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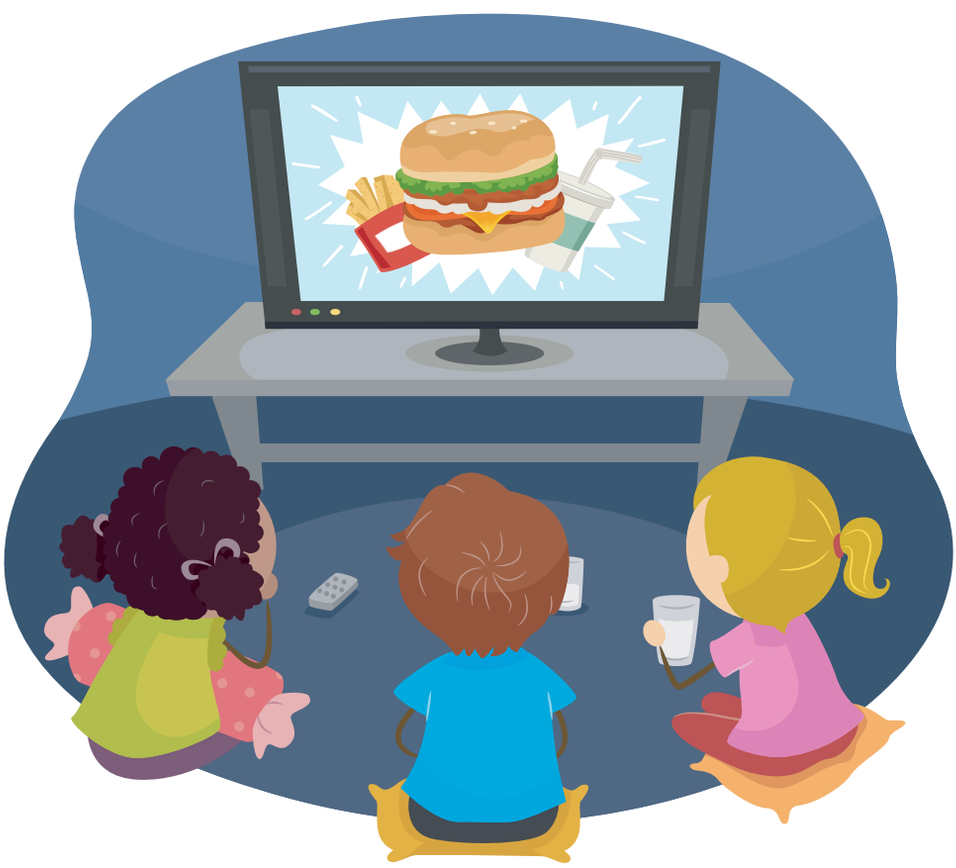
MONITORING FOOD AND BEVERAGE MARKETING TO CHILDREN VIA TELEVISION IN KAZAKHSTAN

National Center of Public Health
of the Republic of Kazakhstan



Key findings 2019

Abstract
This report summarizes the results of a 2018 survey of food and beverage marketing to children via television in Kazakhstan. It explores the extent and nature of childrenñs exposure to marketing for food high in saturated fat, free sugars and/or salt via television in the country. The study results can be used by policy-makers to restrict and regulate marketing of food high in saturated fat, free sugars and/or salt both on television and in other media.

Keywords
CHILDREN
FOOD
MARKETING
ADVERTISING
TELEVISION

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Monitoring food and beverage marketing to children via television in Kazakhstan

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Contents

Acknowledgements

This report on monitoring food and beverage marketing to children via television in Kazakhstan is a survey based on the WHO Regional Office for Europe protocol óMonitoring food and beverage marketing to children via television and the Internetfl (Copenhagen: WHO Regional Office for Europe; 2016). The report was primarily authored by Zhamilya Battakova, Shynar Abdrakhmanova and Assel Adayeva of the National Center of Public Health Nur-Sultan, Kazakhstan. The authors are grateful for the financial support and guidance provided by the WHO Regional Office for Europe. We would like to thank the following, in particular, for their support: João Breda (WHO European Office for the Prevention and Control of Noncommunicable Diseases), for organizational, methodological aspects; Jo Jewell (WHO Regional Office for Europe) and Asiia Imaeva (Federal State Institution óThe National Research Center for Preventive Medicinefl of the Ministry of Health care of the Russian Federation (FSI NRCPM)), for training, coding support and consultation throughout the period of the study; and Anna Kontsevaya and Julia Balanova (FSI NRCPM) for their guidance and input on coding and write-up of the report. Emma Boyland of the University of Liverpool, United Kingdom, developed the original protocol and kindly reviewed this paper.

Abbreviations

COSI	Childhood Obesity Surveillance Initiative
HFSS	high in saturated fats, trans fats, free sugars and/or salt
NCDs	noncommunicable diseases
WHO	World Health Organization
WHO NP model	WHO Regional Office for Europe nutrient profile model

1. Background

Poor nutrition is a leading risk factor for disease and disability in every Member State in the World Health Organization (WHO) European Region. Nutritional disorders, such as undernutrition, micronutrient deficiencies, overweight and obesity, and noncommunicable diseases (NCDs) caused by unhealthy diets, result in significant social and economic losses for states, populations, communities and families *(1)*.

In particular, the growing prevalence of overweight and obesity is a serious public health issue that has alarming consequences in many countries worldwide. According to WHO figures, the number of people with obesity worldwide more than tripled between 1975 and 2016 *(2)*. Overweight and obesity, previously considered an issue mainly limited to high-income countries, are now becoming much more prevalent in low- and middle-income countries. Worldwide, the prevalence of overweight and obesity among children and adolescents aged 5í19 years increased sharply from only 4% in 1975 to 18% in 2016 *(2)*.

The main driver of obesity is an imbalance between the caloric intake of consumed food and the energy expenditure in the body. This is due to consumption of foods high in calories, fat, salt and sugars, but low in vitamins, minerals and other microelements, in combination with a sedentary lifestyle and low levels of physical activity. Studies have argued that changes in the food supply and modern food environments have been particularly important in driving these changes in consumption *(3, 4)*.

The same trend is observed in Kazakhstan. According to a study conducted in 2008 by the Kazakh Academy of Nutrition, a fifth (19.9%) of the surveyed individuals were overweight, and one in 10 respondents had obesity *(5)*. A more recent study (2015) by the National Centre for Problems of Healthy Lifestyle Development (NCPHLD) revealed a worsening situation with respect to people with overweight: while the proportion with obesity (9.2%) was little changed, a third (33.3%) of the adult population surveyed were now overweight *(6)*.

In the case of school-aged children, a study of the prevalence of childhood obesity, behavioural and environmental factors among primary schoolchildren (8í9 years of age) was conducted in Kazakhstan in 2015í2016 as part of the WHO European Childhood Obesity Surveillance Initiative (COSI). According to COSI Kazakhstan data, almost 20% of children had overweight or obesity. It was revealed that the prevalence of overweight, as well as obesity and severe obesity, was significantly higher among urban boys than rural boys *(7)*.

The studies mentioned above also reveal that patterns of food consumption in Kazakhstan are not aligned with national and international dietary guidelines. According to the available data, 50.5% of urban and 44.2% of rural adult respondents consumed fast food *(6)*; the prevalence of daily fruit and vegetable consumption was low; and school-aged children regularly consumed sugar-sweetened soft drinks and sweets/confectionery *(7)*.

Responding to this challenge, the WHO Regional Office for Europe developed the European Food and Nutrition Action Plan 2015í2020 *(1)*. This plan focuses on food and nutrition as key factors affecting human health and well-being, with special emphasis on the nutritional burden of NCDs; it covers all forms of malnutrition, including overweight and obesity, and all stages of human life. One of the main goals of the plan is to promote the creation of health food environments, and a strategic priority is the call for decisive measures to reduce childrenñs exposure to marketing methods used to promote foods that are high in saturated fats, trans fats, free sugars and/or salt (HFSS).

Food marketing has been shown to be an important aspect of the obesogenic environment that promotes unhealthy nutrition, and children (including adolescents) are often the target of food industry marketing strategies *(8)*. According to international data, advertisement of food products to which children are exposed frequently promotes HFSS products, such as sweetened soft drinks, sweets, fast food and breakfast cereals, and the amount of unhealthy food marketing has increased in recent years *(8–12)*. For example, a study of TV food advertising targeted at children in Australia, a number of countries in Asia, western Europe, and North and South America showed that advertising of unhealthy food and beverages comprised between 53% and 87% of total food advertising *(8, 13)*; this indicator was highest in Germany in 2008, where 87% of food advertising on TV was for non-core (less healthy) food products *(13, 14)*.

The scale of the food industryñs expenditure on marketing its products is also alarming. In the United States, in 2009, companies spent more than US$ 1.79 billion on food promotion specifically directed at children and adolescents *(12)*. In western Europe, in 2010, more than 6.5 billion was spent on marketing of various types of food and nonalcoholic beverage; of this figure, more than 3.5 billion was allocated to television advertising *(15)*. Television is given this central role in marketing strategies *(9, 15)* as it remains a popular medium among children and adolescents *(8, 11)*. According to a 2013/2014 Health Behaviour in School-aged Children (HBSC) study *(16)*, more than half of children and adolescents spend two or more hours per day watching television (50% of 11-year-olds and 63% of 15-year-olds). In Kazakhstan, according to 2016 COSI survey data, 25.7% of 8í10-year-old children spend two or more hours watching television and other electronic devices on a weekday *(7)*. According to some estimates, a child watches, on average, 12.8 food commercials on television per day, or about 4700 advertisements per year *(12)*.

In general, taste, entertainment, emotions, special offers and use of recognizable characters are the key aspects of advertising that appeal to children *(8, 17–19)*. Marketing tactics employed for food products are often associated with promotion of a brand í a sign, symbol or character which becomes easily recognizable and attractive to children and adolescents. In addition, cartoon characters, animation, competitions and rewards are used to attract the attention of children and youth *(8, 10, 12)*.

The existing evidence indicates that there is a cascade effect caused by childrenñs exposure to unhealthy food marketing promotions, which influences childrenñs attitudes and behaviours, and eventually causes weight gain. Brand memory, brand recognition and positive attitudes towards advertised foods lead in turn to children expressing preferences for promoted products and modelling the behaviours they observe. Then, behavioural responses such as intention to purchase, ópester powerfl, purchase request and product purchase lead to increased consumption of advertised foods and weight gain *(20)*. As a result, childrenñs exposure to unhealthy food advertising is associated with poor diet and increased energy intake, especially among children with overweight and obesity *(9, 10, 12, 18, 21)*.

Recognizing the extent, nature and harmful impact of food marketing on children, in 2010 WHO developed a *Set of recommendations on the marketing of foods and non-alcoholic beverages to children*, as a guideline for Member States on developing and/or strengthening policies to protect children from exposure to marketing of HFSS foods and beverages*(22, 23)*. The WHO Set of recommendations calls for measures to limit exposure (coverage, frequency, reach) and power (content, appeals, various techniques that increase attractiveness) of the marketing strategies used by the food industry *(22)*. In response, a number of food companies have voluntarily made efforts to restrict marketing activities in a number of regions, including Europe *(15)*. However, voluntary or self-regulatory restrictive approaches are often narrow in scope, have weak criteria and lack proper oversight *(19)*.

Some countries in the European Region, such as the United Kingdom, Denmark, Norway and Ireland, are imposing stronger measures to restrict marketing of food and nonalcoholic beverages to children *(19, 23)*. Nevertheless, there are certain omissions or óloopholesfl

in existing policies í for example, focusing exclusively on TV and radio broadcasting and óconventionalfl media í that need to be addressed by regulation if these policies are to be truly effective *(19)*.

