Review article

Health-related food advertising on kid YouTuber vlogger channels

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ABSTRACT

This article seeks to identify the presence of food products on channels featuring kid YouTuber vloggers (or 'kidfluencers') aged under 14 years old in Spain, the United States and the United Kingdom, to determine if they are encouraging a healthy diet. Content analysis was performed on a sample of 450 videos (6750 min) posted within a three-year time span. The results show that, with regard to the foods present in the videos, those most commonly present (71%) are non-essential and unhealthy foods and the United States is the country with the highest percentage of non-essential and unhealthy foods, followed by the United Kingdom and Spain. The channels in Spain show a higher number of healthy foods compared to the rest (N = 11). The results suggest a relationship between consumer habits and what kid vloggers reflect in their channels.

1. Introduction

Promoting health and a healthy diet is a constant at the World Health Organization (WHO, 2018) and in the EU regulations with regard to child obesity as well as other health problems. In 2017, it was calculated that the number of children with obesity had multiplied by 10 around the world in the previous four decades and it is expected more children and adolescents will be obese than moderately or severely underweight by 2022 (WHO, 2017). In 2016, the number of obese children aged 5 to 19 had increased to 124 million and an additional 216 million were over-weight (WHO, 2016). This represents a ten-fold increase from the 11 million children and adolescents who were obese in 1975 (White, 2020) while the world's population has not even doubled (World Bank, 2020).

Promoting food in kids' content is a habitual practice and has led to abundant literature on the subject (Coates et al., 2020; Coates et al., 2019a and b; White, 2020; Boyland and Whalen, 2015; Folkvord et al., 2014; Ramos and Navas, 2015; WHO, 2012). However, because it is a nascent reality there has been considerably less research relating to this issue that focuses on children and video-swapping platforms, as noted by De Veirman, Hudders and Nelson (2019).

This prompts the need to carry out research such as the study in question here, which offers an up-to-date vision of the presence of food in the media outlets that are closest to children: platforms such as YouTube. This platform (along with school and the family) is where children currently find a considerable part of their social models, as has been demonstrated by a number of different studies (García Jiménez,

Tur-Viñes & Pastor Ruíz, 2018; Livingstone et al., 2015; Garmendia et al., 2016; Asociación para la Investigación de Medios de Comunicación, 2018; Ofcom, 2019).

Therefore, this study aims to identify the health-related food products that appear in the most influential kid YouTuber vloggers (or 'kid-fluencers') aged under 14 years in Spain, the United States and the United Kingdom, in order to discover the type of food that is publicised and serves as a model of consumption for other children. Spain is an unusual country as regards kid YouTubers, as it has several of the top ranked YouTubers in the world (the Social Blade ranking). The United States was the pioneer (EvanTube) and continues to have new candidates in excellent positions (RyanToysReview, ranked 30th in the world). The United Kingdom has been examined because of its cultural difference and hence serves as a contrast to the other two cases being analysed.

Given the limited work carried out on this area and the comparative approach considered here, it represents significant progress in the research and a unique contribution in the area of food and health.

Kid YouTubers are gaining relevance as a source of content and creativity on video-sharing platforms thanks to the rise in popularity of this channel, according to the Ofcom report (2019). The pioneer was EvanTubeHD in 2011, followed by Ryan – who in 2018, aged 7 years old, had his channel RyanToysReview included on the Forbes list thanks to revenues of 22 million dollars (Bergen, 2019) – and by other children such as Vlad and Nikita, who as of 2020 have 51 million subscribers (Social Blade, 2020). Prominent among them is the channel of kid You-Tuber Ryan, which has 22.3 million followers and has had almost 33

billion visits since he and his parents launched his main channel in March 2015 (Social Blade, 2020).

This situation indicates that children consume more content on YouTube than on television. Children aged between 8 and 11 prefer to watch YouTube (49%) compared to the television (14%), whereas children aged between 12 and 15 years old prefer YouTube (49%) over television (16%) (Ofcom, 2019). Consumption of content on YouTube increases with age, with viewing of vloggers among YouTube users rising from 15% of children aged 3–4 years old, to 25% for children aged between 5 and 7 years old, to 40% for those aged from 8 to 11, and 52% among 12–15 year olds (Martínez-Pastor et al., 2020; Ofcom, 2019). Channels featuring children who are content creators are encouraged by their parents because for minors must be aged over 14 years old to open a YouTube account, and their parents handle the production elements of the videos such as recording, editing and circulating them (Bergen, 2019). Much of their material deals with health-related content (food and beverages) through challenges or visits to fast-food restaurants, where the kid YouTubers become true influencers for other children by imitation (Brown and Hayes, 2008); this makes brands keen to be present on this type of channel (Goldate, 1997; Hartmann, 2004; Marsh, 2015).

Therefore, it is necessary to focus attention on this content and attempt to identify what is being promoted on these channels in the area of children's diet, given their age and vulnerability as a group.

2. Previous studies

There is an abundance of literature from different perspectives about health-related food marketing and children, ranging from media, format and regulation to parental responsibility.

