

# Pitfalls of the self-regulation of advertisements directed at children on Mexican television

F. L. Théodore,<sup>1</sup> L. Tolentino-Mayo,<sup>1</sup> E. Hernández-Zenil,<sup>1</sup> L. Bahena,<sup>1</sup> A. Velasco,<sup>1</sup> B. Popkin,<sup>2</sup> J. A. Rivera<sup>1</sup> and S. Barquera<sup>1</sup>

<sup>1</sup>Center for Research in Nutrition and Health, Instituto Nacional de Salud Pública, Cuernavaca, Morelos, Mexico; <sup>2</sup>Carolina Population Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA

Address for correspondence:  
L Tolentino-Mayo, Instituto Nacional de Salud Pública, Universidad No. 655, Colonia Santa María Ahuacatitlán, Cerrada Los Pinos y Caminera, C.P. 62100, Cuernavaca, Morelos, Mexico.  
E-mail: mltolentino@insp.mx

Received 20 October 2015; revised 21 March 2016; accepted 4 April 2016

## Summary

**Background:** There are no academic studies that characterize advertisements directed at children from the companies that signed the self-regulation.

**Objective:** The aim of this paper was to assess the extent and nature of food advertisements and the persuasive techniques used to market unhealthy food and beverages (UFB) to children, by signatory companies of self-regulation.

**Methods:** From December 2012 to April 2013, 600 h of programming were recorded on the four broadcast public television channels in Mexico with the highest rating nationwide. Marketing aimed at children directly (broadcast on children's programmes or advertisements with a specific appeal to children) or indirectly (aimed at other target audiences with messages or scenes that link children to the product) were considered.

**Results:** About 74.9% (2148) of the total food and beverage advertisements tried to influence children directly and indirectly. Companies, which had signed the self-regulation, focused 92.7% of their advertisements on UFB. Of the total number, 23.9% were aimed at children, 7.1% at adolescents, 12.5% at parents and 56.2% at the general public. Most of these advertisements were broadcast on movies (29.8%), cartoons (18%), soap operas (17.6%), entertainment shows (17.2%) and sports programs (6.4%).

**Conclusion:** Despite the self-regulation of television marketing, children were surrounded by UFB advertisements. Signatory companies influence children indirectly by targeting other audiences and by marketing during family television programs, which are also watched by children.

**Keywords:** Child, marketing, obesity, television.

## Introduction

There has been a major trend against the marketing of unhealthy food and beverages (UFB) to children by international agencies and governments in countries such as England, Peru and Chile. The World Health Organization backed up by the World Health Assembly, US Institute of Medicine and many other governments have adopted measures for controlling marketing (1–3). These initiatives came after the World Health Organization published recommendations in 2004 (4), which led countries to focus primarily on limiting the hours during which marketing was permitted on children's television (5,6) and prohibiting the use of characters, promotions and contests, known to enhance the persuasive power of advertising. In Latin America, a group of experts convened by the Pan American Health Organization

(PAHO) (7), made evidence-based recommendations that indicated the need to protect children from marketing until the age of 16 years (instead of age 12 years) and recommended that only water and whole foods be permitted to be marketed to children.

In response to the global effort to address poor diets and reduce obesity, and related comorbidities, the food sector created the International Food and Beverage Alliance and, later, produced a global commitment for responsible food marketing (8). Within this context, major transnational food companies, established self-regulation (SR) (9). According to most scholars, these voluntary codes were implemented to bypass national laws and regulations (10,11).

Self-regulation of the food and beverage industry has been evaluated in the USA, Europe and Australia, and research indicates that SR is often only partially implemented (12–16) and/or has very limited impact

(17), mainly because of few companies signing the pledges (16) and a lack of nutritional criteria to determine which products can be marketed to children (18). This variety of elements makes the pledges weak. However, no rigorous evaluation of SR has been conducted in any low-income or middle-income country. A second issue related to the industry's SR is the definition of children's television marketing, which includes only programs designed for children, as well as children's television channels. However, children also watch an array of television programs, which are part of adult television programming (19–21).