The WHO Regional Office for Europe has also developed a classification to guide countries in restricting food marketing: the WHO Regional Office for Europe nutrient profile model, hereinafter referred to as the WHO NP model. Use of the WHO NP model can assist in evaluating the current status of HFSS food marketing in Member States and determining the effectiveness of existing initiatives and approaches to restricting such marketing *(23, 24)*.

In Kazakhstan, advertising activities are currently regulated by the Law of the Republic of Kazakhstan of 19 December 2003, No. 508-II, óOn Advertisingfl (with amendments and additions as of 9 January 2018). The law specifies general requirements for advertising and types of improper advertising *(25)*, but it does not include specific measures to restrict advertising of HFSS foods to children.

No studies of TV marketing of foods to children have been conducted in Kazakhstan. The purpose of this study is to monitor and evaluate the extent and nature of food marketing on TV; this assessment will provide a basis for developing new policy measures, and strengthening existing ones, to limit childrenñs exposure to HFSS food marketing.

The WHO Regional Office for Europe protocol óMonitoring food and beverage marketing to children via television and the Internetfl was adopted as a tool for quantitative assessment of food marketing on television *(26)*. The food and beverage categories, their nutritional value, and the products allowed or prohibited for marketing in accordance with certain threshold values were determined in accordance with the WHO NP model *(24)*.

The use of the standardized protocol and the WHO NP model in Kazakhstan will allow national policy on restricting marketing of foods and beverages to be strengthened. It will also facilitate cross-country comparisons that will allow an overall picture of food marketing in the Region to emerge.

2. Methods

2.1 Preparatory stage

The study protocol was developed in collaboration with WHO European experts on the basis of a methodology that reflects the experience of previous studies and has already been used in several countries *(26)*.

The following additions and changes were made to the protocol. In the programmes category, national-patriotic programmes and weather forecasts were classified as óother programmesfl. With regard to the type of product advertised, the code for óbaby food up to 1 year (milk formula, baby purees)fl was changed to óbaby and infant food up to 3 years (milk formula, baby porridge and purees)fl; and additional codes were created, such as ósocial advertisingfl (i.e. government-issued public awareness campaigns), sports goods and entertainment platforms operating via SMS (i.e. text messaging services). The code óotherfl refers to advertising on mobile applications, information about concerts, competitions, film of products identified in the study were classified as óunknownfl with respect to marketing to children.

2.2 Sampling and data collection

In the Republic of Kazakhstan, television programmes are broadcast through national distribution channels (freely accessible to all), which are the responsibility of the national operator. There are also regional and local channels, as well as satellite and cable television channels that are accessible on a paid subscription basis. For the purposes of this study, the national distribution channels provided free of charge were chosen, as they are available to most of the urban and rural population.

In the choice of channels to monitor, national data providing relevant information on the following criteria were taken into account: popularity, accessibility, national broadcasting, and catering to a childrenñs audience (children under 16) *(27)*. In Kazakhstan, there is one national channel for children, Balapan, which broadcasts in Kazakh and is directed at children aged 3 to 15 years. In addition to Balapan, five other channels were selected í 1 Channel Eurasia, NTK, 31 Channel, Astana TV and Qazaqstan í which provide popular family viewing across various genres, including cartoons, childrenñs entertainment and educational programmes for children. For each channel, TV broadcasts were recorded over two weekdays and two weekend days, between 06.00 and 22.00,[i] from March to May 2018 (Table 1). In order to obtain typical broadcast data, programmes shown on national holidays (8 March; 21í23 March; 1, 7 and 9 May) were not recorded. In total, 374 hours of TV programmes broadcast on six channels were recorded on DVD over 24 days (12 weekdays and 12 weekend days).

i NTK and Balapan start broadcasting at 07:00 and 07:30, respectively.

Table 1. Recording schedule

Channel	Weekdays		Weekend days	
Balapan	28 March 2018 (Wed)	29 March 2018 (Thu)	31 March 2018 (Sat)	1 April 2018 (Sun)
1 Channel Eurasia	9 April 2018 (Mon)	11 April 2018 (Wed)	14 April 2018 (Sat)	15 April 2018 (Sun)
NTK	12 April 2018 (Thu)	13 April 2018 (Fri)	21 April 2018 (Sat)	22 April 2018 (Sun)
31 Channel	19 April 2018 (Thu)	20 April 2018 (Fri)	12 May 2018 (Sat)	22 May 2018 (Sun)
Astana TV	5 April 2018 (Thu)	6 April 2018 (Fri)	29 April 2018 (Sun)	20 May 2018 (Sun)
Qazaqstan	30 March 2018 (Fri)	2 April 2018 (Mon)	8 April 2018 (Sun)	19 May 2018 (Sat)

2.3 Coding

Coding of data was carried out by two researchers. Before the start of data coding, each researcher coded one hour of television; they then discussed the coded data to eliminate any inconsistency and to check inter-coder reliability. In addition, coding was coordinated with colleagues from the National Research Center for Preventive Medicine (NRCPM) of the Ministry of Healthcare of the Russian Federation; and, for standardization purposes, discrepancies and coding issues were discussed and clarified with the WHO expert.

All recorded broadcasts were viewed (in fast-forward mode) to detect advertisements. The required analysis of advertisement content was then carried out. [ii] Details of television advertisements were coded using the coding technique described in the WHO Regional Office for Europe protocol *(26)*. After various adaptations and additions had been made to reflect the particular characteristics of advertising in Kazakhstan, data were entered into Microsoft Excel spreadsheets.

All advertisements for foods and beverages were coded according to the protocol, including information about the product itself: brand name; manufacturer; product description; food category code; nutritional value; whether marketing is allowed according to the WHO NP model; and information on the power (content) of the advertisement í main motivating appeal, dynamic audiovisual components, brand characters, licensed characters, cartoon characters, claims of health benefits, etc.

For most foods and beverages in Kazakhstan, labelling indicating nutritional value only contains information on total protein, fat and carbohydrate content in grams per 100 g of product, and energy value per 100 g of product in kilocalories and kilojoules; there is also a list of ingredients that specifies composition of the product but not ingredient quantities. In many cases, there is no quantitative information on added sugars, sweeteners, saturated fats and trans fats.

Statistical analysis, including descriptive statistics, was carried out using SPSS 15.0 for Windows.

ii This protocol focused solely on spot advertising and did not include programme sponsorship. Items considered to be part of programming and therefore not included as advertising are: opening and closing credits, closed captioning acknowledgements, brief sponsorship announcements, and promotions for content to appear later in the same programme. Sponsorship can vary dramatically, from simply flashing a logo on screen to a short (almost advertisement-like) segment. Capturing all these types within the same study without losing accuracy is therefore difficult. As sponsorship is not included, findings are likely to underestimate the full extent of food promotion on TV.

3. Results

3.1 Total number and distribution of advertisements

In total, 10 642 advertisements were analysed by two researchers; 47.9% of commercials were shown on weekdays, 52.1% at weekends. Fig. 1 shows the distribution of advertising at weekends and on weekdays for each channel separately. On 1 Channel Eurasia and Astana TV, the difference between weekend and weekday advertising is slightly more marked (weekends 54.3%, weekdays 45.7%).

The distribution of advertising on TV channels is fairly uniform over the day. There are no significant peaks of advertising identified on 31 Channel and NTK. On 1 Channel Eurasia, there are small peaks from 18:00 to 19:00 (10.0%); on Astana TV, from 10:00 to 11:00 (11.4%), from 11:00 to 12:00 (10.4%), and from 13:00 to 14:00 (11.3%); on Qazaqstan, from 13:00 to 14:00 (10.3%); and on Balapan, from 08:00 to 09:00 (10.6%), from 09:00 to 10:00 (10.1%), and from 17:00 to 18:00 (10.6%) (Fig. 2; Table A1.1).

Fig. 1. Proportion of recorded and viewed advertisements on weekdays and at weekends (%)

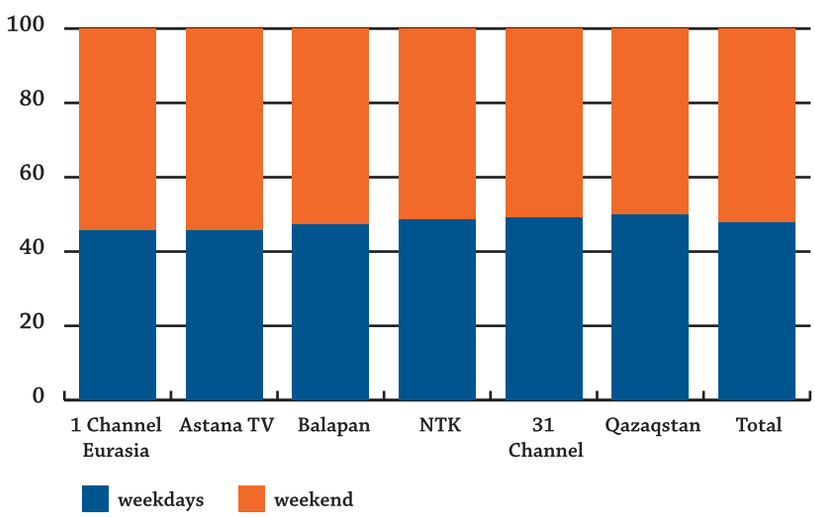
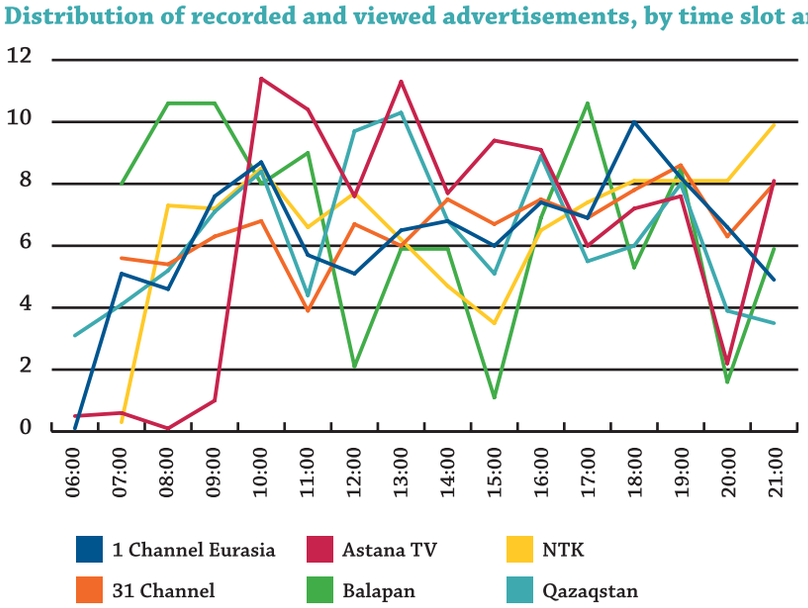


