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Use of persuasive strategies in food advertising on television and on social media in Brazil

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ABSTRACT

We analyzed the use of persuasive advertising strategies by 18 food brands on TV and Facebook, Instagram, and YouTube in Brazil in April 2018. Advertising strategies were investigated from three groups: power of advertising strategies (n = 10) (e.g., use of licensed character, celebrities, awards, etc), use of the prize offering (n = 9) (e.g., pay 2 take 3 or more, gifts or collectable, limited edition, etc), and use of brand benefit claims (n = 8) (e.g., messages that exalt sensory-based characteristics such as flavor, taste, aroma and recommend how to use/consume the product, etc). Almost 90% of the brands were ultra-processed foods producers and they carried 52 ads on TV and 194 posts on social media platforms. A higher frequency of the strategy 'cartoon/company owned character' was found on TV ads (19.2%; p < 0.0001) in comparison to social media platforms (0% on the three platforms) while the presence of 'famous sportsperson/team' prevailed on YouTube (41.4%) in comparison to TV (19.2%), Facebook (10.9%) and Instagram (9.1%), p < 0.0001. On YouTube ads, the claims 'sensory-based characteristics' (86.2%), 'suggested use' (51.7%), and 'emotive claims' (31.0%) were more commonly seen in comparison to the other media, while the claims about 'new brand developments' (23.1%), 'price' (9.6%) and 'suggesting to children and the whole family to use the advertised product' (21.1%) prevailed on TV. Ultra-processed food brands are the main food companies that advertise on Brazilian TV and social media and the message transmitted by these brands varies in each media according to the advertising strategies that are used.

1. Introduction

Food choices are determined by a combination of individual factors, such as psychological and cultural issues, and environmental factors, such as the characteristics of food availability, accessibility, and food advertising (Swinburn et al., 2013; Swinburn et al., 1999; Glanz et al., 2005; Downs et al., 2020).

Advertising is one of the marketing dimensions that is capable of increasing brand awareness and purchase intention. The effectiveness of advertising depends on two important factors: the reach of the commercial message and the characteristics of the message such as providing of new information, useful advice to the individuals, the capacity to create curiosity about the brand or product, and the ability to generate enjoyment (Bronner and Neijens, 2006).

Highly persuasive communication has the potential to attract customers and develop brand awareness and loyalty (Close and Ham, 2016), which can be achieved by using persuasive strategies, i.e., a set of actions to convince consumers to buy a product based not exclusively on rational factors, but especially on emotional and sentimental ones (Santana et al., 2020). Some examples of persuasive advertising strategies are advertisement repetition, product demonstration, peer popularity appeal, celebrity endorsement, and premiums (Rozendaal et al., 2011). Although all individuals are influenced by the persuasive power of marketing communication, children and adolescents are the most vulnerable groups because they lack cognitive abilities in differentiating an informative tone from commercial content (Carter et al., 2011; Calvert, 2020).

Studies on food advertising are centered on food television (TV) and

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show a high number of unhealthy food advertisements (ads) (Cairns et al., 2013; Kelly et al., 2019; Soares Guimarães et al., 2020; Leite et al., 2020). With the advent of the internet, other media have also been used to promote food, among which social media platforms stand out (Kelly et al., 2013). These platforms are highly accessed by individuals and in 2019 Facebook, Instagram, and YouTube had 2.14 billion, 1 billion and, 2 billion active accounts, respectively (Statista, 2019; YouTube, 2020). In comparison to the traditional and mass advertising approach, social media marketing is characterized by modernism and refers to a more permeable, open, and flexible social media marketing culture (Felix et al., 2017).

In Brazil, almost 90% of all food ads announced on the open-TV are from ultra-processed foods (Soares Guimarães et al., 2020) and 96% of them included one or more persuasive advertising strategies (Santana et al., 2020). On social media, in Brazil, only a single study has investigated food ads on 16 ultra-processed food brands pages on Facebook during 2015 and posts contained user conversations, promotions, and celebrities' endorsements (Horta et al., et al., 2018).

