

Assessment of social media content of the most marketed food and beverages brands: WHO CLICK Portuguese pilot study Análise dos conteúdos das redes sociais das marcas de produtos alimentares mais publicitadas: estudo piloto português da ferramenta CLICK da OMS

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Abstract

Introduction: Digital food marketing influences food choices and food intake of children and adolescents and can lead to overweight and obesity since most of the food marketing promotes HFSS foods. **Objective:** To perform a content analysis of Instagram pages and posts of the most marketed food and beverages brands in a sample of Portuguese children. Methodology: The current study involves the step "Landscape of campaigns" of the WHO CLICK monitoring framework and follows the brand page content analysis protocol, developed by the WHO Regional Office for Europe. The most advertised brands for children have been selected through data collected in the CLICK step "Investigate exposure". Posts on the brands' Instagram pages made between 15 April and 15 May were analysed. The food products featured in the posts were categorized according to the Portuguese NPM. Results: A total of 21 Instagram pages and 337 posts were assessed. A significant number of posts use characters (35.0%) as a marketing technique and the most used primary persuasive appeal was "holiday, travel or adventure" (13.4%). More than half of the posts featured food products (61.1%) and the majority of them (85.8%) did not comply with the NPM. Most of these posts (61.5%) were appealing to children and/or adolescents. Conclusion: Although the law restricting food marketing to children has been in force in Portugal there is still, on digital marketing, a non-compliance with it. This reveals the urgent need to intervene in this area by creating strategies and tools that allow better monitoring of online platforms.

Keywords

Food marketing | Children | Social media | HFFS foods

Resumo

Introdução: O marketing alimentar digital influencia as escolhas alimentares e o consumo de crianças e adolescentes, podendo levar a excesso de peso e obesidade, dado que a maioria do marketing alimentar promove alimentos HFSS. Objetivo: Analisar o conteúdo das páginas e publicações de Instagram das marcas de produtos alimentares mais publicitadas numa amostra de crianças portuguesas. Metodologia: Este estudo envolve a etapa "Landscape of campaigns" da ferramenta CLICK da OMS e segue o protocolo "brand page content analysis" desenvolvido pelo Escritório Regional da OMS para a Europa. As marcas mais publicitadas foram selecionadas através de dados recolhidos na etapa "Investigate exposure" da ferramenta CLICK. Foram analisadas as publicações nas páginas de Instagram das marcas feitas entre 15 de abril e 15 de maio. Os produtos alimentares presentes nas publicações foram categorizados de acordo com o MPN português. Resultados: Foram avaliadas 21 páginas de Instagram e 337 publicações. Um número significativo de publicações utilizou personagens (35,0%) como técnica de marketing e o principal apelo utilizado foi "festividades, viagens ou aventura" (13,4%). Mais de metade das publicações apresentavam produtos alimentares (61,1%) e a maioria (85,8%) não cumpria o MPN. A maioria destas publicações (61,5%) eram apelativos a crianças e/ou adolescentes. Conclusão: Apesar da legislação que restringe o marketing de alimentos não saudáveis dirigido a crianças se encontrar em vigor em Portugal, ainda se verifica, ao nível do marketing digital, um incumprimento da mesma. Isto revela a necessidade urgente de intervir nesta área, criando estratégias e ferramentas que permitam monitorizar as plataformas digitais.

Palavras-Chave

Marketing alimentar | Crianças | Redes Sociais | Alimentos HFFS

Acronyms List

COSI - Childhood Obesity Surveillance Initiative for Europe

DGS - Directorate-General of Health

HFSS - High in fat, sugar and/or sodium

NPM - Nutrient Profile Model

WHO - World Health Organization

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Introduction

Nowadays, obesity is one of the greatest public health challenges in the world. According to World Health Organization (WHO), in 2020, 39 million children under 5 years old, and over 340 million children and adolescents between 5 and 19 years old were overweight or obese⁽¹⁾. In Portugal, according to WHO *Childhood Obesity Surveillance Initiative for Europe* (COSI), a 2019 report, 29.7% of children between 6 and 8 years old lived with overweight, and 11.9% with obesity⁽²⁾.