Some research relates to television, health and children, such as the work by Boyland and Halford (2013), which concluded that the majority of food adverts aimed at children are for foods high in fat, salt and sugar, and also showed that exposure to such adverts increases the intake of these products. Additionally, Harris et al. (2013) demonstrated in their work that during 2009 in the United States only 45%–48% of the food adverts watched by children (aged 2–11 years) were in line with the Children's Food and Beverage Advertising Initiative (CFBAI), which aims to reduce unhealthy marketing to children, of 'child-directed advertising' (and therefore limited by guidelines on nutritional standards).

Other studies are related to digital media, such as the research by Jones and Reid (2010) who investigated the websites of the main Australian food brands in order to determine the practices used to attract the attention of children and teens through their content. Along the same lines, another noteworthy study is that by Kelly et al. (2008) which analysed food product websites and popular children's websites in Australia and found that the marketing strategies were skewed towards unhealthy foods and generated content to reinforce a strong brand image and increase brand familiarity among children. The report by Tatlow--Golden et al. (2016) examines trends in digital media and the implications for children's privacy in these media.

Other research has focused on advergames and the marketing of healthy or unhealthy products. One example of this is the work by Folkvord et al. (2013), who analysed the degree of consumption of energy-dense snacks and fruit in relation to the stimuli provided by different advergames. The methodology used involved 270 children (aged 8–10 years) playing an advergame that promoted these two products and non-food products; their findings were that playing an advergame promoting food always increased intake, regardless of what was being promoted. Paek, Quilliam, Kim, Weatherspoon, Rifon and Lee (2014) came to very similar conclusions in their study. Furthermore, Harris et al. (2012) examined US children's exposure to food company websites containing advergames and their findings indicated that children consumed healthier products if the game focused on this subject.

Other works such as that by Pettigrew et al. (2013) and the work by Bakir and Vitell (2010) focus on the role of parents with regard to food marketing and their children. The former study centred on the impact of

television and Internet advertising on parents and their children (aged 8–14 years) in Australia by showing the two target groups adverts from each medium. Their findings showed that parents are not immune to adverts, and similar trends were noted with children, which is significant if parents are expected to be responsible for mediating any effects of such advertising on their children. The work by Bakir and Vitell (2010) focused on parents, government agencies and industry experts, to examine food advertising targeting children.

Studies on health on kid YouTuber channels are relatively recent, beginning a decade ago. De Veirman et al. (2019) created a compilation of the few studies which have been conducted on influencers, advertising and children aged under 12 years old. Other research focuses on the advertising which appears in YouTube formats in kid YouTuber channels (Tan et al., 2018), on which types of food products appear in these videos (Araújo et al., 2017) and on children's perceptions when they view advertising messages for unhealthy foods (Coates et al., 2020 and 2019a and b).

Tan et al. (2018) concentrated on studying the advertising for food and beverages appearing while the videos are being viewed, identifying the YouTube formats in which they appear and studying the management of the channels by the parents of the children in a case study (Malaysia). The main conclusions drawn were that advertisements for unhealthy food predominate in the adverts aimed at children and that appropriate regulation is necessary for these digital platforms. The study performed by Araújo et al. (2017) related to discovering patterns of creation in kid YouTube vlogger channels and identifying the elements which could increase their attraction for users. They categorised product types which included foods, and the latter were recurring content in the videos. In fact, one of the lines of research proposed in their study was the idea of promoting educational and healthy eating videos among children to prevent the risk of child obesity.

Moving forward in this line of research, Coates et al. (2020) conducted a study in which, through qualitative research using focus groups, they studied how YouTuber food-product advertising content affects children (10 and 11 years old). The results showed that children felt that the YouTubers' content entertained them and the commercial messages emerging generated in them a sympathetic attitude towards these as part of that entertainment. This meant, according to Coates et al., that exposure to foods high in fat, salt and sugar was present in these channels and should be reduced due to the influence it has on children, as they could perceive it as something that is positive. An earlier study into this line of research is that conducted by Folkvord et al. (2019) which sought to find out if children understand the brands and products which appear in the blogs. An additional earlier study was also carried out by Coates et al. (2019b) and attempted to determine the influence of influencer marketing content. They conducted a survey of 176 children aged between 9 and 11 years old to find out if they felt they were attracted by influencers who marketed "healthy" foods and "unhealthy foods". Their results showed that children increased their intake of foods after watching influencers who were marketing unhealthy foods, while this did not occur with healthy foods. It is striking that the study states that increasing marketing of healthy foods on social media may not be an effective strategy to foster healthy eating habits in children and has opened an avenue of research about this question. The work by Smit et al. (2019) consisted of a survey conducted on 453 children aged from 8 to 12 years old in which they studied frequency of consumption of YouTuber content and the exposure given to unhealthy foods and beverages by these influencers. Their results demonstrated the increase in uptake of these products due to the YouTubers' influence.

Along the same lines, the research by Qutteina et al. (2019) explored messages about foods that adolescents (12–18 years old) found on social media, and analysed the type of food and the marketing strategies employed. Their methodology involved 21 Flemish teenagers taking screenshots over one week of food images. This resulted in a total of 611 images, among which the teenagers found more messages about unhealthy foods than about healthy foods, followed by brands, associated

with social activities such as eating out with friends. They often found images of foods marketed through earned or paid media food marketing.