This study aims to add knowledge about food advertising strategies in multiple media in Brazil and analyze, for the first time, the use of these strategies by food brands on TV and three platforms of social media. In the country, 96% of the households contain at least one TV set (IBGE, 2018) and 75% of the adult population have accounts on social media and uses it for a mean of 3.5 h per day (IBOPE, 2018). Brazilian children and adolescents also access social media content, among 24.3 million adolescents (9 to 17 years old) interviewed for a survey, 20 million (82%) reported using social media platforms (Tic kids, 2019). Our results will help better understand the exposure of the Brazilian population to the persuasive content of food advertising in the country.

2. Methods

This is an observational study that analyzed the persuasive advertising strategies used by food brands on TV and three social media platforms: Facebook, Instagram, and YouTube in Brazil.

Facebook is a social media platform that allows people to build public profiles and establish explicit connections with others in their social media, Instagram is another social media platform that provides users with video- and photo-sharing possibilities, and YouTube is a video-sharing platform/content community (Voorveld, 2019).

First, we will describe the sample selection, that was based on a previous study that monitored Brazilian TV advertising (Soares Guimarães et al., 2020). In this study, the programming of the three open TV channels with the largest national audience was recorded during eight non-consecutive days of April 2018 (four weekend days and four weekdays) from 6 am to midnight, totaling 432 h of recording (Soares Guimarães et al., 2020). The data collection procedure followed the protocol for monitoring TV advertising proposed by INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support) (Kelly, 2017; Soares Guimarães et al., 2020). According to this protocol, food advertising monitoring should occur in March, April, or May to ensure comparability over time and to avoid seasonality effects in the results over time (Kelly, 2017). INFORMAS is a global network of organizations and researchers of public interest that aims to monitor, compare, and support actions related to the public and private sector, creating healthy eating environments, reducing the incidence of obesity and chronic non-communicable diseases (NCD) (Swinburn et al., 2013).

A total of 7,991 TV ads were registered, of which 922 were from food and/or beverage products that were carried out exclusively by 42 food companies/brands (Soares Guimarães et al., 2020). Thus, a single brand can have more than one advertisement being broadcast on Brazilian TV and a single advertisement can be displayed more than once during the programming. We selected the brands responsible for 80% of the TV ads, in a way to reach a great part of food brands advertising on Brazilian TV. By this criteria, sample selection resulted in 18 brands, being two of fast-

food chains (Burger King and McDonald's), six of ultra-processed beverages (Coca-Cola; Dolly; Fanta; Novo Frisco; Pepsi; and Guaraná Antártica), two of cookies and sweets (Oreo and Snickers), four of meats and sausages (Friboi; Perdigão; Sadia; and Seara), and four of other food categories (coffee powder: Café Pilão; chocolate powder: Nescau; margarine: Qualy; and fermented milk drink: Yakult).

Then, the Facebook, Instagram, and YouTube pages of these brands were identified by searching the name of each brand on the platforms. Currently, the number of active accounts on Facebook Brazil is around 150 million, while Instagram and YouTube have a total of 106.5 million and 105 million respectively (NapoleonCat, 2021; Forbes 2021). Brand communication in social media can be any piece of brand-related communication distributed via social media that enables internet users to access, share, engage with, add to, and co-create (Voorveld, 2019). In our study, we are limiting our approach to the content (posts and videos) published by the selected food brands on their official pages on social media platforms in April 2018. The definition for one month of data collection followed the same procedure used for food television monitoring, enabling comparisons. Other studies have also monitored food advertising on social media during this period (Busse, 2018; Buchanan et al., 2018; Jaichuen et al., 2019). When visiting the brand pages, the number of subscribers of each brand page on the platforms was also registered.