These alarming numbers represent a problem, since the establishment of obesity during pediatric age contributes to a higher risk of development of non-communicable diseases, leading to an increased risk of premature mortality^(3, 4). The prevalence of overweight and obesity has been influenced by the food environments, including changes in food type, availability, affordability and marketing, as well as a decline in physical activity^(4, 5).

Most of the food marketing promote unhealthy foods and beverages, with a high content of fat, sugar and/or sodium (HFSS)⁽⁶⁻⁸⁾. Additionally, the use of social media and digital marketing has increased substantially over the years, leading to an increase in the digitalization of food environments^(7, 9). Children and adolescents are the most vulnerable group to this type of food marketing on social media⁽¹⁰⁻¹²⁾ and are constantly being exposed to food ads⁽⁷⁾. A 2022 systematic review showed that children are affected by food advertising on YouTube and by influencer marketing, leading them to a higher willingness to try a new product and, therefore, change their dietary habits⁽¹¹⁾. Also, the promotion of marketed products is associated with a higher level of consumption of that product⁽¹³⁻¹⁵⁾. Therefore, food marketing has an influence on food choices and consumption of

children and adolescents, as this repetitive exposure can contribute to the establishment of unhealthy habits that can lead to obesity^(16, 17).

For these reasons, it is crucial to invest in restrictive food policies and control the exposure of children and adolescents to food marketing on social media⁽¹¹⁾.

In Portugal, since 2019, food marketing of HFSS food products is restricted by law to the population younger than 16 years old⁽¹⁸⁾. To decide which products should be restricted, a Nutrient Profile Model (NPM) was defined by the Directorate-General of Health (DGS)⁽¹⁹⁾. It is important to evaluate if this law is being complied with, as well as its respective impact.

Therefore, this present work aims to help fill the need for more studies evaluating published advertised content on social media by identifying campaigns run by leading national brands, according to the "Landscape of campaigns" step of the WHO CLICK monitoring framework⁽²⁰⁾.

Objectives

Main objective:

To perform a content analysis of social media of the most marketed food and beverages brands in a sample of Portuguese children.

Specific objectives:

- To identify the marketing techniques used by the most marketed food and beverages brands to children;
- To identify the percentage of food ads and content targeted to children on social media;
- To characterize the advertised food products and brands according to the Portuguese NPM developed by DGS.

Methodology

WHO CLICK monitoring framework

In 2019, the WHO Regional Office for Europe developed the CLICK monitoring framework, to support Member States in monitoring and restricting the marketing of unhealthy food products to children. This framework is divided into 5 methodologies⁽²⁰⁾ and has been implemented in Portugal, namely the steps "Comprehend the digital ecosystem", "Landscape of campaigns" and "Investigate exposure". The current study involves the methodology "Landscape of campaigns" and follows the brand page content analysis protocol, developed by the WHO Regional Office for Europe.

Identification of the most marketed food and beverages brands to children

Data on the most marketed food and beverages brands to children was obtained through data collected in the "Investigate exposure" step of the WHO CLICK monitoring framework being currently implemented in Portugal. For this CLICK step, a sample of Portuguese children was recruited, who installed on their mobile devices (or on the mobile device of their parents/guardians) an app (*RealityMeter*) to monitor and gathers data about children's exposure to paid-for digital ads. 27 participating children aged between 3 and 16 years old had the app installed during the selected period for this study - between 15 April and 15 May (1 month). The ads collected by the *RealityMeter* app during the study period were analysed, representing a total of 2750 ads collected. Subsequently, the food and beverages brands advertised in the 2750 advertisements were identified. A total of 86 food and beverage brands were found. Restaurants without a restaurant chain and

supermarkets/markets without their own brand were not considered food and beverage brands.

Next, the most advertised brands were selected, according to the number of ads with the brand, following the WHO protocol. Thus, **21** brands were selected (Appendix A), which appeared in at least 6 of the ads analysed.