Other studies linked to the subject are those concerning advertising aimed at children through the kid vlogger content on YouTube, which has been covered by Lange (2014). This study posited that children begin to create content on YouTube only to entertain themselves, but that gradually over time (with the complicity of their parents) they transform the channel into a professional medium based on the revenue from explicit or surreptitious advertising (Martínez-Pastor et al., 2020). Feijoo and Pavez (2019) held that the presence of this type of advertising provides the livelihood of the YouTube channels aimed at children, in which significant engagement (Westenberg, 2016) and enormous Electronic Word of Mouth (eWOM) is generated among their peers (Global Web Index, 2014; Lange, 2014). Research has made clear that children become influencers by imitation (Brown and Hayes, 2008) and thus brands seek to be present on this type of channel (Goldate, 1997; Hartmann, 2004; Marsh, 2015). Fears about infringements of advertising rights has already been thoroughly addressed (Kerkhof, 2019; Feijoo & Pávez, 2019; Martínez Pastor (2019); Martínez-Pastor et al., 2017; Wu, 2016; Reid, 2014) although not sufficiently resolved (FTC, 2019; ASA, 2018; ASA, 2017; FTC, 2015).

These studies make it patent that YouTube is a channel through which children absorb all types of content, influenced by their idols, and that this must be taken into account and put under the spotlight urgently in order to safeguard children from content which is unsuitable for a healthy diet.

3. Objectives and hypothesis

The general objective is to identify which types of foods appear in kid YouTuber vlogger channels and their relationship to a healthy diet.

The hypotheses put forward were the following:

H1. The predominant foods and beverages in channels starring kid YouTubers are those pertaining to unhealthy diets. The healthy foods and beverages present are expected to be in the minority (Castelló-Martínez & Tur-Viñes, 2020a, 2020b; Coates et al., 2020; Harris, 2019; Lupton, 2020; Tur-Viñes and Castello-Martinez, 2021; De Veirman et al., 2019).

H2. The proportion of unhealthy food videos is greater in channels aimed at minors in the United States, followed by the United Kingdom

(OECD, 2017). Spain is the country with the least proportion of unhealthy food videos.

The secondary objectives were:

SO 1. To identify the frequency of the videos and products of the kidfluencers with YouTube channels who include food-based content or content involving toys related to the area of diet.

SO 2. To categorise the food products based on the classification designed by Ponce and de Ayala (2019), Kelly et al. (2010) and Whalen et al. (2018) to determine the presence of healthy products compared to unhealthy products.

SO 3. To identify possible differences per country.

4. Methodology

4.1. Sample

The main kidfluencer YouTube channels in Spain, the United Kingdom and the United States were identified, using the following inclusion criteria: starring children aged under 14 years old (themselves), classified as A or B with average views per video of more than 1000 and a video posting frequency of more than two videos a week (Table 1) (this information is known due to the information contained in the videos or provided by the channels themselves), classified as A or B (Social Blade ranking: the channels classified by this database as A+, A, or A- SB, followed by B, are the most influential channels) with an average of more than 1000 views per video and a weekly average of minutes of video posted for Group 1 of more than 30 min and for Group 2 of less than 30 min (Table 1). The period analysed ranges from January 2016 to February 2019. Although it is true that all the videos with 1000 or more view s have been included in the study, these were classified into two types: more than 30 min and less than 30 min. This disparity in running time is because there is no standard length for a video on YouTube (unlike in conventional advertising, for example, where the standard length for an advertisement is 10–30 s).

An analysis was performed of 460 videos from 2016 to 2019 (random sample from the 15 channels selected). This analysis detected the videos containing food products or beverages (a total of 86 videos), which resulted in a total of 178 products. Of the total number of products that appear in the 460 videos analysed in the sample, almost half are food

Table 1. Profile of the channels analysed.

Origin	Name of channel	Classification	Position in ranking (in their country)	Position in ranking (general)	Subscribers	Channel start date	Group (according to weekly average of minutes of video) Group 1 > 30 min Group 2 < 30 min
SPAIN	Las Ratitas 2016–2019	A	2	68	7,780,725	2015	2
	TheCrazyHaacks	B+	62	3,034	2,606,544	2015	1
	Jugando con Aby	B+	53	2,718	1,372,471	2015	2
	Mikel Tube	A	61	390	2,398,017	2015	1
	Los juguetes de Arantxa	B+	69	3,403	2,363,027	2015	1
UNITED KINGDOM	NatyTubeFun	A	4	153	1,106,244	2011	2
	Emily Tube	A	15	408	8,028,579	2014	1
	ToysAndMe	A	61	2,215	9,631,930	2014	1
	HitzhToys	B+	190	6,919	622, 000	2014	1
	LuckySurpriseToysReview	B	+250	11,512	2,599,417	2016	2
UNITED STATES	RyanToysReview	A+	10	30	17,004,486	2015	1
	EvanTubeHD	B+	+250	3,757	5,919,552	2011	2
	Naiah And Elli Toys Show	B	+250	5,009	1,719,468	2015	1
	Hailey'sMagicalPlayhouse	B	+250	8,942	1,492,720	2015	2
	Hulyan Maya	B	+250	6,210	1,660,008	2008	1