On Facebook, only the Yakult brand page was not found and the Dolly, Maturatta Friboi, Sadia, Snikers, and Seara brands did not publish posts during the data collection period. On Instagram, the companies Yakult and Frisco were not found and the companies Snickers, Seara, Oreo, Friboi, Dolly, Sadia, and Perdigão did not publish in this period. Regarding YouTube, all the selected companies had channels on the platform; however, the companies Yakult, Dolly, Friboi, Nescau, Frisco, Sadia, Seara, and Snikers did not post videos in the analyzed period. These losses indicate that our sample was composed mainly of brands that are more present on social media in Brazil.

In all the four studied media, according to the INFORMAS protocol, 27 persuasive advertising strategies were investigated and classified into three major groups: power of advertising strategies (n = 10), use of the prize offering (n = 9), and use of brand benefit claims (n = 8) (Kelly, 2017). Some examples of the power of the advertising strategies are the use of licensed characters, celebrities, awards, etc; the premium offers category includes pay 2 take 3 or more, gifts or collectable, limited edition, and others; the brand benefit claims strategies contain messages that exalt sensory-based characteristics (flavor, taste, aroma), recommend how to use/consume the product, etc. More details of each persuasive advertising strategy are presented in Box 1.

Box 1

Persuasive advertising strategies investigated.

Variables	Description
Power of advertising	
Cartoon/Company owned character	Representation of the brand character (e.g., M&Ms)
Licensed character	Representation of a licensed character (e.g., Dora the explorer)
Amateur sportsperson	Representation amateur sportsperson (e.g., a person playing a sport)
Celebrity (non-sports)	Representation of celebrities, such as musicians, actresses and actors, and others (e.g., Jamie Oliver)
Movie tie-in	Mention of movies exhibited in the country (e.g., Shrek)
Famous sportsperson/team	Representation of sports celebrities or teams (e.g., Neymar)
Non-sports/historical events/festivals	Mention of commemorative dates (e.g., Christmas, New Years' Eve, Easter, etc)
'For kids'	Image of a child, 'great for school lunches', 'for school lunchboxes'
Awards	

(continued on next page)

Box 1 (*continued*)

Variables	Description
	Awards of the announced products (e.g., Best Food Award 2014, award winning, number one best-selling')
Sports events	Representation of sports events (e.g., Olympics games and the FIFA World Cup, etc)
Premium offers	
Game and app downloads	Brand indications about games and apps to be downloaded (e.g., Happy Meal App (App McDonald's with games and activities)
Contests	Contest proposed by the brand that involves individual subscription (e.g., Coca-Cola Holiday 2020 Instant Win and Sweepstakes)
Pay 2 take 3 or other	Offer that enables buying more products and paying lesser (e.g., Buy one pizza and get one free)
20% extra or other	Offer that enables buying a higher content of the product at the same price that the original package (e.g., Kinder Bueno with 1 bar free)
Limited edition	Offer of a specific edition of the product (e.g, McDonald's World Cup burger)
Social charity	Mention of social charity actions conducted by the brand (e.g., Ronald McDonald House Charities)
Gift or collectable	Offer of gifts or collectable associated with the products (e.g., Kinder Joys)
Price discount	Offer of the product with reduction price (e.g., 25% off or low price)
Loyalty program	Offer of a loyalty program (e.g., rewards program, loyalty card)
Brand benefit claims	
Sensory-based characteristics	Exaltation of characteristics of the brand's products such as taste, texture, appearance, aroma (e.g., M&M: melts in your mouth, not in your hand).
New brand development	New product launched by the brand (e.g., new flavor)
Suggested use	Indication of how to use the product (e.g., great for lunchboxes)
Suggested users are children or whole family	Indication to consume the products by children or the whole family
Emotive claims	Message of fun, feelings, popularity (e.g., Open happiness)
Puffery	Claim to be advantageous over other products (e.g., the friendliest drink on the earth)
Convenience	Messages about how easy is to acquire, prepare or consume the products of the brand (e.g., ready to bake)
Price	Claims about the beneficial aspects involving the product cost

Source: Kelly (2017).