Data collection and content analysis of food and brands ads in social media

The Instagram pages of the 21 most advertised brands and all Instagram posts between April 15 and May 15 were analysed. The social network chosen was Instagram because most of the ads collected came from this platform and is the social network that has grown the most in recent years in Portugal⁽²¹⁾.

The content analysis of the posts was done between the 1st of June and the 6th of June and several parameters regarding exposure and power of marketing, as well as nutritional information of the food products featured in the posts, were collected (Appendix B). Whenever there were doubts in the analysis or classification of the posts according to any of the parameters, the research team was consulted to agree on.

In this study, the food products featured in the posts were classified according to the Portuguese NPM (PT-NPM)⁽²²⁾. For posts featuring more than one food product, only the most prominent was considered for this analysis. Food products including water, coffee, supplements and alcoholic beverage were excluded from this analysis as well as products for which no nutritional information was found. The food products were classified according to PT-NPM as "complies with the PT-NPM" or "not complies with the PT-NPM" and divided into food categories and different brands.

Statistical analysis

The statistical analysis of the data was conducted in Microsoft Excel®, for the descriptive statistics and SPSS version 28.0, for the chi-square test, to assess the dependence between two nominal variables, considering a significance level of 0.05.

Results

A total of 21 Instagram pages, corresponding to the pages of the most advertised brands, and **337** Instagram posts were assessed. Most of the posts (**75.7%**) were in video format and the remaining (**24.3%**) were in image format.

The analysed Instagram pages had an average of **150 579.19** (\pm 190 022.54) followers. The assessed posts had an average of **1370.80** (\pm 2325.38) likes and an average of **26.82** (\pm 82.80) comments.

Analysis of the marketing techniques used by the most marketed food and beverages brands

Concerning the marketing techniques on the posts, the results show that most posts use brand logo (70.9%). A significant number of posts use image of packaging (40.4%), image of product itself (39.8%) and characters (35.0%). It should be noted that some posts ask to comment (15.7%), use health claims (14.8%) and appeal to a special day (13.9%) (Figure 1).

The presence of characters in the posts was studied, and the results show that other characters (16.3%) and celebrities (15.1%) were the most used types of characters (Figure 2). The most used type of celebrities were clearly internet celebrities (76.5%) (Figure 3) and young adults (41.8%) were the most used other characters. However, it should be noted that young children were the third most common (12.7%) (Figure 4).

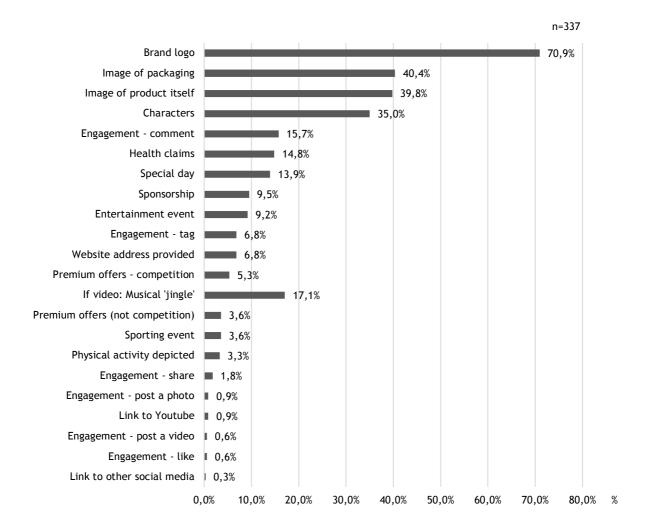


Figure 1 Percentage of posts according to the marketing techniques used.

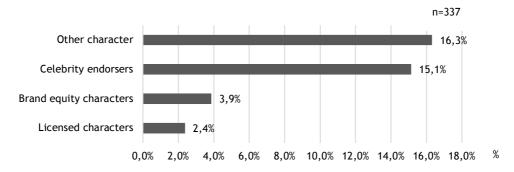


Figure 2 Percentage of posts according to the presence of characters.

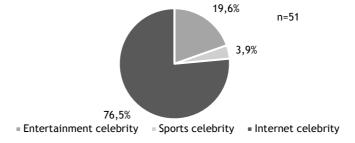


Figure 3 Percentage of posts according to the presence of celebrities.