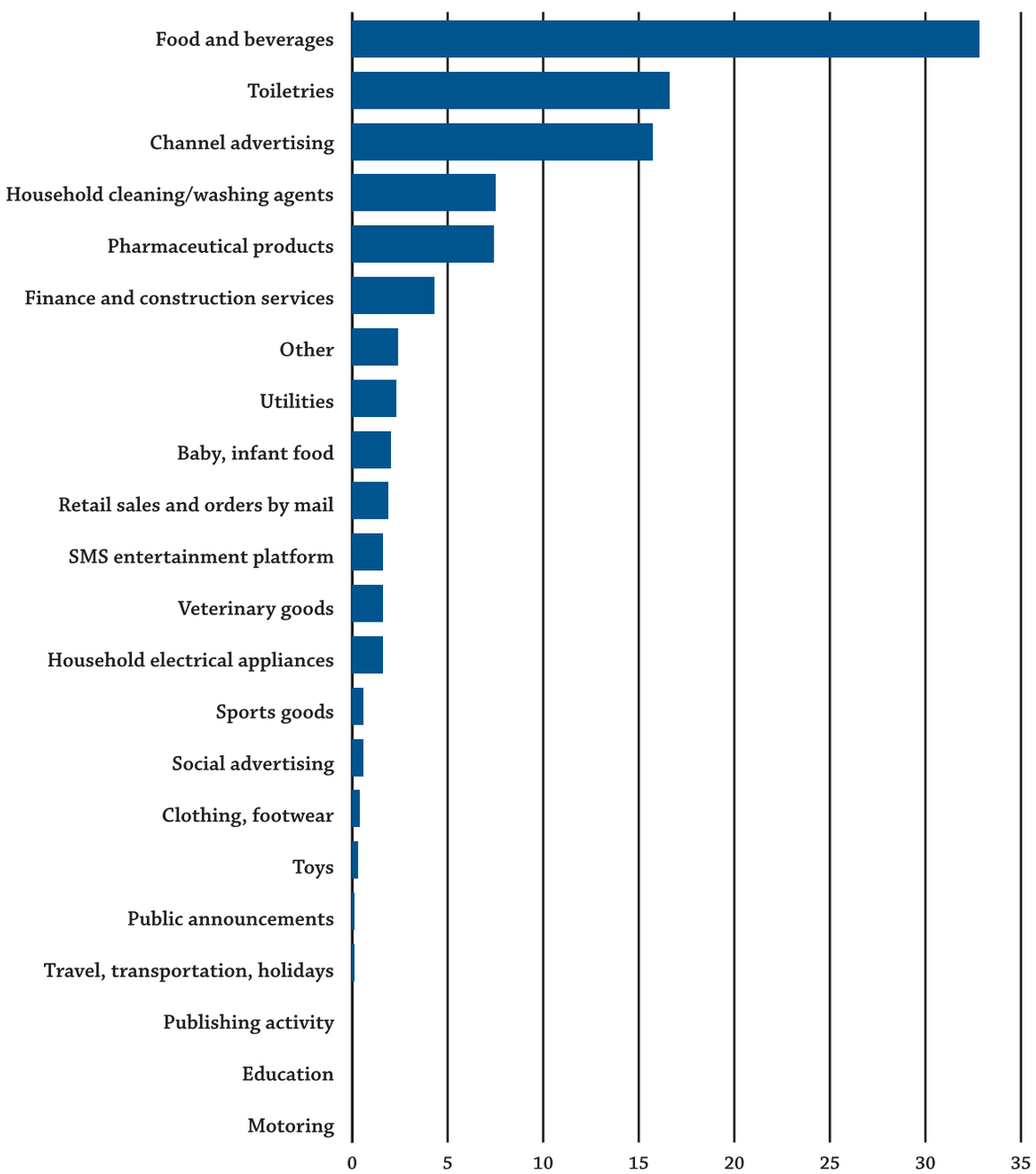
Fig. 2. Distribution of recorded and viewed advertisements, by time slot and TV channel (%)



3.2 Types of product advertised

By type of product advertised, the most common type is advertising of food products and beverages (32.8%, 3494 advertisements), which far exceeds other types of advertising (Fig. 3; Table A1.4). In second place comes advertising of toiletries (soap, shampoo, cosmetics, nappies, hygiene items, etc.) at 16.6%; then channel advertising (i.e. promotions for the channel itself) at 15.7%; household cleaning/washing agents (washing liquid utensils, washing powders, cleaning liquids, etc.) at 7.5%; and pharmaceutical products (medicines, vitamins, breath fresheners, etc.) at 7.4%. For baby and infant food up to 3 years (infant formula, baby purees, porridge, etc.), the figure was 2.0%.

Fig. 3. Proportion of advertisements by product type (%)



3.3 Food marketing exposure

The total number of TV commercials for food products across all channels was 9.1 per hour, on average, including 6.6 advertisements for foods and beverages not permissible for marketing to children according to the WHO NP model (Fig. 4). On average, the largest number of food advertisements per hour was shown by Channel 31 (18.9), followed by NTK (11.4), Astana TV (10.5), 1 Channel Eurasia (8.8), and Qazaqstan (4.4). The fewest advertisements per hour were shown on Balapan (0.6). In the case of advertisements for foods and beverages not permissible for marketing to children, the highest number per hour (on average) was also shown on Channel 31 (12.6), followed by NTK (9.3), Astana TV (7.2), 1 Channel Eurasia (6.5), Qazaqstan (3.2) and Balapan (0.6).

The proportion of all advertising given to food and beverage products was 36.9% on NTK, 35.1% on Channel 31, 34.8% on Astana TV, 34.7% on 1 Channel Eurasia, 20.7% on Balapan, and 19.1% on Qazaqstan (Fig. 5; Table A1.4). It should be noted that, on the national childrenñs TV channel Balapan, although the proportion of food and beverage advertising was relatively high (20.7%), these advertisements were restricted to two products that were promoted on multiple occasions: a sweet carbonated drink and a chewing sweet; other types of advertising on Balapan were mainly limited to channel advertising and social advertising.

Fig. 4. Average number of advertisements shown per hour for all foods and for foods not permissible for marketing to children, by channel

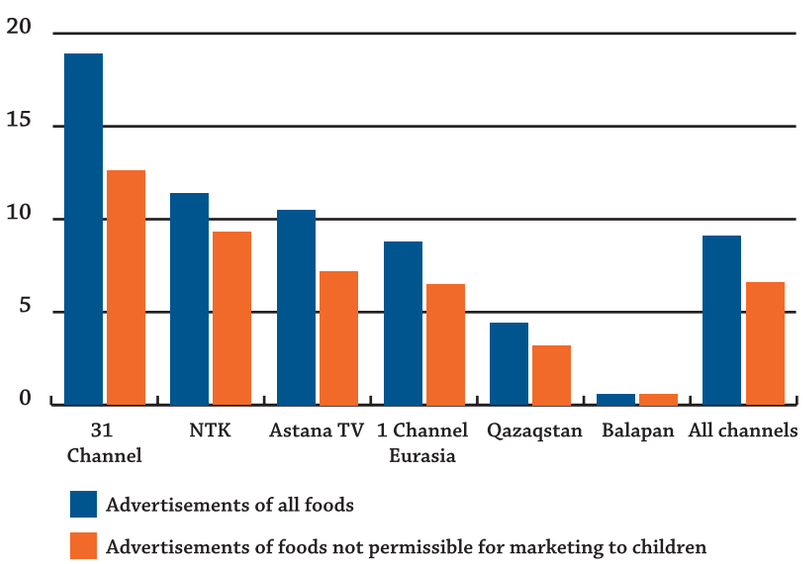
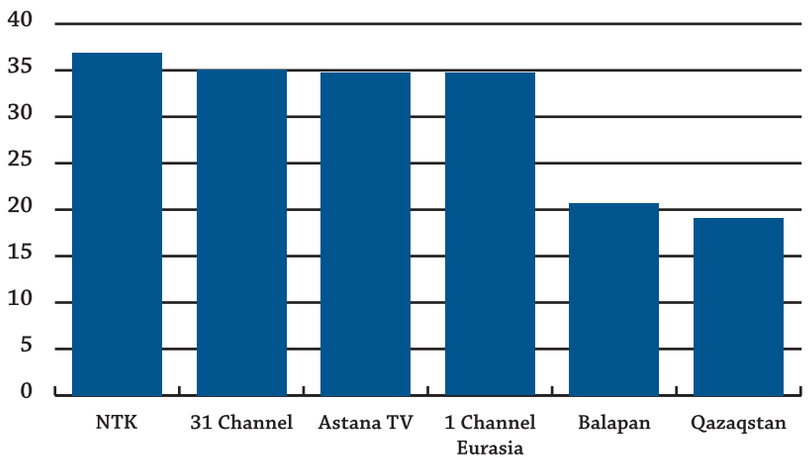
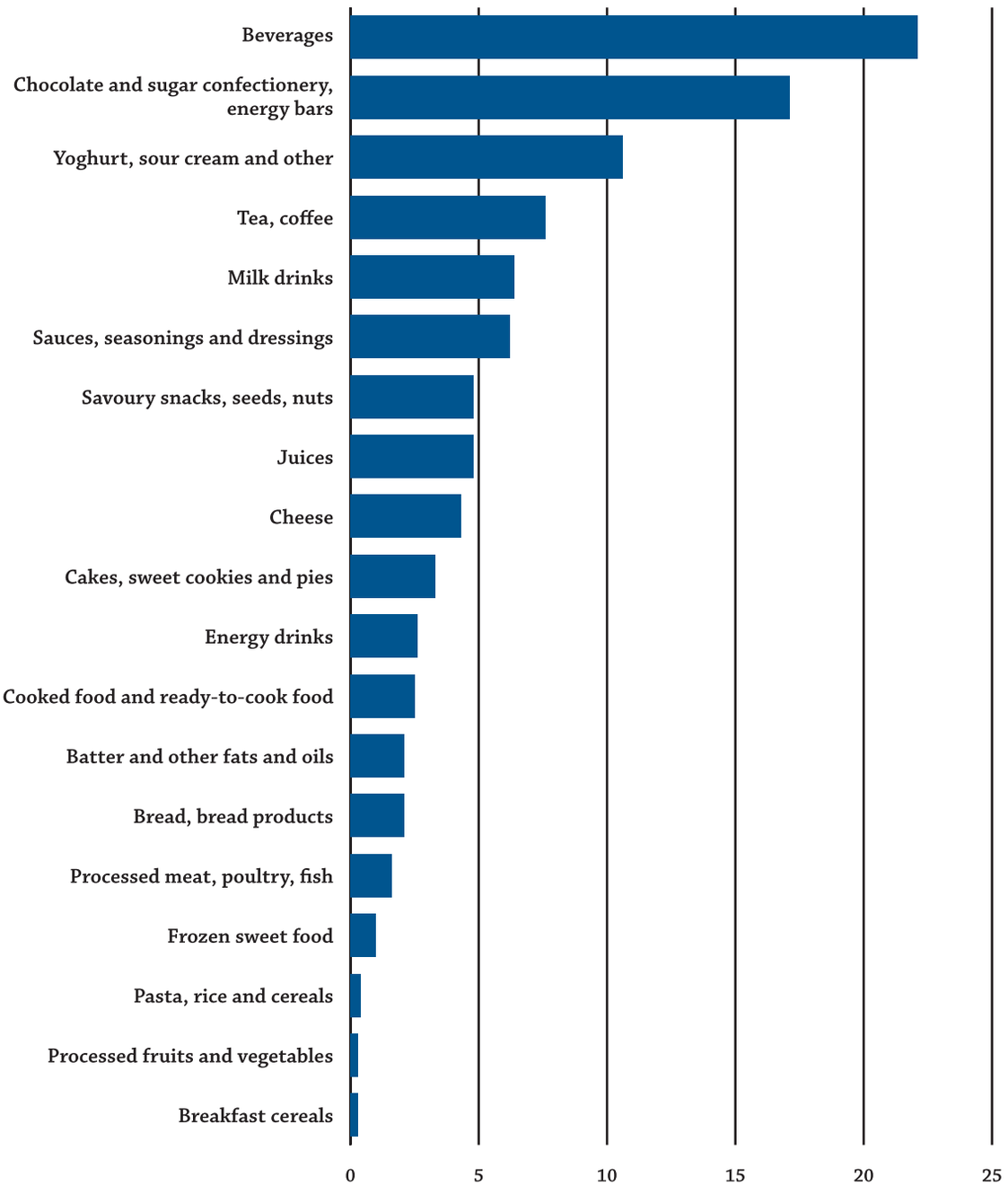


Fig. 5. Proportion of advertisements dedicated to food and beverage products, by channel (%)



Food and drink products were coded according to the category codes prescribed by the WHO NP model, which uses nutrient thresholds to determine whether marketing of products in a given category to children is permitted or not. The most frequently advertised category was beverages, at 22.0%, which include cola, lemonade, orangeade, other nonalcoholic beverages, mineral and/or flavoured water (including carbonated) with the addition of sugars or sweeteners, but does not include 100% fruit and vegetable juices or milk drinks; this is followed by chocolate, sugar confectionery and energy bars (17.1%) and yogurt, sour cream and other similar products (10.6%). Other categories advertised included tea/coffee, at 7.6%; milk drinks, including milk and sweetened milk, at 6.4%; sauces, seasonings and dressings, at 6.2%; juices, including 100% fruit and vegetable juices, and juices recovered from concentrate, at 4.8%; and savoury snacks, seeds and nuts, at 4.8% (Fig. 6; Tables A1.7í9).