Although the persuasive advertising strategies investigated were specifically proposed for monitoring TV advertising, it was used in the present study on social media platforms for purposes of standardization and comparability of the studied media.

Data were tabulated using the Microsoft® Excel 2010 program and the public domain software Epi-info (StataCorp LP, College Station, United States). All data were tabulated independently by two researchers and cross-checked to correct any error (inter-coder reliability was $\geq$ 90%, except for three persuasive advertising strategies: sports events (89.2%); sensory-based characteristics (72.2%), suggested use (77.3%)). Despite this, all inconsistencies between both datasets were subsequently verified and resolved with a third researcher. Frequency estimates for the persuasive advertising strategies were calculated in the whole sample and stratified by brand and type of media. Chi-squared and Fisher's Exact tests were applied to compare proportions of advertising strategies among the four media using 5% as the significance level (p-value $<$ 0.05). The Stata statistical software version 12.1 was used for data analysis.

3. Results

The sample of brands included in the study was mainly represented by brands that contain a high proportion of ultra-processed foods in their

repertoire (88.9%; n $=$ 16); the remained 11.1% (n $=$ 2) brands sell processed and minimally processed foods predominantly. During the data collection period, the 18 brands broadcast 52 ads on the programming of the three TV channels. On social media, the evaluated pages published 194 posts: 110 on Facebook, 55 on Instagram, and 29 on YouTube. The pages with the highest number of subscribers on Facebook were McDonald's (77,208,625), Fanta (19,891,239), and Coca-Cola (18,269,817), while on Instagram, McDonald's, Coca-Cola, and Burger King led this ranking: 1,766,338; 1,021,168 and 731,735 subscribers, respectively. On YouTube, the Fanta's channel had 647,275 subscribers, McDonald's' 249,199, and Sadia's 121,061 (Table 1).

Among the food companies, McDonald's stood out for the greater number of ads in the four media: the ads of this brand represented 38.8% of the total. Fanta, Qualy, Yakult, Burger King, and Coca-Cola were the brands that followed McDonald's in the number of ads (Table 2).

In the four media, the advertising strategies 'non-sports celebrities', 'sports events' and 'famous sportsperson or team' were the most used in the power of ads strategy category and this group of advertising strategy prevailed on YouTube (89.7%) and on Instagram (72.7%) in comparison to the other two media (TV: 65.3%; Facebook: 62.7%), p $=$ 0.038. Also, a higher frequency of the strategy 'cartoon/company owned character' was found on TV ads (19.2%; p $<$ 0.0001) in comparison to social media platforms (0% on the three platforms) while the presence of 'famous sportsperson/team' prevailed on YouTube (41.4%) in comparison to TV (19.2%), Facebook (10.9%) and Instagram (9.1%), p $<$ 0.0001 (Table 3).

In the premium offers' category, in the four media, 'limited editions' and 'gifts and collectibles' were the most common strategies employed on the ads. In addition, a higher frequency of 'price discounts' was noted on TV (9.6%) and Facebook (9.1%) ads in comparison to Instagram (0.0%) and YouTube (0.0%) posts (p $=$ 0.040) (Table 3).

Finally, messages emphasizing sensory-based characteristics of the advertised product (67.3%) and suggesting how to use the product (29.3%) were the advertising strategies under the group of brand benefit claims that most prevailed in the ads in the four media. On YouTube ads, the claims 'sensory-based characteristics' (86.2%), 'suggested use' (51.7%) and, 'emotive claims' (31.0%) were more commonly seen in comparison to the other media, while the claims about 'new brand

Table 1

Number of subscribers in each social media platform (Facebook, Instagram, and YouTube) according to food brands. Brazil, April 2018.