In 2009, the industry introduced SR in Mexico, a country with the world's highest obesity prevalence. The biggest companies in Mexico launched an SR agreement for marketing aimed at children and introduced it as 'an adjunct tool for promoting healthy lifestyle habits, based on a proper diet and an active lifestyle, thereby contributing to the prevention of overweight and obesity' (22). However, this initiative fails to provide any new protection beyond Federal Law on Radio and Television and concerns only children under 12. SR only applies to schedules and programs predominantly aimed at children (without further specification). It authorizes the promotion of all kinds of food and beverages, regardless of nutritional values, and does not prohibit the use of persuasive techniques. The SR introduced in Mexico does not consider the specific hours during which marketing should be regulated to children. When the study was conducted, 35 companies had signed the SR and 11 had not.

Given the current context in which the Mexican food industry is participating in the SR, the aim of this paper is to assess the extent and nature of food advertising and the marketing persuasion techniques of UFB aimed at children, by companies that are signatories of the SR.

## Methods

### Recording and classification

A total of 600 h of television were recorded, between December 2012 and April 2013, on the four broadcast television channels with the highest rating nationwide. None of these were children's television channels. The exact sampling was undertaken between 7 am and 10 pm, over 10 days per channel, covering 5 days during the holiday period and 5 days during the school period, with one weekend recording per period.

The recording was conducted with four television adapters (Hauppauge and Win TV-HVR-950Q models) in digital mode for their subsequent

codification, quantification and analysis. Utilizing the coding system and a manual developed by Yale University and Rudd Center for Food Policy & Obesity (23), the commercials were identified and classified using six categories. The categories are as follows: #1 information required to identify the product, #2 featuring of characters (i.e. licensed characters, cartoon, celebrities, health/nutrition professionals and anonymous person) in the advertisement, #3 presence or absence of explicit promotional gifts (gifts and raffles), #4 product descriptions (e.g. nutrient content), #5 claims for beneficial effects upon consumption and #6 dietary patterns within the advertisement. Four of these are considered in this article (#1, #2, #3, #5).

Three previously trained coders classified the advertisements, according to the methodology. Inter-coder reliability was assessed using a 30-min test time of television recording and was shown to be high ( $\kappa = 0.934$ ,  $p < 0.05$ ). Furthermore, to ensure the quality of the operation, weekly meetings were scheduled to homogenize codification of complex advertisements. The information was entered directly into a Microsoft Excel worksheet. All descriptive analyses were carried out using SPSS version 20.0 for Windows (SPSS Inc, Chicago, IL). A Pearson chi-square was used to compare the proportion of ads by type of product and other characteristics, with  $p < 0.05$  considered to be statistically significant.

### Definition of the categories

#### *Marketing directed at children*

Usually, advertisements are considered to be directed at children (24) when (i) the product or packaging and/or (ii) the advertisement (through themes related to fantasy, mystery or adventure, or use of colorful characters and gifts) aims to appeal to them, and/or when (iii) an advertisement is broadcast on children's programming or when a child audience reaches a pre-established minimum level. The Mexican SR is based on this classical definition of marketing directed at children. However, at least three situations show the limits of this definition. First, children do not only watch television programs broadcast for them (7); secondly, they are especially attracted to advertisements directed at teenagers (25); thirdly, the little information available about the nutritional quality of products in Mexico and the low average educational attainment of the population places parents in a vulnerable position when faced with persuasive marketing.

In this article, advertisements aimed at children *directly* and those aimed at them *indirectly* will be

considered. An advertisement is direct when it is broadcast during children's programs or when advertisements or packages aim to appeal to that audience. It is indirect when it is not directly aimed at children, but the ad contains messages or scenes that link children to a specific product, for example, messages that extol the benefits of a product for children (e.g. improved growth and development) or display scenes that show children consuming the product and also attempt to influence children's consumption habits through their parents.