Source: Own compilation based on Social Blade (current up to 2019).

sector products (48.3%) featuring in 86 videos, as a number of products or services may appear in a single video. The total number of videos is 6956. The sample is 6.6%. Assuming a significance level of alpha = 0.05 and applying the finite population corrector, the selection of 460 videos out of the total population implies an error of 4.42% (1), which is an acceptable error. Since we do not know the p-ratio, we have assumed the most conservative case in which p = 0.5.

$$n = \frac{N^* Z_\alpha^2 {}^* p^* (1-p)}{(N-1)^* \varepsilon^2 + Z_\alpha^2 {}^* p^* (1-p)} \tag{1}$$

The data was collected by a single coder following the corresponding prior training. To this end, the pre-tests were performed until a sufficient intercoder rate was obtained (Krippendorff alpha coefficient >0.8). The rate was calculated based on three coders.

Descriptive statistics and univariate and multivariate statistical inference were performed.

The three countries selected (the United States, Spain and the United Kingdom) are the benchmarks for kid YouTuber channels. The United States has been the pioneer in this ecosystem since 2011, when the EvanTubeHD channel began. It continues to be a location where current-day successful channels are developing such as the Vlad and Niki YouTube channel, ranked sixth among all YouTubers worldwide. Spain was chosen because the channels from Spanish kid YouTubers were ranked among the top positions over the period under study (specifically, they were ranked between position 68 and position 3,403). The United Kingdom is the benchmark for English-speaking channels in the European Union.

4.2. Variables and instruments

This study used an analysis sheet created by the authors, adapted from the classification of foods used in the work by Ponce and de Ayala (2019), Kelly et al. (2010) and Whalen et al. (2018). The variables used were: channel, origin (Spain, United States and United Kingdom), date, duration, product category (food and others), type of food product, product subcategory (Table 2) and product.

The foods were grouped into three categories according to nutritional content: non-essential and unhealthy foods, essential and healthy foods, and miscellaneous foods, as well as including toys related to diet and kitchen products.

5. Results and discussion

Out of the total number of products that appear in the 450 videos analysed, almost half were products from the field of food (48.3%). This shows how important food-sector products (food and beverages) are in the context of children, as this sample, it must be recalled, contains the most influential kid YouTuber vlogger channels in their respective countries. Therefore the appearance of these topics and products in the videos suggests that they are topics and products of interest to children (one of the possible factors leading to the success of these YouTubers). Of these food products, 71% were non-essential and unhealthy foods. This figure increased to 79% when the related toys and products that appear are taken into account, as they can also be categorised as non-essential and unhealthy (Graph 1).

The amount and type of products linked to food varied between the different countries. The kid vlogger channels in which the greatest number of food products appeared, through their YouTube videos, were those from Spain, amounting to 61% of the total number of products of any type in the Spanish videos, while those from the United Kingdom amounted to 40.5% of the products of any type in the British videos and those from the United States to 37.5%. However, in both the United States and the United Kingdom, most of the food appearing was unhealthy (88% and 74% respectively), whereas in Spain the figure was only 62% (Table 3 and Graph 2). This matches the obesity data

Table 2. Categories and subcategories of products analysed.

Type	Subcategory	Description
Food	Non-essential and Unhealthy	Products considered to be products high in fat, salt or sugar) are: cupcakes, sweet biscuits, savoury biscuits with high fat content, tarts and cakes and buns; cereals with high sugar content and/or low fibre content; snacks, including crisps, popcorn, snack bars, sugary products and nuts coated in sugar or salt; fruit beverages with high sugar content; full-cream milk, yoghurt, custards, dairy puddings and cheese with high levels of salt and fat; ice cream and desserts with high sugar content; chocolate and confectionery; sweets and chewing gum; fast-food restaurants/foodstuffs; butter, jam, oils, sauces with high fat content; sugary beverages; and alcohol.
	Essential and Healthy	This includes all the products which are rich in nutrients and low in calories such as: fruit; bread, rice, pasta and noodles; breakfast cereals and biscuits which are low in sugar; vegetables and vegetable products; low-fat/reduced-fat milk, yoghurt, custard and cheese; meat and similar products; fish, pulses, eggs and nuts; soups, mixed salads; baby food; and bottled water.
	Miscellaneous	These are products containing supplements of vitamins and minerals; tea and coffee; home-delivered food services; supermarkets mainly advertising non-essential foods; supermarkets mainly advertising essential foods.
Toys and related products	Toys related to diet	This includes toys that promote food products and services, such as baby bottles and toys associated with fast food products such as restaurants or dolls.
	Kitchen products	These are products related to preparing products of an unbalanced diet.