Brand	Facebook	Instagram	YouTube
Fast food chains			
Burger King	8,192,901	731,735	37,432
McDonald's	77,208,625	1,766,338	249,199
Ultra-processed beverages			
Coca-Cola	18,269,817	1,021,168	10,725
Dolly	160,278	*	*
Fanta	19,891,239	*	647,275
Novo Frisco	150,034	**	351
Pepsi	3,648,941	66,380	*
Guaraná Antártica	15,820,769	262,266	*
Cookies and sweets			
Oreo	*	*	*
Snickers	10,446,358	*	*
Nescau	2,260,411	12,068	32,633
Meat and sausages			
Friboi	1,177,612	*	16,613
Perdigão	893,724	*	22,799
Sadia	3,794,262	64,582	121,061
Seara	1,115,033	5,639	40,296
Others			
Café Pilão	275,196	5,000	13,012
Qualy	55,286	*	*
Yakult	**	**	*

*Number of subscribers not available.
**Brand has no page on the social media platform.

Table 2
Frequency of food advertising on television and social media (Facebook, Instagram, and YouTube) according to food brands. Brazil, April 2018.

Brand	Total (n = 246)		TV (n = 52)		Facebook (n = 110)		Instagram (n = 55)		YouTube (n = 29)	
	n	%	n	%	n	%	n	%	n	%
Fast food chains										
Burger King	19	7.8	3	5.8	11	10.0	2	3.6	3	10.3
McDonald's	95	38.8	15	28.8	46	41.8	20	36.4	14	48.3
Ultra-processed beverages										
Coca-Cola	17	6.9	2	3.8	8	7.3	6	10.9	1	3.5
Dolly	3	1.2	3	5.8	0	0.0	0	0.0	*	*
Fanta	22	9.0	4	7.7	6	5.5	9	16.4	3	10.3
Novo Frisco	6	2.4	2	3.8	4	3.6	*	*	*	0.0
Pepsi	8	3.3	2	3.8	2	1.8	3	5.5	1	3.5
Guaraná Antártica	7	2.9	4	7.7	1	0.9	1	1.8	1	3.5
Cookies and sweets										
Oreo	5	2.0	1	1.9	3	2.7	0	0.0	1	3.5
Snickers	1	0.4	1	1.9	0	0.0	0	0.0	*	*
Nescau	13	5.3	1	1.9	9	8.2	3	5.5	*	0.0
Meat and sausages										
Friboi	2	0.8	2	3.8	0	0.0	0	0.0	*	*
Perdigão	8	3.3	3	5.8	3	2.7	0	0.0	2	6.9
Sadia	3	1.2	3	5.8	0	0.0	0	0.0	*	*
Seara	1	0.4	1	1.9	0	0.0	0	0.0	*	*
Others										
Café Pilão	15	6.1	2	3.8	9	8.2	3	5.5	1	3.5
Qualy	20	8.2	2	3.8	8	7.3	8	14.6	2	6.9
Yakult	19	7.8	1	1.9	*	*	*	*	*	*

Note: Data collection involved the three open TV channels with the largest national audience. Programming of eight non-consecutive days of April 2018 were recorded from 6:00 am to midnight. On the internet, data collection included all social media posts published by the brands during April 2018. *Brand has no page on the social media platform.

Table 3
Frequency of persuasive advertising strategies used by the food brands on television and on social media (Facebook, Instagram, and YouTube). Brazil, April 2018.