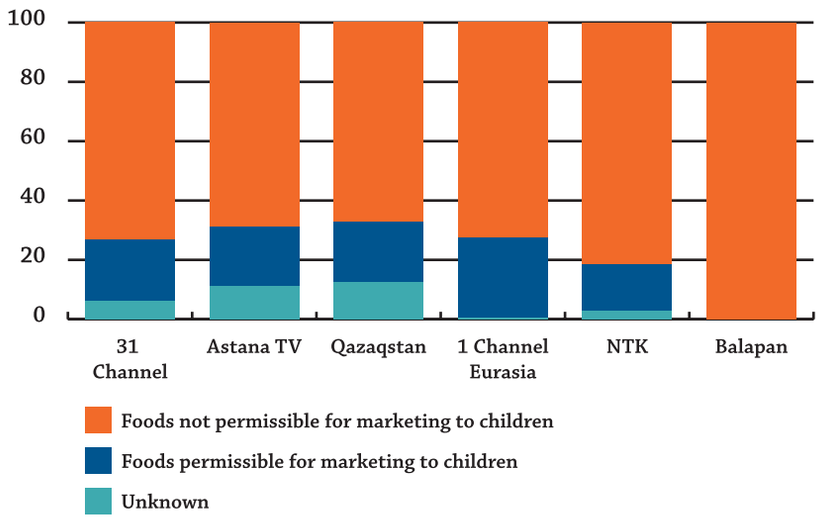
Fig. 6. Proportion of advertisements dedicated to different types of food and beverage (%)



On the childrenñs TV channel Balapan, advertising of sweets (chocolate, sugar confectionery, etc.) accounted for 79.5% of all food products advertised, while the figure for advertising of beverages (carbonated drinks, etc.) was 20.5%; thus, these two product categories together made up 100% of all food advertising on Balapan. On 1 Channel Eurasia, 31 Channel and NTK, these same two categories were also the largest among food products. On Qazaqstan and Astana TV, beverages constituted the largest category, but second place was taken by yogurts, sour cream, etc. (Tables A1.7í9).

According to the WHO NP model, only 19.5% of advertised foods and beverages would be allowed to be marketed to children, while for 72.3% of such products, advertising and marketing to children would be banned. Insufficient nutritional information given on food packaging meant that 8.2% of products could not be classified as permissible or not. Fig. 7 shows the proportion of food products advertised on the selected channels that is allowed, or not allowed, to be marketed to children (Tables A1.10í12).

Fig. 7. Proportion of food advertisement permissible for children according to the WHO NP model, by channel (%)



On the childrenñs TV channel Balapan, 100% of food and drink products that are currently advertised would face restrictions on marketing to children according to the WHO NP model; for the NTK channel, the corresponding figure is 81.6%. On other channels, the indicator is also high, accounting for more than two thirds of all food and drink advertising (Tables A1.10í12).

On average, across all channels, food and beverage advertising represented approximately 30% of all advertising in every two-hour time slot/interval between 06:00 and 22:00. In the channels selected for the study, advertising of food products was least frequent in the early morning hours (06:00í08:00). At other times, food and beverage advertising was distributed more or less evenly throughout the day, when considered in two-hour intervals (Fig. 8; Tables A1.13í15). The exception is Balapan, where there was no food and beverage advertising at all in the period between 12:00 and 16:00; however, food advertising on Balapan peaked between 18:00 and 20:00, which is generally understood to be prime time for family viewing (including children), and at 26.7% between 06:00 to 08:00 which may also be slots when children are watching TV before school.

Fig. 8. Distribution of all food advertisements, recorded and viewed, by time slot and channel (%)

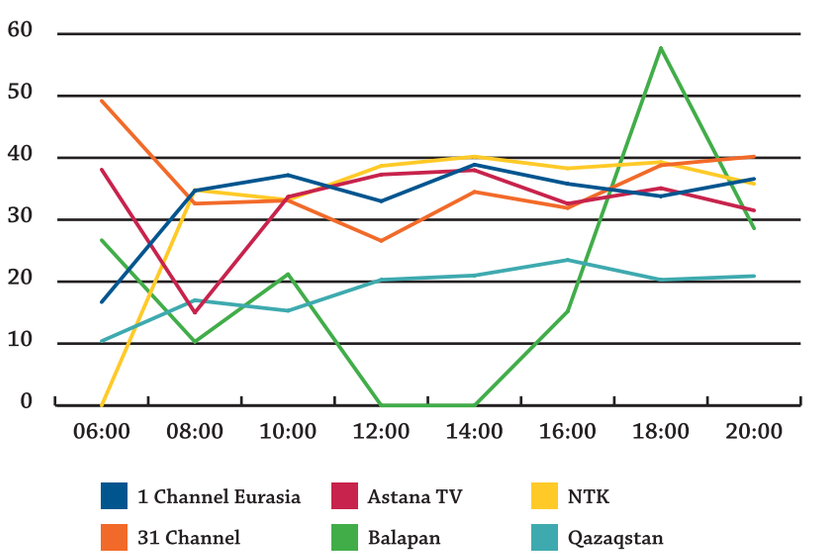
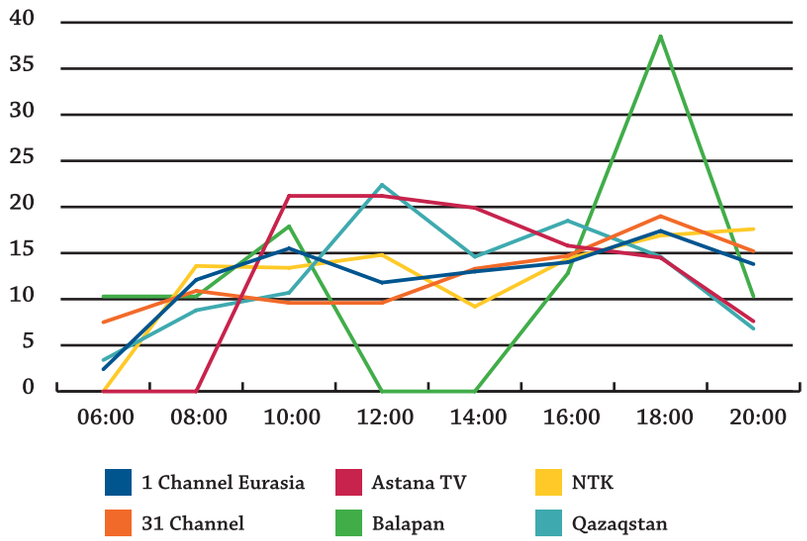


Fig. 9. Distribution of advertisements, recorded and viewed, of foods not permissible for marketing to children, by time slot and channel (%)



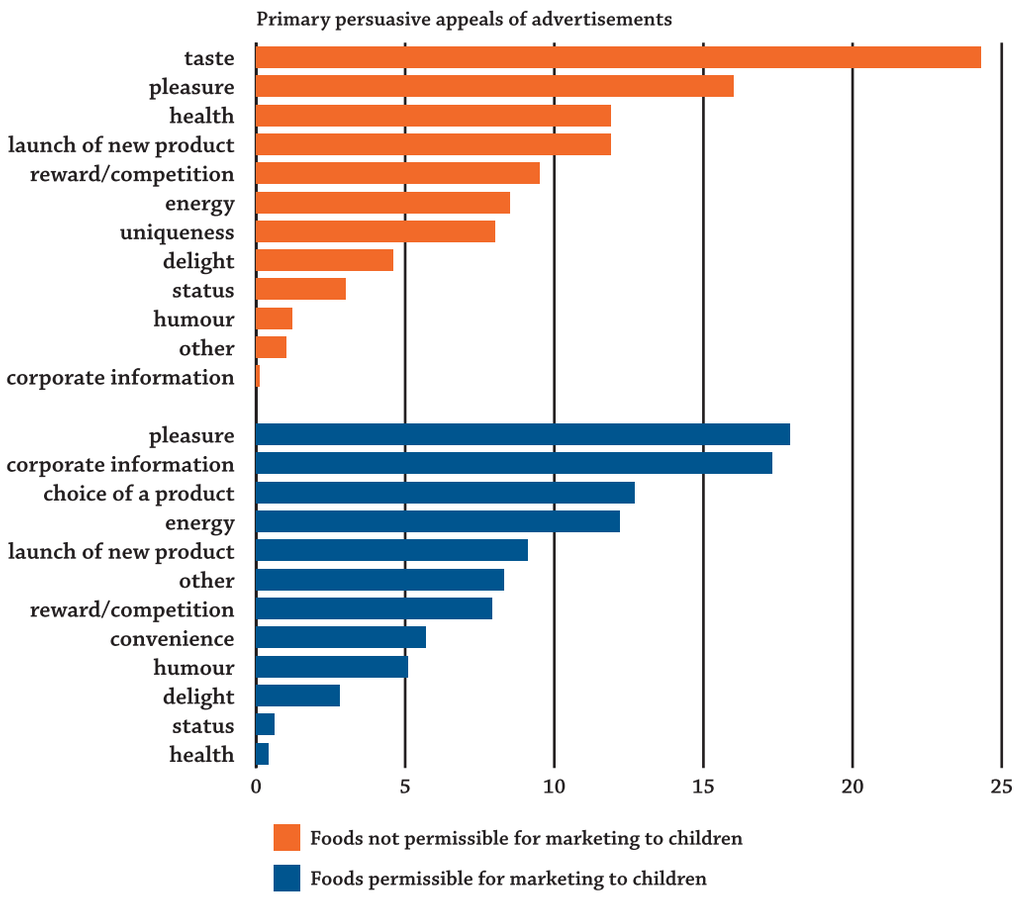
In the case of food products that would not be permissible for marketing to children according to the WHO NP model, advertising was found to be relatively evenly distributed throughout the day. However, peaks of advertising for such impermissible foods were observed on Balapan from 10:00 to 12:00 (17.9%) and, even more so, from 18:00 to 20:00 (38.5%); and on Qazaqstan from 12:00 to 14:00 (22.4%) and from 16:00 to 18:00 (18.5%). On Astana TV, the advertising frequency increases steeply at 10:00 (21.2-19.9%) and remains elevated until 16:00 with a subsequent gradual decrease thereafter (Fig. 9; Tables A1.16í18).

