions.

The results of this study are consistent with the results of other efforts to restrict the advertising of certain products (such as tobacco) in the interests of public health, which demonstrate that companies faced with restrictions on the advertising of their products will use indirect advertising strategies to enable them to continue promoting the use of their products.[48–50] Infant formula manufacturers in Australia appear to be using toddler milk advertisements to enable them to promote groups of products that include those subject to the MAIF agreement without ever referring to them directly; just as follow-on formula advertisements appear to be used to mitigate the British legislation. It is worth noting that the industry's own trade-based press has reported this observation[51] and the WHO has encouraged national governments to re-examine the advertising of follow-on milks in the light of consumer perceptions.[52]

Limitations

This study has several limitations. First, practical considerations limited the study to print advertisements published in parenting magazines. A more thorough examination of other advertising media (television, internet, wider print media, etc) might have revealed a different pattern of formula advertising. Second, although the quality of national data about infant feeding practices is inconsistent, it appears that infant feeding practices may differ among the four countries examined here.[9–12] Most significantly it appears that more British women cease breastfeeding by 6 months than women from the USA, Canada or Australia (but this may reflect differences in data collection practices), and this might influence advertising patterns. Conversely, more aggressive formula advertising might contribute to the greater use of formula milk products (and so lower breastfeeding rates) in Britain. Also, because autonomous nations are responsible for regulating advertising and no two sets of regulations are identical, two of the regulation groups included titles from only one country. It is possible that the differences in formula advertising frequency are attributable to factors other than the regulations, factors that are unique to each country.

Conclusion

Restrictions on the advertising of infant formula products (including follow-on formula products) do not appear effectively to reduce direct to consumer formula advertising per se. Line extension is used to encourage consumers to apply what they learn about formula milk from follow-on formula or toddler milk

advertisements to infant formula. In this way the efficacy of the MAIF agreement and the British statutory instrument is diminished.

Current efforts to prohibit the advertising of formula milk products in accordance with the intent of the international code have not resulted in ethical marketing practices and are characterised by self-interest and hostility on both sides of the debate.[53] It is time for national governments to reconsider the intent of the international code and to devise effective, transparent and independent processes by which the advertising and promotional practices of formula milk manufacturers and importers can be effectively regulated in the public interest.

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Footnotes

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