Persuasive marketing strategy	Total - % (n = 246)	Media – %				p-value
		TV (n = 52)	Facebook (n = 110)	Instagram (n = 55)	YouTube (n = 29)	
Power of advertising	*100.0*	*65.3*	*62.7*	*72.7*	*89.7*	*0.038*
Celebrity (non-sports)	38.0	13.5	19.1	30.9	31.0	0.083
Cartoon/Company owned character	4.1	19.2	0.0	0.0	0.0	<0.0001
Sports events	42.8	21.1	26.4	29.1	41.4	0.264
'For kids'	14.0	19.2	9.1	7.3	3.5	0.080
Licensed character	12.8	11.5	9.1	7.3	6.9	0.856
Famous sportsperson/team	20.6	19.2	10.9	9.1	41.4	<0.0001
Amateur sportsperson	2.4	3.8	1.8	0.0	6.9	0.221
Non-sports/historical events/festivals	0.8	1.9	0.9	0.0	0.0	0.683
Movie tie-in	0.0	0.0	0.0	0.0	0.0	*
Awards	0.0	0.0	0.0	0.0	0.0	*
Premium offers	*71.9*	*42.3*	*53.6*	*43.6*	*55.2*	*0.399*
Price discount	6.1	9.6	9.1	0.0	0.0	0.040
Contests	7.5	5.8	10.0	1.8	3.5	0.196
Limited edition	41.6	26.9	21.8	29.1	37.9	0.336
Gift or collectable	19.6	15.4	12.7	12.7	10.3	0.929
Loyalty programs	5.2	0.0	4.6	3.6	3.5	0.501
Pay 2 take 3 or other	1.2	0.0	2.7	0.0	0.0	0.289
Game and app downloads	0.4	0.0	0.9	0.0	0.0	0.743
20% extra or other	5.6	0.0	4.6	3.6	6.9	0.379
Social charity	0.0	0.0	0.0	0.0	0.0	*
Brand benefit claims	89.7	*82.7*	60.9	45.5	*93.1*	*<0.0001*
Sensory-based characteristics	67.3	59.6	50.9	29.1	86.2	<0.0001
Suggested use	29.7	9.6	20.9	16.4	51.7	<0.0001
New brand development	9.8	23.1	7.3	0.0	13.8	<0.0001
Price	6.1	9.6	9.1	0.0	0.0	0.040
Puffery	0.4	0.0	0.9	0.0	0.0	0.743
Suggested users are children or family	14.4	21.1	8.2	7.3	6.9	0.049
Convenience	2.1	0.0	4.6	0.0	0.0	0.097
Emotive claims	15.0	0.0	7.3	10.9	31.0	<0.0001

Note: Data collection involved the three open TV channels with the largest national audience. Programming of eight non-consecutive days of April 2018 were recorded from 6:00 am to midnight. On the internet, data collection included all social media posts published by the brands during April 2018.
*Frequency of the marketing strategy was equal to zero in all media.

developments' (23.1%), 'price' (9.6%) and 'suggesting to children and the whole family to use the advertised product' (21.1%) prevailed on TV.

4. Discussion

Our results showed particularities in the use of persuasive advertising strategies on TV and in three social media platforms in Brazil. Although the high occurrence of these strategies was expected on the ads, since advertising content is always persuasive, this study highlighted the nuances about the commercial message that was being transmitted in each media. Another important finding of the study is that almost 90% of the brands that most carried out ads on Brazilian TV in 2018 were from the ultra-processed food segment. The majority of these brands have pages on social media and use the platforms to announce their products and interact with individuals.

The high presence of ultra-processed food advertising on TV has already been pointed out by other studies in different countries (Kelly et al., 2019; Kelly et al., 2010). In 2010, a collaboration between 13 research groups showed a high volume of TV advertising for unhealthy foods in the global programming aimed at children (Kelly et al., 2010). More recently, data from INFORMAS network described the prevalence of food advertising on TV in 22 countries, corresponding to 23% of the total number of ads recorded in 11,191 h of broadcasting (Kelly et al., 2019).

In Brazil, a study showed the occurrence of 10.8% of food ads on Brazilian open TV in 2018, 90.8% of which were ultra-processed foods (Soares Guimarães et al., 2020). In addition, results have shown that 80% of the foods advertised did not meet the nutritional profile criteria of the Pan American Health Organization (PAHO) and the World Health Organization (WHO), recommended for use in restrictive advertising measures worldwide (Leite et al., 2020).