3.4 Power of food marketing

Advertising of food and beverages on television was also assessed according to the main motivating factor (the advertisementñs main topic or subject; the main concept or idea used by advertisers to try to convince viewers to buy the product). In the case of products permissible for marketing to children according to the WHO NP model, the most common persuasive factors were: pleasure í for example, óthe product is fun, produces pleasurefl (17.9%); corporate information í for example, óthis snack comes to you from the most famous food producerfl (17.3%); choice of product í for example, óordinary or sugar-freefl (12.7%); energy í for example, óthis product will give you a burst of energyfl (12.2%); and introduction/launch of a new product í for example, óhereñs a new product, try itfl (9.1%) (Fig. 10; Table A1.19).

In the case of foods not permissible for marketing to children, a different pattern emerges. The most common persuasive factors were: taste í for example, óappetizer with amazing tastefl (24.3%); pleasure (16.0%); health í for example, ófull of vitaminsfl (11.9%); introduction/ launch of a new product (11.9%); reward/competition í for example, óbuy this product and get a chance to winfl (9.5%) (Fig. 10; TableA1.20).

Fig. 10. Distribution of advertisements for foods permissible and impermissible for marketing to children according to the WHO NP model, by primary persuasive appeal (%)



The power variables or techniques used in marketing to increase the attractiveness and recall of products differ in food advertising that is permissible and impermissible for marketing to children. Dynamic audiovisual components í that is, complex graphic and dynamic visual elements that are designed to attract attention í are found in advertising both of unhealthy food products (56.8%) and of products that are permissible for marketing to children (55.9%). In advertisements of foods and drinks that are not permissible for marketing to children, use of brand characters (8.7%), licensed characters (8.0%) and cartoon characters (5.3%) was apparent, while in advertisement of foods permissible for marketing to children these techniques were not found. Celebrities were also seen more often in advertising of HFSS products (12.4%) than in advertising of permissible food products (2%). Child or child-like characters (other than brand characters) were used in 36.1% of advertisements for unhealthy foods, as against 23.0% in advertisements for healthier foods. Physical activity is more commonly shown in advertisements for food products not permissible for marketing to children (16.8%) than in advertisements of permissible products (1.2%).

3.5 Social advertisement

Social advertisements (i.e. government-endorsement public awareness campaigns) were viewed on the TV channels selected for the study. The purpose of such advertisements included promoting patriotism (love of the ómotherlandfl, celebration of national holidays) and conveying information on various topics such as health and safety, social and cultural life, sports, charities, and state development policy within the country. Overall, the share of social advertisements was 0.6% (66 videos) across all channels viewed. The largest number of social advertisements was shown on Balapan (13.3%), while on Astana TV such advertising accounted for 1.2%, on Qazaqstan 1.0%, and on 1 Channel Eurasia 0.2%.

4. Discussion

Marketing of foods and beverages is recognized as an important factor affecting choice and consumption among children *(20, 28)*. According to international data, promoted/advertised foods and beverages are mostly rich in calories, fats, sugars or salt (HFSS) *(29)*. There are significant research data demonstrating a link between marketing of unhealthy foods and drinks to children and unhealthy eating habits that contribute to the development of childhood obesity *(9, 12, 21)*. This, in turn, leads to a heightened risk of NCDs.

The purpose of the present study was to assess the scope and nature of TV advertising of food products to children in Kazakhstan. It is the first study in the country reporting empirical data on the extent and nature of food and beverage advertising to children and adolescents.

In total, we screened 10 642 advertisements, amounting to 374 hours of broadcast time, on six national TV channels (Balapan, Astana TV, Qazaqstan, 31 Channel, NTK and 1 Channel Eurasia). We found that food and beverage advertisements were the most common type of advertisement, accounting for one third of all advertisements on TV channels (32.8%, N = 3494). This is higher than the proportion of food advertisements in Germany (18.5% in 2010) *(14)*; slightly higher than in China, where 25.5% of 5527 commercials were advertisements for food products (2012) *(30)*; higher than in Greece (29%) *(13)*; and significantly higher than in the United Kingdom (12.8% in 2008) *(31)* and Italy (13.9%) *(32)*.

In our sample of Kazakhstanñs TV channels, the majority of advertised foods and beverages (72.3%) were not permissible for advertising and marketing to children according to the WHO NP model. This figure is significantly higher than in the United Kingdom (56%) *(31)* and in China (48.1%) *(30)*.

Among food and beverage advertisements, the leading category, at 22.0%, is beverages, which include cola, lemonade, orangeade, other nonalcoholic drinks, mineral and/or flavoured water (including carbonated) with added sugar; this is followed by chocolate, sugar confectionery and energy bars, at 17.1%.

On the Balapan channel, which is aimed at children, 100% of advertising of food products consisted of sugar confectionery (79.5%) and drinks (20.5%), which are not permissible for marketing to children. In general, however, the proportion of food advertising (as a share of all advertising) on this channel was not particularly high (20.7%), and the frequency of advertising was quite low, at 0.6 advertisements per hour.

Evidence from systematic reviews suggests that the most frequently advertised food categories on childrenñs TV channels are breakfast cereals with sugar, fast food, and chips/crackers *(9)*. In the United Kingdom, the leading advertised food categories include fast food and breakfast cereals with high sugar and low fibre *(31)*; in Italy, the leading category is sweets (62.7%) *(32)*; in Thailand, drinks with added sugar *(33)*; and in the USA, sweets, soft drinks with added sugar, fast food and sweet flakes *(12)*. These findings are in alignment with the results of the Kazakhstan study, which confirms that the leading food categories in TV advertising comprise unhealthy (HFSS) foods.

In Kazakhstan, the TV viewer watches, on average, between 0.6 (Balapan) and 18.9 (31Channel) food advertisements per hour. The frequency of advertisements for food not permissible for marketing to children, meanwhile, ranges from 0.6 (Balapan) to 12.6 (31 Channel) per hour.

The total number of TV commercials for food products across all channels was 9.1 per hour, on average, including 6.6 advertisements for foods and beverages not permissible for marketing to children according to the WHO NP model. Compared to other countries, the frequency of food advertising in Kazakhstan was the same as in Greece, at 9 per hour *(13)*, but higher than in the United Kingdom, where advertisements for unhealthy products were shown at a rate (on average) of 2 per hour (maximum 7.4); the rate for healthy foodstuffs was 0.7 per hour (maximum 4.3)

(31). In China, the frequency of advertisements was 6 per hour per channel, including three advertisements for unhealthy foods *(30)*.

A time-based analysis of the distribution of food advertisements not permitted for marketing to children according to the WHO NP model showed that on Balapan and 1 Channel Eurasia, there was a slight increase in the frequency of advertisements in the morning (peak viewing time for children) and in the evening from 18:00 to 20:00 (prime time viewing for families and children); on Qazaqstan, there were peaks between 12:00 and 14:00 and during the pre-peak viewing time from 16:00 to 18:00. On other channels, the frequency of advertisements for HFSS foods reached a plateau during the most popular TV viewing hours. Thus, on Astana TV, an increased frequency was observed from 10:00 to 20:00; on NTK, from 08:00 to 14:00 and from 16:00 to 22:00; and on 31 Channel, from 14:00 to 22:00.

Advertisers use various creative techniques to trigger emotional responses in favour of their products. We evaluated the primary persuasive appeal of advertisements. It is interesting to note that, in the case of unhealthy foods, the most popular persuasive appeals were taste (24.3%) í for example, óappetizer with amazing tastefl; pleasure (16.0%); health (11.9%) í for example, ófull of vitaminsfl; launch of a new product (11.9%); and reward/competition (9.5%) í for example, óbuy this product and get a chance to winfl. Advertisements for foods and drinks not permissible for marketing to children were found to use brand, licensed characters or cartoon characters í techniques that were absent from advertising of permissible foods. Celebrities and child or child-like characters (other than brand characters) were also seen more often in advertisements for unhealthy foods (36.1% of cases) than for healthier foods; depiction of physical activity was also more common in the case of unhealthy foods.

The types of persuasive appeal found in food advertisements vary from country to country, but the marketing ideas and concepts identified in the present report coincide with those most frequently reported in studies from other countries. Thus, a systematic review of the relevant literature found that the principal motivating marketing techniques used in food advertising for children on TV were reward, advertising characters, health and nutritional claims, taste and emotional appeal *(17)*. In Spain, taste and entertainment were the main attractions in TV advertising for children *(35)*, while in Germany they were advertising characters and offers of reward *(14)*. These latter were also the principal attractions in the leading advertisements for sugar-sweetened drinks in Thailand *(33)*, and in TV promotion of unhealthy products in China *(30)*.

The parameters of food marketing on television in Kazakhstan studied in this report í including the types of product advertised, classification of foods as permissible or impermissible for marketing to children, advertising frequency and broadcast peaks, the types of motivating appeal, etc. í offer an opportunity to develop targeted policies to restrict marketing of foods and beverages to children.

Study limitations

In the study we did not include all forms of marketing, such as digital marketing (internet, social networks, computer games, etc.) and visual advertising (banners, posters, etc.). Our sample of channels did not include those available to cable and satellite TV subscribers. As such, our findings are likely to underestimate the exposure of children to all forms of marketing in Kazakhstan.

The data presented include all advertisements shown during the recording period, without distinction due to type, target audience of programmes or duration of advertisement.

5. Conclusions and recommendations

Children in Kazakhstan are exposed to a high volume of marketing of HFSS foods. Soft drinks with added sugar and chocolate/sugar confectionery are the dominant products in TV food advertising. The study exposes a relatively high frequency of food advertisements, which rises during peak TV viewing time for children and adults.

In food advertising, persuasive factors or óappealsfl such as taste, pleasure, health, new product launches and offers of rewards or competitions, are used to increase the attractiveness of advertised products.

Use of the WHO NP model has shown its suitability and effectiveness in determining the nature and extent of food marketing in Kazakhstan.

The study identified problems with labelling of foods and beverages, such as insufficient information on nutritional value/content and difficulties in understanding text about product composition.

It should be noted that pharmaceutical products are often advertised í they are the fifth most advertised of all products promoted on television. This fact may require further study and observation.

The findings of this study underline the need to protect children in Kazakhstan from extensive food marketing on television. Legislative measures are required to restrict and regulate marketing of HFSS foods and drinks high in sugar, limiting the volume of advertising, the types of product advertised, and the persuasive techniques used to enhance product appeal.

It is also essential to introduce effective mechanisms to monitor implementation of measures to restrict and regulate food marketing. In order to develop food marketing policy, a system of food classification is needed to identify foods for which marketing should be restricted. Such a function can be served by the WHO NP model, either in its current form or adapted as necessary to suit national circumstances.

This study is the first to provide data on TV food marketing in Kazakhstan. It can serve as a starting point for developing a policy to restrict and regulate HFSS food marketing to children both on television and in other media.