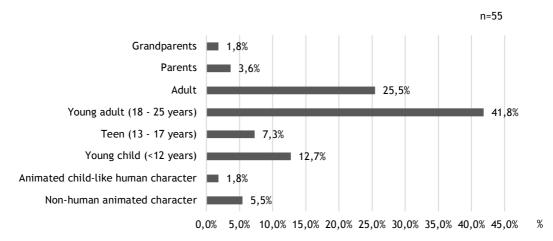


Figure 4 Percentage of posts according to the presence of other characters.

The type of health claims present in the posts was also analysed, and the results show that the health claims "diet" (26.0%), "natural ingredients/no preservatives" (24.0%) and "essential Nutrients" (20.0 %) were the most common (Figure 5).

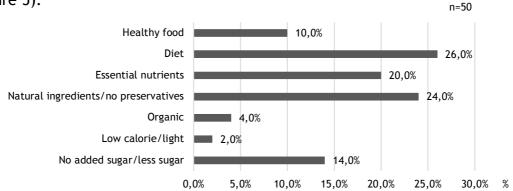


Figure 5 Percentage of posts according to the presence of health claims.

In relation to the types of persuasive appeals used by brands, it was shown that the most common primary persuasive appeal was "holiday, travel or adventure" (13.4%) followed by "link to event or entertainment" (10.1%) and "humour" (8.9%). The most used secondary persuasive appeal was "taste" (18.5%), followed by "Fun" (11.1%) and "unique" (10.4%) (Figure 6).

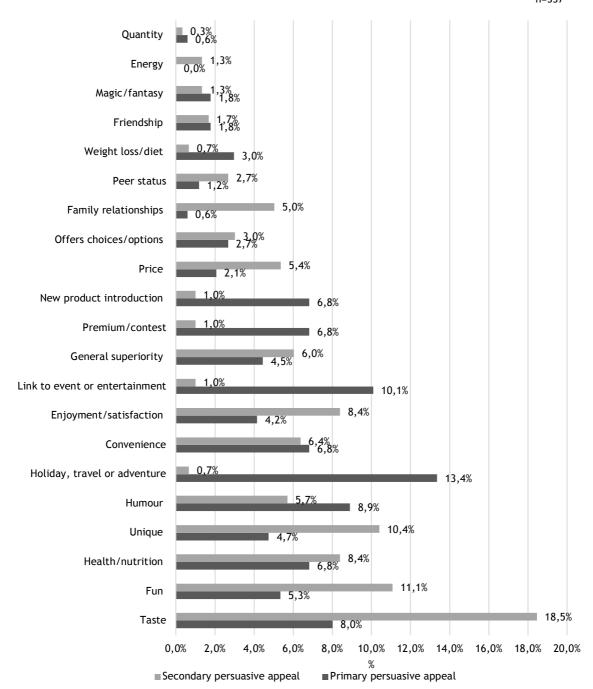


Figure 6 Percentage of posts according to the type of persuasive appeal.

Also, in the present study was analysed which were the target groups of the posts. Results show that most of the posts appeal to the adults' group (38.6% in a primary appeal and 42.0% in a secondary appeal), followed by the young adults' group (26.7% in a primary appeal and 32.1% in a secondary appeal) and the adolescents and young adults' group (18.7% in a primary appeal and 5.3% in a secondary appeal) (Figure 7).

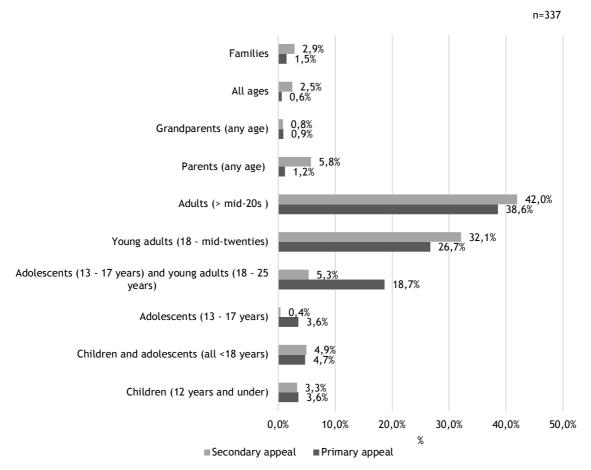


Figure 7 Percentage of posts according to the target group.