In social media, other investigations have also demonstrated a large investment by ultra-processed food brands in food advertising in Thailand, New Zealand, and Australia (Jaichuen et al., 2019; Vandevijvere et al., 2018; Vassallo et al., 2018). In Brazil, 16 pages of ultra-processed food brands were among the 250 most liked pages by Brazilians on Facebook in 2014–2015 (Horta et al., 2018). No other study has monitored food brands pages on Instagram and YouTube in Brazil.

Besides the widespread of ultra-processed food advertisements in multiple media in Brazil, it is also important to address the potential reach of these ads. Almost all households (96.4%) in Brazil have at least one TV set (IBGE, 2018). This led to great number of individuals watching the TV channels considered during the period of data collection. These individuals have thus been exposed to the commercial message present in the ads. Regarding social media, the ads posted by the brands on their official pages have the potential to reach at least all the subscribers of the pages, which represents more than 50,000,000 individuals. The advertising reach in social media can be even higher and ads can also be seen by other social media users. This happens because companies have been using user data available on the internet to target advertisements based on the type of content consumed by the users (Montgomery et al., 2019). Since these messages are tailored to individual consumers, the potential persuasion of the exposure of this type of advertising is higher than the non-tailored ones.

Apart from reaching a lot of individuals, the ads we have studied also contained different advertising strategies to attract consumers. Previous studies have also addressed this aspect. On TV, a systematic review of 38 articles showed a predominance of the premium offers, promotional characters, nutritional claims, and appeal for taste and fun in this media (Jenkin et al., 2014). The recent study of monitoring of TV advertising in 22 countries also highlighted the use of promotional characters and offering prizes as frequent advertising strategies on TV (Kelly et al., 2019).

On social media, the monitoring of food advertising on Facebook in New Zealand revealed the endorsement by a famous sportsman or team

as the most common marketing strategy, followed by the premium offers (Vandevijvere et al., 2018). On Facebook in Thailand, all posts made by food brands contained at least one persuasive marketing strategy being the most frequent: the use of images, brand elements, and hashtags (Jaichuen et al., 2019). On Australian Instagram pages, 15 food brands showed athletes frequently on posts (Vassallo et al., 2018). And in New Zealand, 61% of 300 videos published by 15 food brands contained discounts, and 24% offered gifts (Vandevijvere et al., 2018). In Malaysia, videos of YouTube aimed at children contained claims of appealing benefits to taste (42%), new product promotion (32%), use of animations (22%), promotions (15%), and health and nutrition (8%) (Tan et al., 2018).

Our study innovates by revealing the occurrence of advertising strategies in different media which allowed us to better understand how food advertising is aligned with the characteristics of each media. Although digital technology has developed in the last decades, TV is still the main consumed media in many parts of the world and Brazil (EGTA, 2018). Also, an innovative study compared the effects of individuals being exposed to ads either on TV programs or videos on YouTube. The authors found that TV leads to more attention and to more positive emotions advertising than online advertising which means that TV advertising has a stronger immediate impact on the recipient (Weibel et al., 2019). The authors concluded that TV advertising is still the better choice for advertisers (Weibel et al., 2019). This finding can explain the high frequency of persuasive advertising found on TV ads that guarantees a commercial message that attracts consumers.

On social media, brands use marketing resources to stimulate sales, increase brand awareness, improve brand image, generate traffic to online platforms, reduce marketing costs, and create user interactivity on platforms by stimulating users to post or share content (Felix et al., 2017). In these media, marketers can deliver different messages tailored to individual consumers. Based on what marketers know about them, some individuals will be offered rewards, discounts, or information; others might be viewed as having a low lifetime-revenue potential and given less favorable treatment or ignored entirely (Montgomery et al., 2019).

However, social media should not be treated as an umbrella concept, since not all platforms are created equal and different functionalities and characteristics of social media platforms translate into different consumer experiences (Voorveld, 2019). For example, Facebook and Instagram are mainly used for social interaction, to fill an empty moment, and to be quickly informed and up to date. On the other hand, users choose YouTube for entertainment purposes and to feel happy, relaxed, and to have a moment for themselves (Voorveld et al., 2018).