### Target audiences

The target audiences for advertisements were categorized as children, adolescents, parents and general audience. The target audience of 'children' corresponds to the 'traditional' definition of marketing directed at children previously presented. In the case of marketing directed at adolescents, we considered ads where the characters were portraying adolescents, and the context of the ad was appealing to such age group (e.g. high schools and concerts). Ads directed at parents were those promoting consumption among children (e.g. juice boxes and

snacks) but advertised to parents. Lastly, ads aimed at a general audience were not directed at a specific audience and announced products such as cereal bars and loaf bread. In this last category, we only considered ads that showed children consuming the product.

### Food and beverage

Categories included in this study were developed in two stages. First, the advertisements were coded according to the 'big five' typology (groups 1 to 5), which classifies the main products advertised to children around the world (26). We also considered the two products whose promotion to children was authorized by PAHO experts; plain water (group 9) and whole food, which contain no sweeteners, sugar, salt or added fat. Basically, whole foods are considered fruit, vegetables, whole grains, low-fat dairy products, lean fish and meat, poultry, eggs, nuts and seeds and legumes (7). However, because there were no advertisements of whole products that sought to influence children's consumption habits, they were not included in our typology (Table 1). Next, we reviewed the remaining food

**Table 1** Products included in food groups

	Group	Examples of products
1	Sweet snacks	Pastries, cakes and cookies Chocolate Ice pops Candies (gum, caramels, etc). Jellies
2	Salty snacks	Sausage products and meat substitutes (processed meat) French fries and peanuts (commercial) Cheese
3	Sugar-sweetened beverages	Soft drinks (cola flavored, different fruit flavors, etc.) Powder sweeteners for water Soy-based beverages Processed juices Flavored water
4	Sugar-sweetened cereals	Sugar-sweetened cereals for breakfast
5	Fast foods	Sandwiches, pizza, hamburgers, combination packs (soft drinks, French fries and hamburger)*
6	Dairy products without sugar	Full-fat milk
7	Dairy products with sugar	Fermented milk Liquid and solid yogurt Flavored milk with sugar
8	Commercially processed loaf bread made with refined flour	Different bread products <sup>†</sup>
9	Plain water	

\*Products advertised by fast-food chain restaurants.

<sup>†</sup>Varieties of processed white loaf bread (e.g. regular loaf, toast and fortified loaf).

advertisements not included in these categories. From these, we identified three new categories of food advertisements aimed at promoting consumption by children [i.e. dairy products with and without sugar and bread made with refined flour {products 6–8}]. All these food categories, except whole foods and water, were considered ‘unhealthy’.

### Television programs and audiences

In order to classify the television programs, we used the criteria and definitions established in the New Regulation DOF 10-10-2003 of the Regulatory Mexican Federal Law of Radio and Television. The audience classifications included in the Federal Law of Radio and Television are as follows: (i) ‘A’ for general audience; (ii) ‘B’ for 12 years of age; (iii) ‘B-15’ for 15 years of age and over and (iv) ‘C’ for 18 years of age and over.

## Results

Out of a total of 12311 registered commercials (excluding television channel self promotion and government communications) collected during the study period, 23% (2866 advertisements) were for food, beverages and restaurants. Of these, 74.9% (2148) tried to influence children directly and indirectly. A total of 86.1% of these advertisements (1850) were from the set of global and national companies that signed the SR agreement (Table S1). Eleven companies, which did not sign the SR agreement, advertised their products to children with a total of 298 advertisements; sweet snacks (54.4%), fast food meals (26.8%) and dairy products with added sugar

(10.4%) were the products predominantly advertised. The companies that did not sign the SR concentrated 99.7% of their ads towards UFB, whereas the ones that signed focused 92.7% on UFB (Table S1). The three most advertised products directed at children from the SR companies were sweet snacks (39.3% of the total of F&B advertisements), salty snacks (14.5%) and sugar-sweetened beverages (SSB) (13.4%) ( $p < 0.0001$ ) (Table S1).

## Audiences

The remaining analysis focuses exclusively on the advertisements of the SR companies. From the total number of advertisements affecting children, only 23.9% were openly directed at them. The rest targeted adolescents (7.1%), parents (12.5%) or the general public (56.2%) (calculated from Table 2).