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Annex 1

Table A1.1. Number and percentage of advertisements shown each hour (06:00ff22:00), by channel (all days)

Time slot/interval (one-hour increment)	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–07:00	1	0.1	9	0.5	0	0.0	46	3.1	0	0.0	0	0.0	56	0.5
07:00–08:00	83	5.1	12	0.6	193	5.6	60	4.1	5	0.3	15	8.0	368	3.5
08:00–09:00	75	4.6	1	0.1	187	5.4	77	5.2	145	7.3	20	10.6	505	4.7
09:00–10:00	124	7.6	19	1.0	215	6.3	105	7.1	142	7.2	19	10.1	624	5.9
10:00–11:00	142	8.7	221	11.4	233	6.8	124	8.4	168	8.5	16	8.5	904	8.5
11:00–12:00	92	5.7	200	10.4	133	3.9	65	4.4	130	6.6	17	9.0	637	6.0
12:00–13:00	83	5.1	147	7.6	231	6.7	144	9.7	152	7.7	4	2.1	761	7.2
13:00–14:00	105	6.5	218	11.3	205	6.0	152	10.3	122	6.2	11	5.9	813	7.6
14:00–15:00	110	6.8	148	7.7	257	7.5	100	6.8	94	4.7	11	5.9	720	6.8
15:00–16:00	98	6.0	181	9.4	230	6.7	76	5.1	70	3.5	2	1.1	657	6.2
16:00–17:00	120	7.4	175	9.1	258	7.5	131	8.9	128	6.5	13	6.9	825	7.8
17:00–18:00	112	6.9	116	6.0	237	6.9	82	5.5	146	7.4	20	10.6	713	6.7
18:00–19:00	163	10.0	139	7.2	268	7.8	89	6.0	160	8.1	10	5.3	829	7.8
19:00–20:00	133	8.2	146	7.6	296	8.6	118	8.0	161	8.1	16	8.5	870	8.2
20:00–21:00	107	6.6	43	2.2	216	6.3	58	3.9	161	8.1	3	1.6	588	5.5
21:00–22:00	79	4.9	157	8.1	276	8.0	52	3.5	197	9.9	11	5.9	772	7.3
Total	1627	100.0	1932	100.0	3435	100.0	1479	100.0	1981	100.0	188	100.0	10 642	100.0

Table A1.2. Number and percentage of advertisements shown each hour (06:00ff22:00), by channel (weekdays)

Time slot/interval (one-hour increment)	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–07:00	1	0.1	3	0.3	0	0.0	37	5.0	0	0.0	0	0.0	41	0.8
07:00–08:00	30	4.0	7	0.8	88	5.2	38	5.1	0	0.0	4	4.5	167	3.3
08:00–09:00	41	5.5	1	0.1	89	5.3	36	4.9	68	7.1	12	13.5	247	4.8
09:00–10:00	62	8.3	1	0.1	128	7.6	53	7.2	67	7.0	8	9.0	319	6.3
10:00–11:00	69	9.3	91	10.3	139	8.2	61	8.2	95	9.9	6	6.7	461	9.0
11:00–12:00	44	5.9	84	9.5	53	3.1	22	3.0	75	7.8	5	5.6	283	5.5
12:00–13:00	26	3.5	68	7.7	114	6.8	77	10.4	82	8.5	2	2.2	369	7.2
13:00–14:00	47	6.3	120	13.6	100	5.9	73	9.9	46	4.8	4	4.5	390	7.6
14:00–15:00	47	6.3	78	8.8	112	6.6	64	8.6	24	2.5	10	11.2	335	6.6
15:00–16:00	48	6.5	92	10.4	120	7.1	52	7.0	25	2.6	0	0.0	337	6.6
16:00–17:00	47	6.3	76	8.6	123	7.3	53	7.2	84	8.7	5	5.6	388	7.6
17:00–18:00	57	7.7	42	4.8	110	6.5	12	1.6	83	8.6	10	11.2	314	6.2
18:00–19:00	83	11.2	31	3.5	140	8.3	30	4.1	90	9.4	4	4.5	378	7.4
19:00–20:00	51	6.9	80	9.1	142	8.4	73	9.9	61	6.3	9	10.1	416	8.2
20:00–21:00	57	7.7	38	4.3	88	5.2	31	4.2	61	6.3	2	2.2	277	5.4
21:00–22:00	33	4.4	70	7.9	139	8.2	28	3.8	100	10.4	8	9.0	378	7.4
Total	743	100.0	882	100.0	1685	100.0	740	100.0	961	100.0	89	100.0	5100	100.0

Table A1.3. Number and percentage of advertisements shown each hour (06:00ff22:00), by channel (weekends)

Time slot/interval (one-hour increment)	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–07:00	0	0.0	6	0.6	0	0.0	9	1.2	0	0.0	0	0.0	15	0.3
07:00–08:00	53	6.0	5	0.5	105	6.0	22	3.0	5	0.5	11	11.1	201	3.6
08:00–09:00	34	3.8	0	0.0	98	5.6	41	5.5	77	7.5	8	8.1	258	4.7
09:00–10:00	62	7.0	18	1.7	87	5.0	52	7.0	75	7.4	11	11.1	305	5.5
10:00–11:00	73	8.3	130	12.4	94	5.4	63	8.5	73	7.2	10	10.1	443	8.0
11:00–12:00	48	5.4	116	11.0	80	4.6	43	5.8	55	5.4	12	12.1	354	6.4
12:00–13:00	57	6.4	79	7.5	117	6.7	67	9.1	70	6.9	2	2.0	392	7.1
13:00–14:00	58	6.6	98	9.3	105	6.0	79	10.7	76	7.5	7	7.1	423	7.6
14:00–15:00	63	7.1	70	6.7	145	8.3	36	4.9	70	6.9	1	1.0	385	6.9
15:00–16:00	50	5.7	89	8.5	110	6.3	24	3.2	45	4.4	2	2.0	320	5.8
16:00–17:00	73	8.3	99	9.4	135	7.7	78	10.6	44	4.3	8	8.1	437	7.9
17:00–18:00	55	6.2	74	7.0	127	7.3	70	9.5	63	6.2	10	10.1	399	7.2
18:00–19:00	80	9.0	108	10.3	128	7.3	59	8.0	70	6.9	6	6.1	451	8.1
19:00–20:00	82	9.3	66	6.3	154	8.8	45	6.1	100	9.8	7	7.1	454	8.2
20:00–21:00	50	5.7	5	0.5	128	7.3	27	3.7	100	9.8	1	1.0	311	5.6
21:00–22:00	46	5.2	87	8.3	137	7.8	24	3.2	97	9.5	3	3.0	394	7.1
Total	884	100.0	1050	100.0	1750	100.0	739	100.0	1020	100.0	99	100.0	5542	100.0

Table A1.4. Number and percentage of advertisements, by product type and channel (all days)

Type of product advertised	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Foods and beverages	564	34.7	672	34.8	1206	35.1	283	19.1	730	36.9	39	20.7	3494	32.8
Clothing, footwear	0	0.0	0	0.0	38	1.1	0	0.0	0	0.0	0	0.0	38	0.4
Education	0	0.0	4	0.2	0	0.0	0	0.0	0	0.0	0	0.0	4	0.0
Finance and construction services	42	2.6	124	6.4	206	6.0	12	0.8	78	3.9	0	0.0	462	4.3
Household cleaning/washing agents	218	13.4	78	4.0	191	5.6	151	10.2	158	8.0	0	0.0	796	7.5
Household electrical appliances	19	1.2	43	2.2	89	2.6	1	0.1	14	0.7	0	0.0	166	1.6
Motoring	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Veterinary goods	60	3.7	8	0.4	6	0.2	21	1.4	74	3.7	0	0.0	169	1.6
Pharmaceutical products	102	6.3	197	10.2	293	8.5	75	5.1	122	6.2	0	0.0	789	7.4
Public announcements	0	0.0	4	0.2	2	0.1	9	0.6	0	0.0	0	0.0	15	0.1
Publishing activity	0	0.0	0	0.0	4	0.1	0	0.0	0	0.0	0	0.0	4	0.0
Retail sales and orders by mail	12	0.7	28	1.4	120	3.5	29	2.0	12	0.6	0	0.0	201	1.9
Toiletries	355	21.8	273	14.1	416	12.1	415	28.1	312	15.7	0	0.0	1771	16.6
Toys	3	0.2	0	0.0	12	0.3	2	0.1	12	0.6	0	0.0	29	0.3
Travel, transportation, holidays	0	0.0	2	0.1	1	0.0	3	0.2	0	0.0	0	0.0	6	0.1
Utilities	42	2.6	62	3.2	33	1.0	63	4.3	46	2.3	0	0.0	246	2.3
Channel advertising	120	7.4	297	15.4	481	14.0	344	23.3	309	15.6	119	63.3	1670	15.7
Other	28	1.7	63	3.3	97	2.8	35	2.4	29	1.5	5	2.7	257	2.4
Baby, infant food up to 3 years	59	3.6	53	2.7	40	1.2	21	1.4	41	2.1	0	0.0	214	2.0
Social advertising	3	0.2	23	1.2	0	0.0	15	1.0	0	0.0	25	13.3	66	0.6
Sports goods	0	0.0	0	0.0	25	0.7	0	0.0	44	2.2	0	0.0	69	0.6
SMS entertainment platform	0	0.0	0	0.0	175	5.1	0	0.0	0	0.0	0	0.0	175	1.6
Total	1627	100.0	1932	100.0	3435	100.0	1479	100.0	1981	100.0	188	100.0	10 642	100.0

Table A1.5. Number and percentage of advertisements, by product type and channel (weekdays)

Type of product advertised	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Foods and beverages	236	31.8	254	28.8	600	35.6	144	19.5	322	33.5	19	21.3	1575	30.9
Clothing, footwear	0	0.0	0	0.0	13	0.8	0	0.0	0	0.0	0	0.0	13	0.3
Education	0	0.0	4	0.5	0	0.0	0	0.0	0	0.0	0	0.0	4	0.1
Finance and construction services	24	3.2	86	9.8	48	2.8	8	1.1	37	3.9	0	0.0	203	4.0
Household cleaning/washing agents	101	13.6	44	5.0	86	5.1	71	9.6	83	8.6	0	0.0	385	7.5
Household electrical appliances	10	1.3	10	1.1	39	2.3	0	0.0	12	1.2	0	0.0	71	1.4
Veterinary goods	24	3.2	5	0.6	2	0.1	12	1.6	35	3.6	0	0.0	78	1.5
Pharmaceutical products	51	6.9	83	9.4	175	10.4	45	6.1	77	8.0	0	0.0	431	8.5
Public announcements	0	0.0	0	0.0	1	0.1	2	0.3	0	0.0	0	0.0	3	0.1
Publishing activity	0	0.0	0	0.0	4	0.2	0	0.0	0	0.0	0	0.0	4	0.1
Retail sales and orders by mail	8	1.1	9	1.0	32	1.9	12	1.6	7	0.7	0	0.0	68	1.3
Toiletries	181	24.4	117	13.3	215	12.8	206	27.8	150	15.6	0	0.0	869	17.0
Toys	0	0.0	0	0.0	12	0.7	2	0.3	9	0.9	0	0.0	23	0.5
Travel, transportation, holidays	0	0.0	2	0.2	0	0.0	3	0.4	0	0.0	0	0.0	5	0.1
Utilities	22	3.0	39	4.4	15	0.9	44	5.9	24	2.5	0	0.0	144	2.8
Channel advertising	55	7.4	146	16.6	254	15.1	158	21.4	151	15.7	58	65.2	822	16.1
Other	12	1.6	40	4.5	46	2.7	17	2.3	15	1.6	3	3.4	133	2.6
Baby, infant food up to 3 years	16	2.2	35	4.0	24	1.4	10	1.4	15	1.6	0	0.0	100	2.0
Social advertising	3	0.4	8	0.9	0	0.0	6	0.8	0	0.0	9	10.1	26	0.5
Sports goods	0	0.0	0	0.0	17	1.0	0	0.0	24	2.5	0	0.0	41	0.8
SMS entertainment platform	0	0.0	0	0.0	102	6.1	0	0.0	0	0.0	0	0.0	102	2.0
Total	743	100.0	882	100.0	1685	100.0	740	100.0	961	100.0	89	100.0	5100	100.0