Source: Own compilation based on Ponce and de Ayala (2019), Kelly et al. (2010) and Whalen et al. (2018).

pertaining to adults: United States, 38.2%; United Kingdom, 26.9%; and Spain, 16.7% (OECD Obesity Update, 2017 report).
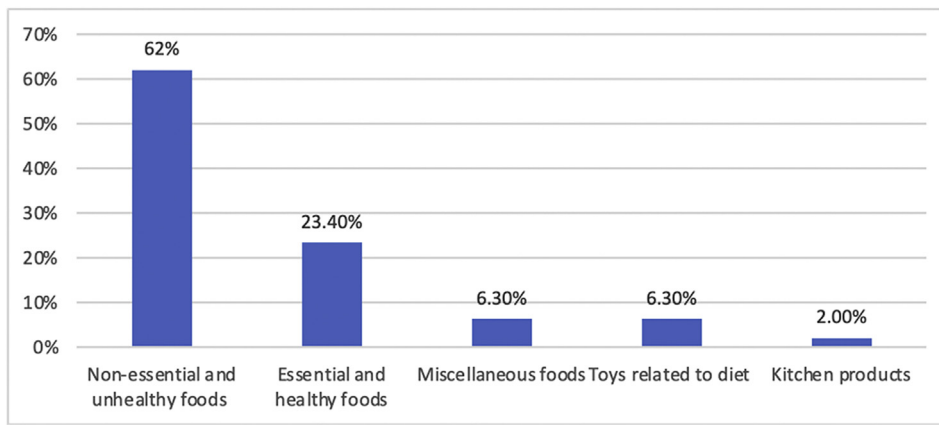
In the case of **Spain**, there was a total of 47 products related to food, of which almost 62% were non-essential and unhealthy foodstuffs (64% when also taking into account kitchen products. Most of these products were related to sugar (72.1% of the total number of unhealthy products, while fatty products represented 24.1% (snacks) (Table 4). Healthy products represented 23.4% of the total, and were fruit and vegetables in almost all the cases (91% with respect to healthy products) (Table 5).

In the **United Kingdom,** the kid vloggers showed many fewer food products in their videos (15 products), but 73% of these were unhealthy. The figure rises to 86.6% if we include kitchen products (Table 4). In this case, the unhealthy products were overwhelmingly related to sugar (82% sugar-related). Healthy products made up just 13.3% of the total and were spread equally (50%) between fruit and spices (Table 5).

The United States provided similar results to those for the United Kingdom, as 87.5% of the food products shown were non-essential and unhealthy products, and had the lowest figure for healthy foods (8.3%), which were represented by processed products (low-sugar cereals and biscuits) (Table 4). In this case, unhealthy products were mostly represented by sugar-related foodstuffs (71.6%), while fatty products (snacks) made up 14.2%, thus offering a similar profile to that of Spain (Table 5).

The results appear to show there is a cultural relationship, although it is partial (absence of ice cream in the case of the United States), which is deserving of a separate study, with this investigation serving potentially as the starting point (Graph 3 and 4).

The data were not analyzed statistically for significance are non essential: there are significant differences between the countries – chi-square, test: p-value = 0.001022. The sample is very small, although the

Graph 1. Breakdown of total of the food-related products in kid YouTuber channels (Spain + United States + United Kingdom).

Table 3. Presence of food products in kid YouTube vlogger channels according to country and product category: Spain, United States and United Kingdom.

Product category	Spain		United Kingdom		USA		Total
	f(x)	%	f(x)	%	f(x)	%	
Non-essential and unhealthy foods	24	62%	11	74%	21	88%	N = 56
Essential and healthy foods	11	23.4%	2	13.3%	2	8.3%	N = 15
Miscellaneous foods	3	6.3%	0	0%	0	0%	N = 3
Toys related to diet	3	6.3%	0	0%	1	4%	N = 4
Kitchen products	1	2%	2	13%	0	0%	N = 3
TOTAL FOOD-RELATED PRODUCTS	47	100%	15	100%	24	100%	N = 81
% of the sum total of food products in the three countries		54,7%		17,4%		27.9%	
TOTAL PRODUCTS (ANY TYPE)	77		37		64		N = 178
Food: of the total amount of products	48.3%						

- Spain and the United States are statistically different populations. The proportion between healthy and unhealthy food videos is different and statistically significant (p < 0,05). Spain has a proportion of healthy food videos that is much higher than that of the United States, as is somewhat assumed in hypothesis 2.
- This difference is not so obvious with Spain and the United Kingdom. The differences are not statistically significant (p > 0,05).
- The difference between the United Kingdom and the United States is much minor (p > 0,5).

The difference between Spain and the United States supports the idea of the contrasting cultures and eating habits between both countries.

The lack of statistical differentiation between Spain and the United Kingdom as well as the United Kingdom and the United States may be due to sample size and/or greater cultural similarities.