Advertised products varied according to the type of audience targeted. The three most advertised products marketed to children’s audience were sweet snacks (63.4%), sugar-sweetened cereals (16%) and salty snacks (14.9%). The three most advertised products for adolescents were salty snacks (40.6%), dairy products with sugar (32.3%) and SSB (17.3%). The most advertised products targeting parents were dairy products with added sugar (25.3%), sweet snacks (21.9%) and dairy products without sugar (15%). In the case of the general public, the most frequent products advertised were sweet snacks (32.4%), SSB (23.2%) and salty snacks (14.6%). Sweet and salty snacks were among the most advertised products in the three target groups. Neither water nor whole food products were found among the most advertised products for any audience ( $p < 0.0001$ ) (Table 2).

**Table 2** Distribution of the commercials from companies that signed the self-regulatory agreement according to type of products and audience-targeted message

Type of products	Audience-targeted message				Total <i>n</i> (%)
	Children <i>n</i> (%)	Adolescents <i>n</i> (%)	Parents <i>n</i> (%)	General audience <i>n</i> (%)	
Sweet snacks	281 (63.4)	13 (9.8)	51 (21.9)	337 (32.4)	682 (36.9)
Salty snacks	66 (14.9)	54 (40.6)	29 (12.4)	152 (14.6)	301 (16.3)
Sugar-sweetened beverages	0 (0)	23 (17.3)	10 (4.3)	242 (23.2)	275 (14.9)
Sugar-sweetened cereals	71 (16)	0 (0)	12 (5.2)	0 (0)	83 (4.5)
Fast food	12 (2.7)	0 (0)	0 (0)	82 (7.9)	94 (5.1)
Dairy products (without sugar)	4 (0.9)	0 (0)	35 (15)	24 (2.3)	63 (3.4)
Dairy products (with sugar)	9 (2)	43 (32.3)	59 (25.3)	75 (7.2)	186 (10.1)
Commercially processed loaf bread (made with refined flour)	0 (0)	0 (0)	32 (13.7)	34 (3.3)	66 (3.6)
Plain water	0 (0)	0 (0)	5 (2.1)	95 (9.1)	100 (5.4)
Total	443 (100)	133 (100)	233 (100)	1041 (100)	1850 (100)

## Types of television programs used to market food products to children

Food and beverage marketing directed at children focused on five main types of programs, namely, movies (29.8%), cartoons (18%), soap operas (17.6%), entertainment programs/talk shows (17.2%) and sports programs (6.4%) (not presented in table). Consistent with the previous results, sweet snacks were the most advertised product during cartoons (53.8), soap operas (33.3%), entertainment programs (33.3%) and movies (35.8%). Salty snacks (37%) were the most heavily advertised only in the case of sports programming. SSBs were among the three most advertised products during sports programs (12.6%), soap operas (23.9%), entertainment programs (21.3%) and movies (14.1%) (Fig. 1).

## Marketing strategies

### Special offers

Approximately 25.1% ( $n=465$ ) of all commercials presented a special offer. The main products advertised with special offers were as follows: sweet snacks (37.6%), salty snacks (28.8%) and fast-food (13.1%) (Table S2). The two most frequently used strategies were gifts and contests with 41.3% and 20% of the total number of special offers, respectively (not presented in Table S2). At the time of the study, innovative special offers like Internet campaigns and downloadable music showed very low percentages with only 1.3% and 4.5%.