When it was studied whether the posts were appealing to children and/or adolescents, it was found that the majority of the posts (61.1%) were not appealing to this groups, and most of the posts that appeal to this age group, were particularly appealing to adolescents (23.1%) (Figure 8).

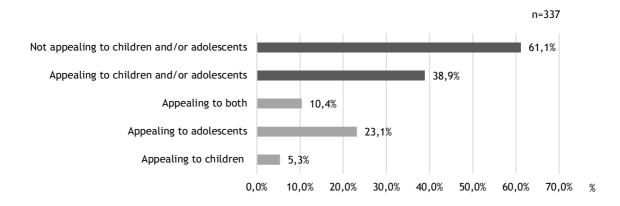


Figure 8 Percentage of posts according to the appeal to children and/or adolescents.

Of the posts appealing to children and/or adolescents the most used primary persuasives appeals were "humour" (13.7%), "premium/contest" (13.7%) and "link to event or entertainment" (12.2%). The most used secondary persuasive appeal was "fun" (21.2%), followed by "taste" (20.3%) (Figure 9).

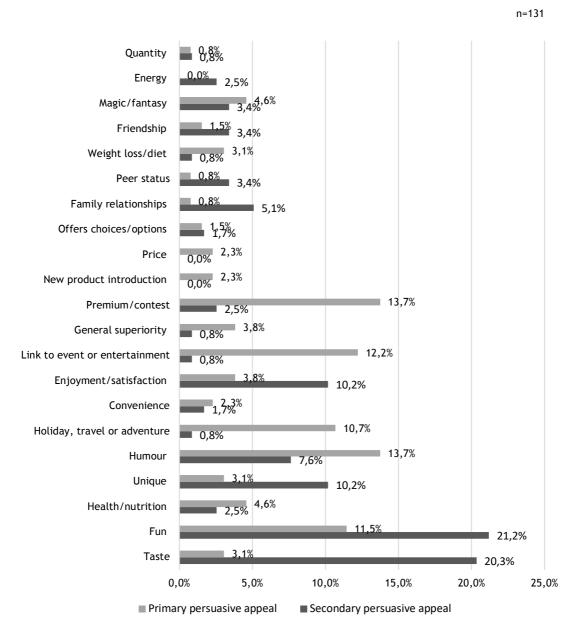


Figure 9 Percentage of posts that appeal to children and/or adolescents according to the type of persuasive appeal.

Analysis of the nutrient profile of the food products featured in posts

Of the total posts analysed, 207 (61.1%) featured food products and 130 (38.9%) did not featured food products, being considered brand ads only (Figure 10).

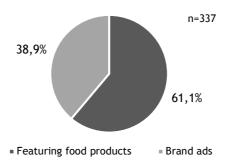


Figure 10 Percentage of posts featuring food products.

Nutrient information was found for only 106 food products out of 207 posts featured food products. It was found that most of the food products featuring the posts (85.8%) did not comply with the PT-NPM (Figure 11).

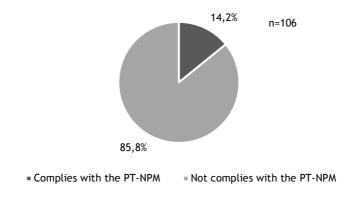


Figure 11 Percentage of food products featured according to the PT-NPM.

Of the posts featuring food products, the most featured food categories were chocolates, confectionery, energy bars, sweet toppings, spreads and desserts (17.1%); cakes and other bakery products, sweet biscuits, powder preparations to produce confectionery (15.3%); ready-made, convenience and ready-to-eat meals (13.5%); soft drinks (13.5%) and juices (13.5%). For most of the categories identified, the majority of products did not comply with the PT-NPM. A higher percentage of food products that comply with PT-NPM was found for posts of the food categories yoghurts, fermented milks, dairy cream and other similar products (80.0%) and milk (60.0%). For the category's pasta, rice and other cereals;

processed fruit, vegetables, pulses and tubers and butter, fats and oils, all of the food products complied with the PT-NPM (Table 1).