The results obtained show that H1 is partially supported, in accordance with the concerns voiced by WHO (2018) and the studies from Tan et al. (2018) and Smit et al. (2019), given that 71% of the food-related products which appear in the 39 videos are unhealthy foods. The United States (88%) and the United Kingdom (74%) are the countries where these products were most present. In this product category, the presence of beverages with high sugar content in the United States stands out in comparison to the United Kingdom and Spain, where chocolates, sweets and ice creams are more present. Spain (23.4%) is noteworthy due to the appearance of healthy products, compared to the United States (8%) and the United Kingdom (13%). From these results, Spain is the country in which most healthy foods are shown. This may be because the challenges the children perform on their YouTube channels use foods they have at home, such as the fruits and vegetables typical of a Mediterranean diet, which contrasts with Anglo-Saxon countries with different diets. In the United States, however, the vast majority of the

chi-square test indicates there are significant differences (0.03297). The other subsamples are too small for this to be observed. Overall, the chi-square test indicates that there are significant differences between the three countries when taking into consideration the subcategories (p-value = 0.0004998) (Table 6).
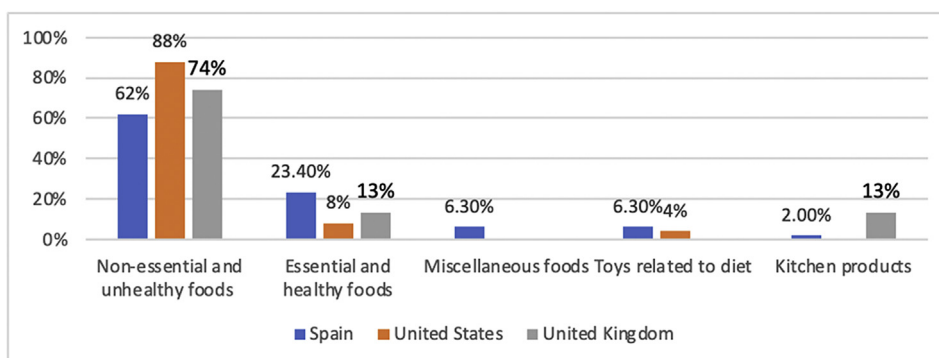
In comparing the frequency of healthy and unhealthy food videos between different countries using the chi square test, one can observe the following:
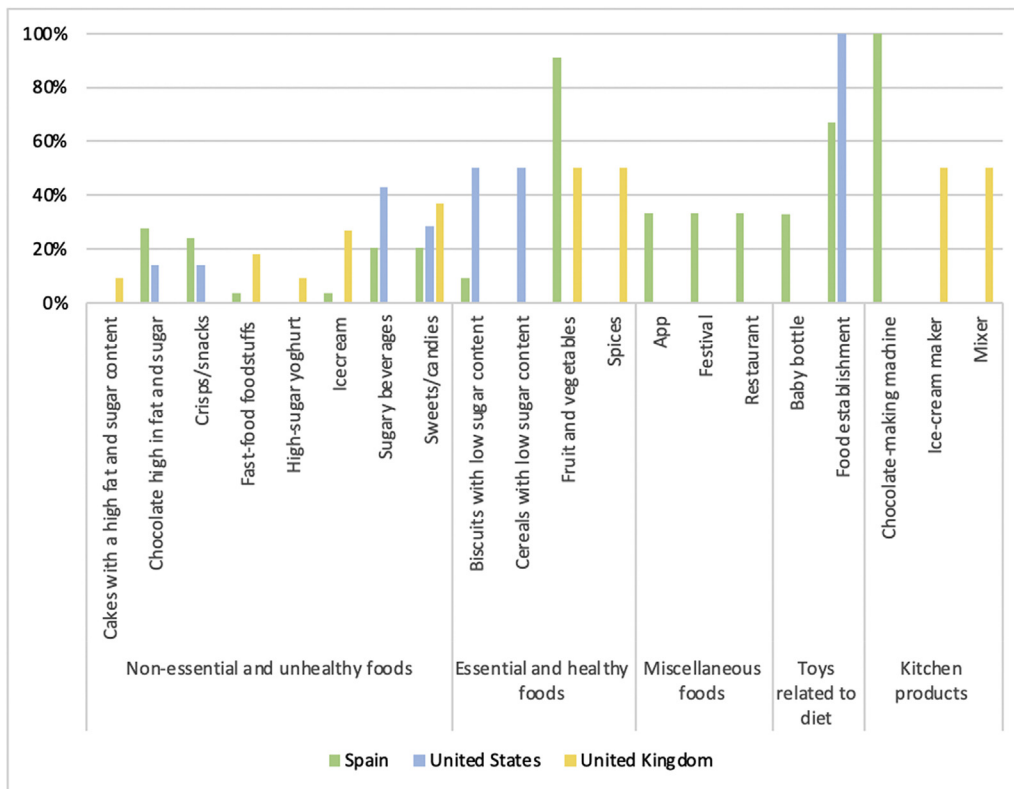

Graph 2. Food products in kid YouTuber vlogger channels (Spain, United States and United Kingdom).