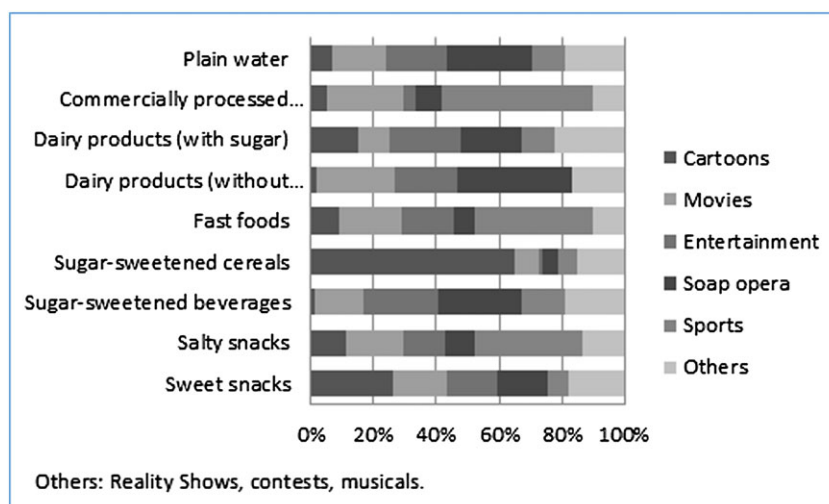
## Characters

Cartoons and famous personalities were used in 1636 advertisements (88.4% of the advertisements from companies that signed the SR agreement). Of the advertisements featuring characters, 39.3% promoted sweet snacks, 15% SSBs and 14.8% salty snacks (Table S2). The primary characteristics observed in food and beverage marketing on television are described in detail in Table S3.

## Discussion

The large majority of food and beverage commercials targeting children were from Mexican and global companies that signed the SR and were generally leaders in their respective market sectors. Non-signatory companies were all national. Both signatory and non-signatory countries primarily promoted UFB (92.7% and 99.7%, respectively). In the light of this result, the commitment of promoting healthy lifestyles (as established by the SR) conflicts with the excessive marketing of UFB. If we had maintained the *traditional* definition of marketing aimed at children, 76.1% of the commercials targeting children would have been omitted from our analysis.

The three most advertised products by the signatory companies were sweet snacks, salty snacks and SSBs. However, from the total number of advertisements, only 23.9% were directly aimed at children. The three most advertised products directed at the child audience were sweet snacks, sugar-sweetened cereals and salty snacks. In a study published, the foods most frequently advertised on



**Figure 1** Distribution of the commercials from companies that signed the self-regulatory agreement according to type of programs and broadcasting schedule. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Mexican television were SSBs, sweets and cereals with added sugar (27). National and international pressure against SSBs, which resulted in the adoption by multinational companies (e.g. Coca Cola) of commitments (18) not to promote their products to children, could explain why advertisements of these products are no longer aimed directly at child audiences. However, this does not mean that children are no longer surrounded by these advertisements.

Most ads were broadcast to other audiences and during non-children's television programs, such as movies, soap operas, entertainment programs and sports, which children also watch. In a study conducted earlier in a nursery school, children and mothers reported watching soap operas together (19). More recently, in a nationally representative survey, primary schoolchildren were interviewed about the type of programs they prefer to watch; the most popular programs were as follows: cartoons (81.9%), television series (46.2%) and soap operas (44.2%) (20). Their exposure to television is high, because 80% of the children interviewed admitted to watching television throughout the week, including at night (38.4%).

Finally marketing directed at children from companies having signed the Mexican SR is characterized by the use of special offers (gifts, contests, etc.) and characters. In summary, under SR, children are still surrounded by extremely persuasive marketing strategies and to advertisements for UFB.

Our findings showed that the SR agreements failed to adhere to PAHO experts' recommendations notably because of their lower age of protection (under 12 years rather than 16 years), massive promotion of UFB and their permissiveness with special offers (gifts, contests, etc.) and characters.

Academics and food industry researchers carried out a systematic review of 25 studies to examine the impact of the food industry SR in the USA, Australia and Canada. Eleven of the 18 studies by academics reported that SR did not have the desired impact on the majority of outcome measures (i.e. exposure, number of ads per product category and frequency and proportion of core and non-core food ads). However, all seven studies carried out by industry representatives 'had the desired impact for all of the outcomes reported' (28).

Because of the lack of independent pre and post SR data, in this study, we were not able to establish failure or success of the Mexican SR. However, as noted previously, we have identified a set of elements that enable us to conclude that children are still surrounded by advertisements for UFB, directed at other audiences and during non-children's television

programs. Compared with other SR experiences (16), the Mexican private sector managed to incorporate the main companies that produce and broadcast food and beverage advertisements to children. However, this achievement does not represent greater protection for children against UFB marketing. These kinds of advertisements are now widespread in a variety of programs and aimed at different audiences.