Table 1 Percentage of posts featuring food products according to the PT-NPM per categories

Food category	Posts featuring	Food products	Food products
	food products	that did not	that did comply
		comply with NPM	with NPM
Chocolates, confectionery, energy bars, sweet toppings, spreads and desserts	17.1% (n=18)	100.0% (n=18)	0.0% (n=0)
Cakes and other bakery products, sweet biscuits, powder preparations for the production of confectionery	15.3% (n=16)	100.0% (n=16)	0.0% (n=0)
Ready-made, convenience and ready-to-eat meals	13.5% (n=14)	100.0% (n=14)	0.0% (n=0)
Soft Drinks	13.5% (n=14)	100.0% (n=14)	0.0% (n=0)
Juices	13.5% (n=14)	93.3% (n=13)	6.7% (n=1)
Milk	4.5% (n=5)	40.0% (n=2)	60.0% (n=3)
Yoghurts, fermented milks, dairy cream and other similar products	4.5% (n=5)	20.0% (n=1)	80.0% (n=4)
Meat preparations and meat products	4.5% (n=5)	100.0% (n=5)	0.0% (n=0)
Ice cream and sorbets	2.7% (n=3)	100.0% (n=3)	0.0% (n=0)
Snacks	1.8% (n=2)	100.0% (n=2)	0.0% (n=0)
Cheese and cheese-like products	1.8% (n=2)	50.0% (n=1)	50.0% (n=1)
Bread, bread products, rusks	1.8% (n=2)	50.0% (n=1)	50.0% (n=1)
Pasta, rice and other cereals	1.8% (n=2)	0.0% (n=0)	100.0% (n=2)
Processed fruit, vegetables, pulses and tubers	1.8% (n=2)	0.0% (n=0)	100.0% (n=2)
Butter, fats and oils	0.9% (n=1)	0.0% (n=0)	100.0%
Sauces and Dressings	0.9% (n=1)	100.0%	0.0% (n=0)

It was found that for 13 brands, out of the 15 brands that featured food products in the posts, most of the food products featured did not comply with the PT-NPM. In fact, for 9 of the brands, none of the food products complied with the PT-NPM as shown in table 2 (Appendix C).

When only the posts featuring unhealthy foods (food products that did not comply with the PT-NPM) were analysed, it was found that most posts were appealing to children and/or adolescents (61.5%) (Figure 12). The proportion of posts appealing to children and/or adolescents is higher in posts featuring unhealthy foods (61.5% vs. 20.0%, p < 0.05).

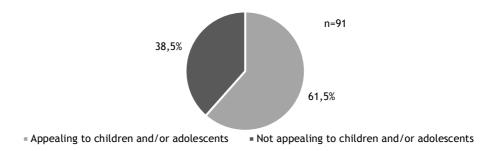


Figure 12 Percentage of posts featuring unhealthy food products according to the appeal to children and/or adolescents.

When only the posts aimed at children featuring food products were analysed, the main categories advertised were chocolates, confectionery, energy bars, sweet toppings, spreads and desserts (30.6%); ready-made, convenience and ready-to-eat meals (17.7%) and juices (17.7%) (Figure 13).

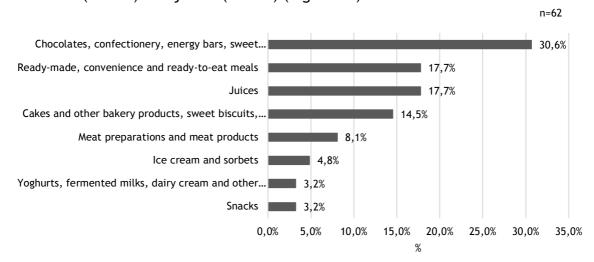


Figure 13 Percentage of posts that appeal to children and/or adolescents according to the PT-NPM food categories.