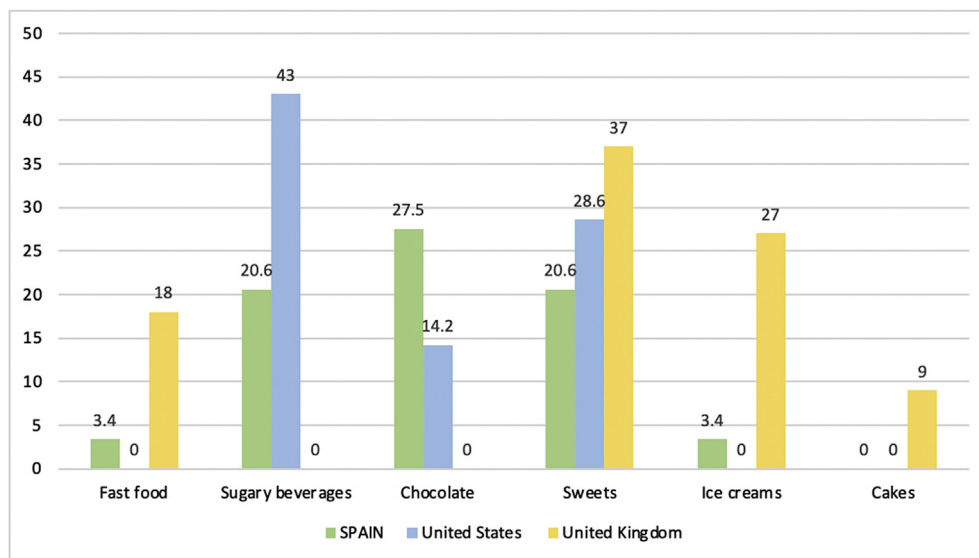**Table 4.** Presence of products by country in relative data.

Food categories	Food	SPAIN		UNITED KINGDOM		UNITED STATES	
		%	f(x)	%	f(x)	%	f(x)
Non-essential and unhealthy foods [α = 0.92]	Fast-food foodstuffs	3.4%	1	18%	2	0%	0
	Sugary beverages	20.6%	6	0%	0	43%	9
	Chocolate high in fat and sugar	27.5%	8	0%	0	14.2%	3
	Sweets/candies	20.6%	6	37%	4	28.6%	6
	Ice cream	3.4%	1	27%	3	0%	0
	Cakes with a high fat and sugar content	0%	0	9%	1	0%	0
	Crisps/snacks	24.1%	7	0%	0	14.2%	3
	High-sugar yoghurt	0%	0	9%	1	0%	0
	TOTAL	100%	29	100%	11	100%	21
Essential and healthy foods [α = 0.81]	Cereals with low sugar content	0%	0	0%	0	50%	1
	Spices	0%	0	50%	1	0%	0
	Fruit and vegetables	91%	10	50%	1	0%	0
	Biscuits with low sugar content	9%	1	0%	0	50%	1
	TOTAL	100%	11	100%	2	100%	2
Miscellaneous foods [α = 0.83]	App	33.3%	1	0%	0	0%	0
	Festival	33.3%	1	0%	0	0%	0
	Restaurant	33.3%	1	0%	0	0%	0
	TOTAL	100%	3	0%	0	0%	0
Toys related to diet [α = 1]	Baby bottle	33%	1	0%	0	0%	0
	Food establishment	67%	2	0%	0	100%	1
	TOTAL	100%	3	0%	0	100%	1
Kitchen products [α = 1]	Mixer	0%	0	50%	1	0%	0
	Chocolate-making machine	100%	1	0%	0	0%	0
	Ice-cream maker	0%	0	50%	1	0%	0
	TOTAL	100%	1	100%	2	100%	0
	TOTAL N = 86	100%	N = 47	100%	N = 15	100%	N = 24

Table 5. Presence of products by country in absolute data.

Food categories	Food	Spain		United Kingdom		United States	
		%	f(x)	%	f(x)	%	f(x)
Non-essential and unhealthy foods	Fast-food foodstuffs	2.1%	1	13.3%	2	0%	0
	Sugary beverages	12.7%	6	0%	0	37.5%	9
	Chocolate high in fat and sugar	17.0%	8	0%	0	12.5%	3
	Sweets/candies	12.7%	6	26.7%	4	25.0%	6
	Ice cream	2.1%	1	20%	3	0%	0
	Cakes with a high fat and sugar content	0%	0	6.7%	1	0%	0
	Crisps/snacks	14.8%	7	0%	0	12.5%	3
	High-sugar yoghurt	0%	0	6.7%	1	0%	0
	TOTAL	61.7%	29	73.3%	11	87.5%	21
Essential and healthy foods	Cereals with low sugar content	0%	0	0%	0	4.1%	1
	Spices	0%	0	6.7%	1	0%	0
	Fruit and vegetables	21.2%	10	6.7%	1	0%	0
	Biscuits with low sugar content	2.1%	1	0%	0	4.1%	1
	TOTAL	23.4%	11	13.3%	2	8.3%	2
Miscellaneous foods	App	2.1%	1	0%	0	0%	0
	Festival	2.1%	1	0%	0	0%	0
	Restaurant	2.1%	1	0%	0	0%	0
	TOTAL	6.4%	3	0%	0	0%	0
Toys related to diet	Baby bottle	2.1%	1	0%	0	0%	0
	Food establishment	4.3%	2	0%	0	4.1%	1
	TOTAL	6.4%	3	0%	0	4.1%	1
Kitchen products	Mixer	0%	0	6.7%	1	0%	0
	Chocolate-making machine	2.1%	1	0%	0	0%	0
	Ice-cream maker	0%	0	6.7%	1	0%	0
	TOTAL	2.1%	1	13.3%	2	0%	0
	TOTAL N = 86	100%	N = 47	100%	N = 15	100%	N = 24

Graph 3. Distribution of food products in each category in YouTube channels starring children aged under 14 years old (Spain, United Kingdom and United States).