Table A1.6. Number and percentage of advertisements, by product type and channel (weekends)

Type of product advertised	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Foods and beverages	328	37.1	418	39.8	606	34.6	139	18.8	408	40.0	20	20.2	1919	34.6
Clothing, footwear	0	0.0	0	0.0	25	1.4	0	0.0	0	0.0	0	0.0	25	0.5
Finance and construction services	18	2.0	38	3.6	158	9.0	4	0.5	41	4.0	0	0.0	259	4.7
Household cleaning/washing agents	117	13.2	34	3.2	105	6.0	80	10.8	75	7.4	0	0.0	411	7.4
Household electrical appliances	9	1.0	33	3.1	50	2.9	1	0.1	2	0.2	0	0.0	95	1.7
Motoring	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Veterinary goods	36	4.1	3	0.3	4	0.2	9	1.2	39	3.8	0	0.0	91	1.6
Pharmaceutical products	51	5.8	114	10.9	118	6.7	30	4.1	45	4.4	0	0.0	358	6.5
Public announcements	0	0.0	4	0.4	1	0.1	7	0.9	0	0.0	0	0.0	12	0.2
Retail sales and orders by mail	4	0.5	19	1.8	88	5.0	17	2.3	5	0.5	0	0.0	133	2.4
Toiletries	174	19.7	156	14.9	201	11.5	209	28.3	162	15.9	0	0.0	902	16.3
Toys	3	0.3	0	0.0	0	0.0	0	0.0	3	0.3	0	0.0	6	0.1
Travel, transportation, holidays	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0	1	0.0
Utilities	20	2.3	23	2.2	18	1.0	19	2.6	22	2.2	0	0.0	102	1.8
Channel advertising	65	7.4	151	14.4	227	13.0	186	25.2	158	15.5	61	61.6	848	15.3
Other	16	1.8	23	2.2	51	2.9	18	2.4	14	1.4	2	2.0	124	2.2
Baby, infant food up to 3 years	43	4.9	18	1.7	16	0.9	11	1.5	26	2.5	0	0.0	114	2.1
Social advertising	0	0.0	15	1.4	0	0.0	9	1.2	0	0.0	16	16.2	40	0.7
Sports goods	0	0.0	0	0.0	8	0.5	0	0.0	20	2.0	0	0.0	28	0.5
SMS entertainment platform	0	0.0	0	0.0	73	4.2	0	0.0	0	0.0	0	0.0	73	1.3
Total	884	100.0	1050	100.0	1750	100.0	739	100.0	1020	100.0	99	100.0	5542	100.0

Table A1.7. Number and percentage of advertisements dedicated to different food and beverage types, by WHO NP code and channel (all days)

WHO NP model food category code	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Chocolate, sugar confectionery, energy bars and other	150	26.6	45	6.7	154	12.8	33	11.7	185	25.3	31	79.5	598	17.1
Bread, bread products, rusks	0	0.0	24	3.6	48	4.0	0	0.0	0	0.0	0	0.0	72	2.1
Processed fruits, vegetables and legumes	0	0.0	0	0.0	12	1.0	0	0.0	0	0.0	0	0.0	12	0.3
Cakes, sweet cookies and pies, other sweet baked goods	15	2.7	33	4.9	37	3.1	1	0.4	28	3.8	0	0.0	114	3.3
Savoury snacks, seeds, nuts	14	2.5	16	2.4	98	8.1	11	3.9	29	4.0	0	0.0	168	4.8
Juices	32	5.7	38	5.7	61	5.1	12	4.2	24	3.3	0	0.0	167	4.8
Milk drinks	34	6.0	58	8.6	89	7.4	18	6.4	25	3.4	0	0.0	224	6.4
Energy drinks	10	1.8	10	1.5	48	4.0	6	2.1	16	2.2	0	0.0	90	2.6
Beverages	121	21.5	147	21.9	239	19.8	81	28.6	171	23.4	8	20.5	767	22.0
Tea, coffee	54	9.6	43	6.4	73	6.1	43	15.2	53	7.3	0	0.0	266	7.6
Frozen sweet food	0	0.0	10	1.5	19	1.6	7	2.5	0	0.0	0	0.0	36	1.0
Breakfast cereals	0	0.0	0	0.0	2	0.2	2	0.7	6	0.8	0	0.0	10	0.3
Yogurt, sour cream and other similar products	51	9.0	103	15.3	134	11.1	51	18.0	31	4.2	0	0.0	370	10.6
Cheese	6	1.1	58	8.6	85	7.0	0	0.0	0	0.0	0	0.0	149	4.3
Cooked foods and ready-to-cook foods	0	0.0	19	2.8	9	0.7	0	0.0	59	8.1	0	0.0	87	2.5
Butter, other fats and oils	17	3.0	12	1.8	24	2.0	1	0.4	21	2.9	0	0.0	75	2.1
Freshly cooked or dry pasta, rice and cereals	0	0.0	0	0.0	0	0.0	0	0.0	14	1.9	0	0.0	14	0.4
Processed meat, poultry, fish	0	0.0	6	0.9	51	4.2	0	0.0	0	0.0	0	0.0	57	1.6
Sauces, seasonings and dressings	60	10.6	50	7.4	23	1.9	17	6.0	68	9.3	0	0.0	218	6.2
Total	564	100.0	672	100.0	1 206	100.0	283	100.0	730	100.0	39	100.0	3494	100.0

Table A1.8. Number and percentage of advertisements dedicated to different food and beverage types, by WHO NP code and channel (weekdays)

WHO NP model food category code	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Chocolate, sugar confectionery, energy bars and other	63	26.7	23	9.1	77	12.8	17	11.8	86	26.7	15	78.9	281	17.8
Bread, bread products, rusks	0	0.0	0	0.0	11	1.8	0	0.0	0	0.0	0	0.0	11	0.7
Processed fruits, vegetables and legumes	0	0.0	0	0.0	7	1.2	0	0.0	0	0.0	0	0.0	7	0.4
Cakes, sweet cookies and pies, other sweet baked goods	7	3.0	21	8.3	18	3.0	0	0.0	13	4.0	0	0.0	59	3.7
Savoury snacks, seeds, nuts	8	3.4	6	2.4	64	10.7	7	4.9	10	3.1	0	0.0	95	6.0
Juices	0	0.0	0	0.0	35	5.8	6	4.2	2	0.6	0	0.0	43	2.7
Milk drinks	12	5.1	30	11.8	57	9.5	8	5.6	15	4.7	0	0.0	122	7.7
Energy drinks	2	0.8	6	2.4	45	7.5	2	1.4	4	1.2	0	0.0	59	3.7
Beverages	47	19.9	46	18.1	94	15.7	33	22.9	83	25.8	4	21.1	307	19.5
Tea, coffee	36	15.3	13	5.1	39	6.5	30	20.8	21	6.5	0	0.0	139	8.8
Breakfast cereals	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	0	0.0	1	0.1
Yogurt, sour cream and other similar products	26	11.0	56	22.0	75	12.5	31	21.5	14	4.3	0	0.0	202	12.8
Cheese	0	0.0	6	2.4	39	6.5	0	0.0	0	0.0	0	0.0	45	2.9
Cooked foods and ready-to-cook foods	0	0.0	19	7.5	9	1.5	0	0.0	20	6.2	0	0.0	48	3.0
Butter, other fats and oils	6	2.5	0	0.0	6	1.0	0	0.0	10	3.1	0	0.0	22	1.4
Freshly cooked or dry pasta, rice and cereals	0	0.0	0	0.0	0	0.0	0	0.0	8	2.5	0	0.0	8	0.5
Processed meat, poultry, fish	0	0.0	0	0.0	14	2.3	0	0.0	0	0.0	0	0.0	14	0.9
Sauces, seasonings and dressings	29	12.3	28	11.0	10	1.7	9	6.3	36	11.2	0	0.0	112	7.1
Total	236	100.0	254	100.0	600	100.0	144	100.0	322	100.0	19	100.0	1575	100.0

Table A1.9. Number and percentage of advertisements dedicated to different food and beverage types, by WHO NP code and channel (weekends)

WHO NP model food category code	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Chocolate, sugar confectionery, energy bars and other	87	26.5	22	5.3	77	12.7	16	11.5	99	24.3	16	80.0	317	16.5
Bread, bread products, rusks	0	0.0	24	5.7	37	6.1	0	0.0	0	0.0	0	0.0	61	3.2
Processed fruits, vegetables and legumes	0	0.0	0	0.0	5	0.8	0	0.0	0	0.0	0	0.0	5	0.3
Cakes, sweet cookies and pies, other sweet baked goods	8	2.4	12	2.9	19	3.1	1	0.7	15	3.7	0	0.0	55	2.9
Savoury snacks, seeds, nuts	6	1.8	10	2.4	34	5.6	4	2.9	19	4.7	0	0.0	73	3.8
Juices	32	9.8	38	9.1	26	4.3	6	4.3	22	5.4	0	0.0	124	6.5
Milk drinks	22	6.7	28	6.7	32	5.3	10	7.2	10	2.5	0	0.0	102	5.3
Energy drinks	8	2.4	4	1.0	3	0.5	4	2.9	12	2.9	0	0.0	31	1.6
Beverages	74	22.6	101	24.2	145	23.9	48	34.5	88	21.6	4	20.0	460	24.0
Tea, coffee	18	5.5	30	7.2	34	5.6	13	9.4	32	7.8	0	0.0	127	6.6
Frozen sweet food	0	0.0	10	2.4	19	3.1	7	5.0	0	0.0	0	0.0	36	1.9
Breakfast cereals	0	0.0	0	0.0	2	0.3	1	0.7	6	1.5	0	0.0	9	0.5
Yogurt, sour cream and other similar products	25	7.6	47	11.2	59	9.7	20	14.4	17	4.2	0	0.0	168	8.8
Cheese	6	1.8	52	12.4	46	7.6	0	0.0	0	0.0	0	0.0	104	5.4
Cooked foods and ready-to-cook foods	0	0.0	0	0.0	0	0.0	0	0.0	39	9.6	0	0.0	39	2.0
Butter, other fats and oils	11	3.4	12	2.9	18	3.0	1	0.7	11	2.7	0	0.0	53	2.8
Freshly cooked or dry pasta, rice and cereals	0	0.0	0	0.0	0	0.0	0	0.0	6	1.5	0	0.0	6	0.3
Processed meat, poultry, fish	0	0.0	6	1.4	37	6.1	0	0.0	0	0.0	0	0.0	43	2.2
Sauces, seasonings and dressings	31	9.5	22	5.3	13	2.1	8	5.8	32	7.8	0	0.0	106	5.5
Total	328	100.0	418	100.0	606	100.0	139	100.0	408	100.0	20	100.0	1919	100.0

Table A1.10. Number and percentage of food advertisements permissible for children according to the WHO NP model, by channel (all days)

Marketing status according to WHO NP model	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Marketing to children not permitted	414	73.4	463	68.9	809	67.1	205	72.4	596	81.6	39	100.0	2526	72.3
Marketing to children permitted	115	20.4	133	19.8	245	20.3	77	27.2	113	15.5	0	0.0	683	19.5
Unknown	35	6.2	76	11.3	152	12.6	1	0.4	21	2.9	0	0.0	285	8.2
Total	564	100.0	672	100.0	1206	100.0	283	100.0	730	100.0	39	100.0	3494	100.0

Table A1.11. Number and percentage of food advertisements permissible for children according to the WHO NP model, by channel (weekdays)