Discussion

It is known that food marketing can influence children's and adolescents' food choices and food intake, contributing to unhealthy habits that can lead to obesity, a serious public health issue^(16, 17). Also, studies show that, compared to traditional media, the internet allows food marketers to use more engaging and persuasive techniques to target children and directly interact with them⁽²³⁾.

In this study was found that characters (**35.0%**) and celebrities (**15.1%**) were frequently used, in particular internet celebrities (**76.5%** of 15.1%). These data are particularly relevant because it is known that the use of characters and the use of social media influencers are strategies that have a large influence on the food choices and food intake of children and adolescents, being an increasingly used strategy^(13, 14, 24-26). The use of young children as characters in posts was also common (**12.7%** of 16.3%) and this strategy has been seen in other studies⁽²⁶⁾.

Regarding the most used types of appeals, studies show that "health/nutrition claims", "taste" an "emotional appeal" such as "humour" and "pleasure" are common child-target appeals in media content⁽²⁶⁾. These type of appeals and marketing techniques were also frequent in this study.

Most of the food products (85.8%) featuring the posts did not comply with the PT-NPM and the majority (61.5%) of these posts were appealing to children and/or adolescents. The most featured food category for children and/or adolescents was chocolates, confectionery, energy bars, sweet toppings, spreads and desserts. The scientific evidence shows that the food brands that promote HFSS foods are those that invest the most in advertising, reinforcing the findings of this study (27, 28).

These findings emphasize the need for action on digital marketing, whose monitoring and enforcement is a challenge in the current law. This study also showed that many of the posts have multiple target audiences, which may be a strategy used by brands to circumvent the current law, making enforcement on these platforms even more challenging.

This study presents some **limitations**, namely the fact that most of the parameters that evaluate the marketing techniques were subjective, which may have influenced the results obtained. Furthermore, the period evaluated includes

Easter and Mother's Day, which may have influenced the results obtained, namely regarding the most used persuasive appeals. Also, products that were considered as not prominent were not coded which may result in an underrepresentation of the prevalence of food and beverages in the posts.

On the other hand, one of the **strengths** of this study lies in the fact that the evaluated brands were effectively exposed to children, as these were selected from the "Investigate exposure" step, implemented at the same time. As the exposure assessment period was the same as posts on Instagram were made, it is likely that the posts to which children were exposed were evaluated.

This study is an important step towards understanding the campaigns and key marketing techniques used in social media by leading food and beverage brands.

Conclusion

With this study, it was possible to conclude that, although in Portugal the law restricting food marketing of unhealthy to children has been in force since 2019, in 2022 there is still, at the level of digital marketing, a non-compliance with it. In fact, the majority of the food products featuring the posts analysed did not comply with PT-NPM, and most of these posts were appealing to children and/or adolescents. Currently, there are no tools that allow the correct monitoring and restriction of digital food marketing aimed at children, which limits compliance with the law in force. This reveals the urgent need to intervene in this area by creating strategies and tools that allow better monitoring of online platforms.

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Appendices

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Appendix A

Table 2. Most advertised food and beverage brands

Brand	Number of ads
Iglo	22
Burger King	18
Pingo Doce	14
Heineken	14
Go Chill Delta	13
Nespresso	10
Água das Pedras	9
Compal	9
Telepizza	8
Lidl	8
Panike	8
Kinder	7
Pepsi	7
Tummytox	6
Pleno	6
Continente	6
Água Vitalis	6
Haribo	6
KFC	6
Sagres	6
Chips Ahoy!	6

Appendix B

Table 3. Parameters of the exposure analysis

Brand/product page name
Brand/product page country
Number of page followers
URL
Date marketing recorded
Date post issued
Day of the week post issued
Food products featured (presence/absence)
Detailed description of food product as shown in ad, if shown

Table 4. Parameters of the nutrient profile analysis

PT-NPM Food category code
Saturated fat (grams per 100g/ml of product)
Total sugars (grams per 100g/ml of product)
Added sugars (presence/absence)
Salt (grams per 100g/ml of product)
Energy (kcal per 100g/ml of product)
Classification according to PT-NPM (complies with/not complies with)