Graph 4. Breakdown by country of non-essential and unhealthy foods (YouTube channels starring children vloggers aged under 14 years old).

Table 6. Frequencies of food videos for healthy and non-healthy products and comparisons between countries.

Category /Country	UK vs US			Spain vs UK			Spain vs US		
	UK	US	total	SP	UK	total	SP	US	total
Healthy	2	2	4	11	2	13	11	2	13
Non healthy	11	21	32	24	11	35	24	21	45
total	13	23	36	35	13	48	35	23	58
	Chi 2			Chi 2			Chi 2		
	0.38	P > 0,05		1.24	P > 0,05		4.125	P < 0,05	

food products shown are unhealthy and only 8% of the products are healthy. We can therefore state that hypothesis 1 has been partially supported because although the largest percentage is of unhealthy products, healthy products are also present.

Hypothesis 2 (The kid YouTuber vlogger channels in which there is a greater percentage of unhealthy food due to their diet are from the United States, the United Kingdom and Spain) is supported for Spain and United States, and partially supported for other combination of countries (UK/USA and UK/Spain). This indicates that unhealthy products are marketed, but there are also healthy products present which are suitable for a balanced diet. Perhaps, as stated by Tan et al. (2018), it would be necessary for there to be appropriate regulation for these digital platforms to foster a healthy diet as opposed to an excess of unhealthy foodstuffs.

The miscellaneous product category is a category which is of scarce importance in the videos, and these products only appeared in the Spanish channels, indicating that it is not representative in the sample being analysed.

The foods and beverages nowadays deemed unhealthy are those most present in the channels analysed from the three countries: 62% in Spain, 88% in the United States and 74% in the United Kingdom.

6. Conclusions and limitations

Sweet foods are those which monopolise unhealthy foodstuffs in all three countries. However, the products appearing in the kid YouTube vlogger channels are very different depending on the country. In the Anglo-Saxon countries, the presence of food is relatively scarce, but when it does occur it mostly involves unhealthy foods. In the case of Spain, food is habitually present (representing more than half of the products which appear in the videos from Spain), and there is a larger presence of healthy products.

Therefore, it is possible that there are cultural components that lead kid YouTubers to show more or less interest in food-related subjects, as well as the type of foods they show. This would explain why the presence of fruit and vegetables is three times higher in Spain than in the United Kingdom, and is non-existent in the United States. In addition, in the United States the figures for sugary drinks stand out (twice the amount of Spain and non-existent in the United Kingdom).

This exploratory and descriptive study has made it possible to ascertain that there are differences in the quantity and type of foods that appear in kid YouTuber channels, and that these vary depending on the country. This is very important given that the mass media is, today more than ever, responsible for a large part of the reality we perceive and that, in addition, the media helps create that reality. It is therefore very likely that children are reproducing the patterns of consumption that they see on those channels (reinforced by the fact that the people starring in the videos are children). This research, therefore, suggests that it should be established whether what the kid YouTubers are communicating (in a different manner depending on each of the countries analysed) is a real trend in consumption among children in said countries. This would confirm the hypothesis being proposed here and would make it possible to use the channels of kid YouTubers to gear viewers towards better consumption habits. Thus, this type of channel (criticised in other studies for displaying certain attitudes as being fun when they could endanger children, as in the case of gambling: Gambling Commission, 2017; Splevins et al., 2010; Mcbride and Derevensky, 2012) could be utilised constructively.

What this article shows is that the foods, food-related toys and cooking products appearing in the analysed videos are linked to an unhealthy diet. This portrayal in the videos suggests the need for greater involvement by a number of stakeholders: by the public authorities, to attempt to regulate the appearance of unhealthy foods in videos aimed at children, given that this audience type tends to reproduce what they watch as part of their daily lives; by families, who produce the videos with their children as part of the business of kids' channels (with revenue

provided by subscribers and branding); and by the video-sharing platforms, which should be more careful with regard to this content as it is located on their platforms and is targeting children.

The limitation of this study is that it focuses on identifying the food products which appear without going into the effects they have on children, which was the subject of the researchers Coates et al. (2019a) in their investigation in which they measured food consumption in accordance with the products promoted by influencers. However, to obtain conclusive cultural results, lines of research could be opened in other geographical regions such as South America and Asia in order to obtain a global overview of this phenomenon. This study is essentially a descriptive study. It must therefore be considered as a starting point for future research in which other challenges can be addressed, such as the perception that children (as spectators) have of the food products they view (for example, studies of emotions based on micro expressions), aspects that the present study cannot encompass. In addition, thought should be given to analysing, in a more consistent and focussed manner, the possible relationship (which here has only been glimpsed) between the presence and frequency of appearance of certain products and the provenance (cultural context) of the channel. Public authorities should, based on findings such as those presented here, be aware of the influence received by children. If they consider it to be undesirable, then they should take the appropriate steps (educational, communicative or general awareness measures) for future generations.

Declarations

Author contribution statement

All authors listed have significantly contributed to the development and the writing of this article.

Data availability statement

The data that has been used is confidential.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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