Marketing status according to WHO NP model	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Marketing to children not permitted	172	72.9	198	78.0	441	73.5	97	67.4	256	79.5	19	100.0	1183	75.1
Marketing to children permitted	51	21.6	35	13.8	86	14.3	47	32.6	56	17.4	0	0.0	275	17.5
Unknown	13	5.5	21	8.3	73	12.2	0	0.0	10	3.1	0	0.0	117	7.4
Total	236	100.0	254	100.0	600	100.0	144	100.0	322	100.0	19	100.0	1575	100.0

Table A1.12. Number and percentage of food advertisements permissible for children according to the WHO NP model, by channel (weekends)

Marketing status according to WHO NP model	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Marketing to children not permitted	242	73.8	265	63.4	368	60.7	108	77.7	340	83.3	20	100.0	1343	70.0
Marketing to children permitted	64	19.5	98	23.4	159	26.2	30	21.6	57	14.0	0	0.0	408	21.3
Unknown	22	6.7	55	13.2	79	13.0	1	0.7	11	2.7	0	0.0	168	8.8
Total	328	100.0	418	100.0	606	100.0	139	100.0	408	100.0	20	100.0	1919	100.0

Table A1.13. Number and percentage of food advertisements per two-hour slot, by channel (all days)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	14	2.5	8	1.2	95	7.9	11	3.9	0	0.0	4	10.3	132	3.8
08:00–10:00	69	12.2	3	0.4	131	10.9	31	11.0	100	13.7	4	10.3	338	9.7
10:00–12:00	87	15.4	142	21.1	121	10.0	29	10.2	99	13.6	7	17.9	485	13.9
12:00–14:00	62	11.0	136	20.2	116	9.6	60	21.2	106	14.5	0	0.0	480	13.7
14:00–16:00	81	14.4	125	18.6	168	13.9	37	13.1	66	9.0	0	0.0	477	13.7
16:00–18:00	83	14.7	95	14.1	158	13.1	50	17.7	105	14.4	5	12.8	496	14.2
18:00–20:00	100	17.7	100	14.9	219	18.2	42	14.8	126	17.3	15	38.5	602	17.2
20:00–22:00	68	12.1	63	9.4	198	16.4	23	8.1	128	17.5	4	10.3	484	13.9
Total	564	100.0	672	100.0	1206	100.0	283	100.0	730	100.0	39	100.0	3494	100.0

Table A1.14. Number and percentage of food advertisements per two-hour slot, by channel (weekdays)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	3	1.3	0	0.0	52	8.7	10	6.9	0	0.0	2	10.5	67	4.3
08:00–10:00	32	13.6	0	0.0	74	12.3	11	7.6	41	12.7	3	15.8	161	10.2
10:00–12:00	37	15.7	44	17.3	54	9.0	15	10.4	51	15.8	2	10.5	203	12.9
12:00–14:00	22	9.3	62	24.4	44	7.3	32	22.2	47	14.6	0	0.0	207	13.1
14:00–16:00	42	17.8	56	22.0	81	13.5	24	16.7	15	4.7	0	0.0	218	13.8
16:00–18:00	33	14.0	30	11.8	82	13.7	15	10.4	65	20.2	3	15.8	228	14.5
18:00–20:00	39	16.5	37	14.6	116	19.3	22	15.3	48	14.9	7	36.8	269	17.1
20:00–22:00	28	11.9	25	9.8	97	16.2	15	10.4	55	17.1	2	10.5	222	14.1
Total	236	100.0	254	100.0	600	100.0	144	100.0	322	100.0	19	100.0	1575	100.0

Table A1.15. Number and percentage of food advertisements per two-hour slot, by channel (weekends)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	11	3.4	8	1.9	43	7.1	1	0.7	0	0.0	2	10.0	65	3.4
08:00–10:00	37	11.3	3	0.7	57	9.4	20	14.4	59	14.5	1	5.0	177	9.2
10:00–12:00	50	15.2	98	23.4	67	11.1	14	10.1	48	11.8	5	25.0	282	14.7
12:00–14:00	40	12.2	74	17.7	72	11.9	28	20.1	59	14.5	0	0.0	273	14.2
14:00–16:00	39	11.9	69	16.5	87	14.4	13	9.4	51	12.5	0	0.0	259	13.5
16:00–18:00	50	15.2	65	15.6	76	12.5	35	25.2	40	9.8	2	10.0	268	14.0
18:00–20:00	61	18.6	63	15.1	103	17.0	20	14.4	78	19.1	8	40.0	333	17.4
20:00–22:00	40	12.2	38	9.1	101	16.7	8	5.8	73	17.9	2	10.0	262	13.7
Total	328	100.0	418	100.0	606	100.0	139	100.0	408	100.0	20	100.0	1919	100.0

Table A1.16. Number and percentage of advertisements for foods not permissible for marketing to children according to the WHO NP model per two-hour slot, by channel (all days)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	10	2.4	0	0.0	61	7.5	7	3.4	0	0.0	4	10.3	82	3.2
08:00–10:00	50	12.1	0	0.0	88	10.9	18	8.8	81	13.6	4	10.3	241	9.5
10:00–12:00	64	15.5	98	21.2	78	9.6	22	10.7	80	13.4	7	17.9	349	13.8
12:00–14:00	49	11.8	98	21.2	78	9.6	46	22.4	88	14.8	0	0.0	359	14.2
14:00–16:00	54	13.0	92	19.9	108	13.3	30	14.6	55	9.2	0	0.0	339	13.4
16:00–18:00	58	14.0	73	15.8	119	14.7	38	18.5	86	14.4	5	12.8	379	15.0
18:00–20:00	72	17.4	67	14.5	154	19.0	30	14.6	101	16.9	15	38.5	439	17.4
20:00–22:00	57	13.8	35	7.6	123	15.2	14	6.8	105	17.6	4	10.3	338	13.4
Total	414	100.0	463	100.0	809	100.0	205	100.0	596	100.0	39	100.0	2526	100.0

Table A1.17. Number and percentage of advertisements for foods not permissible for marketing to children according to the WHO NP model per two-hour slot, by channel (weekdays)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	1	0.6	0	0.0	42	9.5	6	6.2	0	0.0	2	10.5	51	4.3
08:00–10:00	23	13.4	0	0.0	57	12.9	6	6.2	32	12.5	3	15.8	121	10.2
10:00–12:00	30	17.4	36	18.2	38	8.6	10	10.3	42	16.4	2	10.5	158	13.4
12:00–14:00	16	9.3	47	23.7	31	7.0	22	22.7	35	13.7	0	0.0	151	12.8
14:00–16:00	29	16.9	43	21.7	54	12.2	20	20.6	13	5.1	0	0.0	159	13.4
16:00–18:00	24	14.0	26	13.1	66	15.0	11	11.3	52	20.3	3	15.8	182	15.4
18:00–20:00	26	15.1	27	13.6	82	18.6	14	14.4	36	14.1	7	36.8	192	16.2
20:00–22:00	23	13.4	19	9.6	71	16.1	8	8.2	46	18.0	2	10.5	169	14.3
Total	172	100.0	198	100.0	441	100.0	97	100.0	256	100.0	19	100.0	1183	100.0

Table A1.18. Number and percentage of advertisements for foods not permissible for marketing to children according to the WHO NP model per two-hour slot, by channel (weekends)

Two-hour interval/slot	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
06:00–08:00	9	3.7	0	0.0	19	5.2	1	0.9	0	0.0	2	10.0	31	2.3
08:00–10:00	27	11.2	0	0.0	31	8.4	12	11.1	49	14.4	1	5.0	120	8.9
10:00–12:00	34	14.0	62	23.4	40	10.9	12	11.1	38	11.2	5	25.0	191	14.2
12:00–14:00	33	13.6	51	19.2	47	12.8	24	22.2	53	15.6	0	0.0	208	15.5
14:00–16:00	25	10.3	49	18.5	54	14.7	10	9.3	42	12.4	0	0.0	180	13.4
16:00–18:00	34	14.0	47	17.7	53	14.4	27	25.0	34	10.0	2	10.0	197	14.7
18:00–20:00	46	19.0	40	15.1	72	19.6	16	14.8	65	19.1	8	40.0	247	18.4
20:00–22:00	34	14.0	16	6.0	52	14.1	6	5.6	59	17.4	2	10.0	169	12.6
Total	242	100.0	265	100.0	368	100.0	108	100.0	340	100.0	20	100.0	1343	100.0

Table A1.19. Number and percentage of advertisements for foods permissible for marketing to children, by channel and primary persuasive appeal

Primary persuasive appeal	TV channel										Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK			
	n	%	n	%	n	%	n	%	n	%	n	%
Convenience	6	5.2	22	16.5	11	4.5	0	0.0	0	0.0	39	5.7
Health	0	0.0	0	0.0	2	0.8	1	1.3	0	0.0	3	0.4
Energy	4	3.5	18	13.5	54	22.0	5	6.5	2	1.8	83	12.2
Pleasure	34	29.6	20	15.0	13	5.3	26	33.8	29	25.7	122	17.9
Status/sex appeal	0	0.0	0	0.0	4	1.6	0	0.0	0	0.0	4	0.6
Reward/competition	18	15.7	4	3.0	1	0.4	5	6.5	26	23.0	54	7.9
Choice of products	20	17.4	6	4.5	30	12.2	6	7.8	25	22.1	87	12.7
Delight	0	0.0	1	0.8	12	4.9	4	5.2	2	1.8	19	2.8
Introduction/launch of new product	0	0.0	15	11.3	32	13.1	5	6.5	10	8.8	62	9.1
Corporate information	16	13.9	32	24.1	44	18.0	18	23.4	8	7.1	118	17.3
Humour	0	0.0	6	4.5	29	11.8	0	0.0	0	0.0	35	5.1
Other	17	14.8	9	6.8	13	5.3	7	9.1	11	9.7	57	8.3
Total	115	100.0	133	100.0	245	100.0	77	100.0	113	100.0	683	100.0

Table A1.20. Number and percentage of advertisements for foods impermissible for marketing to children, by channel and primary persuasive appeal

Primary persuasive appeal	TV channel												Total	
	1 Channel Eurasia		Astana TV		31 Channel		Qazaqstan		NTK		Balapan			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Taste	72	17.4	131	28.3	199	24.6	45	22.0	135	22.7	31	79.5	613	24.3
Health	66	15.9	72	15.6	62	7.7	36	17.6	65	10.9	0	0.0	301	11.9
Energy	50	12.1	18	3.9	65	8.0	23	11.2	50	8.4	8	20.5	214	8.5
Uniqueness	64	15.5	19	4.1	40	4.9	22	10.7	58	9.7	0	0.0	203	8.0
Pleasure	47	11.4	77	16.6	175	21.6	14	6.8	91	15.3	0	0.0	404	16.0
Status/sex appeal	37	8.9	0	0.0	0	0.0	6	2.9	33	5.5	0	0.0	76	3.0
Reward/competition	20	4.8	57	12.3	106	13.1	24	11.7	33	5.5	0	0.0	240	9.5
Delight	16	3.9	19	4.1	16	2.0	10	4.9	55	9.2	0	0.0	116	4.6
Introduction/launch of new product	42	10.1	53	11.4	115	14.2	23	11.2	67	11.2	0	0.0	300	11.9
Corporate information	0	0.0	3	0.6	0	0.0	0	0.0	0	0.0	0	0.0	3	0.1
Humour	0	0.0	4	0.9	16	2.0	2	1.0	9	1.5	0	0.0	31	1.2
Other	0	0.0	10	2.2	15	1.9	0	0.0	0	0.0	0	0.0	25	1.0
Total	414	100.0	463	100.0	809	100.0	205	100.0	596	100.0	39	100.0	2526	100.0

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