In 2014, the Mexican government implemented regulations on food and beverage marketing to children on television and at movie theaters. For television marketing, this regulation only focuses on marketing directed at children between 14:30 and 19:30 during the week and between 07:00 and 19:30 during the weekend during children's programming (29). A significant number of advertisements attempting to influence children, observed in our research, would not have been covered by the present government regulations.

While the new marketing regulation during children's television programming is a first step, our research shows that the focus must be on all television programs with marketing that promote UFB to children directly and indirectly.

However, the results of this study support the concerns regarding the marketing of food and beverage products that are prohibited during schedules and programs targeted at children but are allowed during programs such as soap operas, sports programs and movies. In light of the results, government regulations should focus on all television advertisements aimed directly and indirectly at children.

The lack of marketing data in the scientific literature in Mexico and Latin America, the presence of important methodological differences among studies (definition of the field of study, considered schedules), the lack of longitudinal studies and the temporal variation of marketing in Mexico (30) are the main barriers to tracking over time the transformations of marketing aimed at children. Therefore, our study could not measure over time the impact of the SR on food and beverage marketing. Our primary limitation was a lack of access to expensive information on audience measurement and audience peaks, which limited program evaluation highly viewed by children.

In conclusion, over this period, SR companies continued to influence the food consumption of children through other audiences (adolescents, adults, general public) and non-children television programs that children watch and prefer. The Mexican experience confirms the limits of SR, and its non-adherence to international recommendations, which have already been demonstrated in other countries.

## Conflict of Interest Statement

None declared.

## Acknowledgement

This study was funded with support from Bloomberg Philanthropies (number project: 1-1122-6849).