Table 5. Parameters of the power of marketing analysis

Post type	Image	
	Video	
Number of views		
Number of likes		
Number of comments		
Brand logo (presence/absence)		
Image of packaging (presence/absence)		
Image of product itself (presence/absence)		
If video: Music Jingle (presence/absence)		
Persuasive appeal	Quantity	
	Convenience	
	Taste	

	Health/nutrition
	Energy
	Price
	Unique
	Fun
	Family relationships
	General superiority
	Peer status
	Friendship
	Romance/sex appeal
	Premium/contest
	Weight loss/diet
	Offers choices/options
	Enjoyment/satisfaction
	New product introduction
	Corporate information
	Humour
	Magic/fantasy
	Link to event or entertainment
	Holiday, travel or adventure
	Novel or surprising feature
Brand Characters (presence/absence)	
Celebrity endorsers	Entertainment celebrity
	Sports person
	Business leader
	Politician
	Internet celebrity
Other Characters	Non-human animated character
	Animated child-like human character
	Animated adult-like human character
	Young child (<12 years)
	Adolescents (13 - 17 years)
	Young adult (18 - 25 years)
	Adult (mid-twenties +)
	Parent (any age)
	Grandparent (any age)
	Older adult (60s+)
Link to website (presence/absence)	
, ,	

Hashtags (presence/absence) Link to YouTube (presence/absence) Links to other social media platforms (presence/absence) Engagement - like (presence/absence) Engagement - share (presence/absence) Engagement - tag (presence/absence) Engagement - prompt to post text (presence/absence) Engagement - post photo (presence/absence) Engagement - prompt to post video (presence/absence) Related to an entertainment event (yes/no) Related to a sporting event (yes/no) Related to a "special day" (yes/no) Premium offers (not competition) (presence/absence) Premium offers (competition) (presence/absence) Sponsorship (presence/absence) Health claims Low fat/fat free Sugar free No added sugar/less sugar Low calorie/light Low carbohydrate Organic Natural ingredients/no preservatives Provides essential nutrients Whole grain/whole wheat Fibre or bran Heart healthy/low cholesterol Diet Healthy food Physical activity depicted (yes/no) Children (12 years and under) Target group Children and adolescents (all <18 years) Adolescents (13 - 17 years) Adolescents (13 - 17 years) and young adults (18 - 25 years) Young adults (18 - mid-twenties) Adults (mid-20s +) **Parents** Grandparents Older adults (60s+)

	All ages
	Families
Appeal to children and/or adolescents (yes/no)	

Appendix C

Table 6. Percentage of posts featuring food products according to the PT-NPM per brand

Brand	Posts featuring food	Food products that	Food products that
	products	did not comply with NPM	did comply with NPM
Burger king	66.7% (n=8)	100.0% (n=8)	0.0% (n=0)
Pingo Doce	10.2% (n=5)	80.0% (n=4)	20.0% (n=1)
Gochillbydelta	17.6% (n=3)	66.7% (n=2)	33.3% (n=1)
Água das Pedras	33.3% (n=3)	100.0% (n=3)	0.0% (n=0)
Compal	75.0% (n=15)	86.7% (n=13)	13.3% (n=2)
Telepizza	42.9% (n=3)	100.0% (n=3)	0.0% (n=0)
Lidl	17.4% (n=8)	37.5% (n=3)	62.5% (n=5)
Panike	78.6% (n=11)	90.9% (n=10)	9.1% (n=1)
Kinder	80.0% (n=4)	100.0% (n=4)	0.0% (n=0)
Pleno	62.5% (n=10)	100.0% (n=10)	0.0% (n=0)
Continente	18.2% (n=6)	16.7% (n=1)	83.3% (n=5)
Água Vitalis	40.0% (n=2)	100.0% (n=2)	0.0% (n=0)
Haribo	93.3% (n=14)	100.0% (n=14)	0.0% (n=0)
KFC	100.0% (n=9)	100.0% (n=9)	0.0% (n=0)
Chips Ahoy!	50.0% (n=5)	100.0% (n=5)	0.0% (n=0)