## References

1. Cairns G,KA, Hastings G. *The Extent, Nature and Effects of Food Promotion to Children: A Review of the Evidence to 2008*. World Health Organization: Geneva, 2009.
2. McGinnis JM, Gootman J, Appleton K, Vivica I. (Editors) *for Committee on Food Marketing and the Diets of Children and Youth, Food Marketing to Children and Youth: Threat or Opportunity?* National Academy Press: Washington DC, 2006.
3. World Health Organization. Set of recommendations on the marketing of foods and non-alcoholic beverages to children 2010:[16 p.]. Available from: [http://whqlibdoc.who.int/publications/2010/9789241500210\\_eng.pdf?ua=1](http://whqlibdoc.who.int/publications/2010/9789241500210_eng.pdf?ua=1) (accessed 20 April 2016).
4. World Health Organization. *Global Strategy on Diet, Physical Activity and Health*. WHO: Geneva, 2004.
5. Hawkes C, Jewell J, Allen K. A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obes Rev* 2013; 14: 159–68.
6. Lobstein T. *The PolMark Project. Policies on Marketing Food and Beverages to Children. Review of regulations in EU member states*. London, England: International Association for the Study of Obesity, 2010.
7. OPS. *Recomendaciones de la Consulta de Expertos de la Organización Panamericana de la Salud sobre la promoción y publicidad de alimentos y bebidas no alcohólicas dirigida a los niños en la Región de las Américas*. Organización Panamericana de la Salud: Washington DC, 2011.
8. International Food and Beverage Alliance. Responsible marketing & advertising to children Brussels 2008 [Available from: <https://ifballiance.org/our-commitments/responsible-marketing-advertising-to-children/> (accessed 19 April 2016).
9. Children's Food and Beverage Advertising Initiative and the Children's Advertising Review Unit of the Council of Better Business Bureaus. CFBAI statement on the healthy eating research recommendations for responsible food marketing to children Washington DC: council of better business bureaus; [Available from: <http://www.bbb.org/council/news-events/news-releases/2015/01/cfbai-statement-on-the-healthy-eating-research-recommendations-for-responsible-food-marketing-to-children/> (accessed 19 April 2016).
10. Brownell K. Thinking forward: the quicksand of appeasing the food industry. *PLoS Med* 2012; 9: e1001254.
11. Sharma LL, Teret SP, Brownell KD. The food industry and self-regulation: standards to promote success and to avoid public health failures. *Am J Public Health* 2010; 100: 240–6.
12. Kraak V, Story M, Wartella E, Ginter J. Industry progress to market a healthful diet to american children and adolescents. *Am J Prev Med* 2011; 41: 322–33.
13. Schwartz MB, Ross C, Harris JL, et al. Breakfast cereal industry pledges to self-regulate advertising to youth: will they improve the marketing landscape? *J Public Health Policy* 2010; 31: 59–73.
14. Ustjanauskas AE, Harris JL, Schwartz MB. Food and beverage advertising on children's web sites. *Pediatr Obes* 2014; 9: 362–72.
15. Nestle M. Food industry and health: mostly promises, little action. *Lancet* 2006; 368: 564–5.
16. King L, Hebden L, Grunseit A, Kelly B, Chapman K, Venugopala K. Industry self regulation of television food advertising: responsible or responsive? *IJPO* 2011; 6: e390–8.
17. Potvin Kent M, Dubois L, Wanless A. Self-regulation by industry of food marketing is having little impact during children's preferred television. *Int J Pediatr Obes* 2011; 6: 401–8.
18. Hawkes C, Harris JL. An analysis of the content of food industry pledges on marketing to children. *Public Health Nutr* 2011; 14: 1403–14.
19. Roca L. Por otras opciones de convivencia con la televisión. *Razón y palabra*. 2006;49.
20. Velasco A, Tolentino-Mayo L, Théodore F, Barquera S. *Assessment of Television Exposure in School age Children from Public Primary Schools in Mexico 14 Obesity Week*. National Institute of Public Health: Boston, 2014.
21. Kabadayı A. Analysing the types of TV programmes viewed by children from different socio-economic strata based on their self-report in the Turkish context. *Educational Media Int* 2006; 43: 147–64.
22. CONAR. *Código PABI. Código de Autorregulación de Publicidad de Alimentos y Bebidas No Alcohólicas dirigida al Público Infantil*. Consejo de Autorregulación y Ética Publicitaria: Ciudad de México, 2012.
23. Harris J, Schwartz M, Brownell K, et al. Cereal food advertising to children and teens score 2012: Limited progress in the nutrition quality and marketing of children's cereals New Haven: Rudd center for Food Policy & Obesity, 2012.
24. Potvin Kent M, Martin C, Kent E. Changes in the volume, power and nutritional quality of foods marketed to children on television in Canada. *Obesity* 2014; 22: 2053–60.
25. Schor A. *Nacidos para comprar*. Paidós Iberica: Barcelona, 2006.
26. Hastings G, Cairns G. *The Extent, Nature and Effects of Food Promotion to Children: A Review of the Evidence to 2008*. World Health Organization: Geneva, 2009.
27. Pérez-Salgado D, Rivera-Márquez J, Ortiz-Hernández L. Publicidad de alimentos en la programación de la televisión mexicana: ¿los niños están más expuestos? *Salud Pública Mex* 2010; 52: 119–26.
28. Chambers S, Freeman R, Anderson A, MacGillivray S. Reducing the volume, exposure and negative impacts of

advertising for foods high in fat, sugar and salt to children: a systematic review of the evidence from statutory and self-regulatory actions and educational measures. *Prev Med* 2015; 75: 32–43.

29. Lineamientos por los que se dan a conocer los criterios nutrimentales y de publicidad que deberán observar los anunciantes de alimentos y bebidas no alcohólicas para publicitar sus productos en televisión abierta y restringida, así como en salas de exhibición cinematográfica, (2014).

30. Adams J, Simpson E, White M. Variations in food and drink advertising in UK monthly women's magazines according to season, magazine type and socio-economic profile of readers: a descriptive study of publications over 12 months. *BMC Public Health* 2011; 11: 368.

## Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

**Table S1.** Distribution of the commercials depending on the type of food and beverage, main audience and companies that signed and did not sign the self-regulatory agreement.

**Table S2.** Distribution of the commercials from companies that signed the self-regulatory code according to type of special offers and use of a cartoon character or any type of celebrity.