The different social media proposals and the users' perceptions about them can help explain the presence of different persuasive advertising strategies in the food ads. Ads on YouTube channels presented more strategies that enhanced the ad power and strategies that highlighted positive characteristics of the product and the brand, e.g., brand benefit claims. To be effective, advertisements on this platform should be positive, fun, and interesting, otherwise, individuals can find them intrusive and annoying, making them wait several seconds to be able to skip the ad and continue watching the video content (Voorveld et al., 2018).

On Facebook and Instagram, advertisements can be also disturbing since an ad placed in someone's timeline interrupts what is meant to be a social experience, which is the main purpose of these platforms. This causes consumers to view the ad in a negative light, with possible drawbacks for the advertiser. Although the evaluated food brands have posted more times on Facebook and Instagram during the data collection period, the investment in using the adverting strategies seems to have been less important.

Another aspect that is important to be discussed in the social media marketing theme is the audience of the platforms and access to their content. In Brazil, and other parts of the world, social media platforms are mainly accessed by young adults (18–44 years old) (Statista,2019) and social media platforms restrict registration to individuals under 13

years old. Although individuals of all ages are influenced by the persuasive content of advertising (Vukmirovic, 2015), children are the most vulnerable subjects (Carter et al., 2011; Calvert, 2020). However, we can not affirm that only individuals above 13 years old are exposed to food advertising on social media. When registering on these platforms, children can misinform their real age and get inside the social media universe. In the case of YouTube, in order to protect children from abusive content, the company created a specific platform for their access, known as YouTube Kids. But the content of all channels of YouTube can be accessed by any individual without log-in.

According to the above, we can conclude that Brazilian children are potentially exposed to the food advertising content and our results showed a high prevalence of advertising strategies that dialogues directly with the children (e.g., cartoon/company owned character; licensed character; 'For kids'; suggested users are children or whole family, among others), especially on TV and YouTube. This makes important the discussion about the abusiveness of the advertising in Brazil.

The Consumer Defense Code (*Código de Defesa do Consumidor* - CDC) of 1990 considers illegal all the ads that transfer false information or any content capable of inducing the subject to error, in addition to the ads that use the deficiency of judgment and inexperience of a child or propagate information capable of inducing the consumer to a behavior that can damage his health or safety (Henriques et al., 2014). Also, the Resolution 163/2014 of the National Council for the Rights of Children and Adolescents (*Conselho Nacional dos Direitos da Criança e do Adolescente* – CONANDA) describes the types of abusive advertising directed at children that intend to persuade them to ingest or buy any products or services, whatever the means of communication that is transmitted (Henriques et al., 2014).

In addition to state regulation, the National Council for Advertising Self-Regulation (*Conselho Nacional de Autorregulamentação Publicitária* – CONAR), formed by entities linked to advertising production and industry, proposes restrictions on food advertising and advertising aimed at children (CONAR, 2021). However, this model of regulation is criticized from the point of view of representativeness of the interests involved since there is no representation of civil society and the State in the composition of the council (Henriques et al., 2014).

Despite the content of the CDC, the CONANDA Resolution, and the self-regulation proposed by CONAR, the weakness of these regulations is exposed by the results of the present study. First, Brazil's federal legislation must be appropriately overseen and penalties should be enforced in case of breaches (Henriques et al., 2014). In the self-regulating field, penalties are not sufficiently imposed (CONAR, 2021). In the digital landscape, low levels of monitoring can be explained by the necessity of high-tech tools to collect data about food advertising on the internet. Also, social media allow ordinary people, who are not part of the food industry, to replicate advertisements by sharing or retweeting them on their social media. The easy and speedy sharing of these advertisements makes it difficult to trace and attribute responsibility. The process of identifying the advertisements is also hampered by sponsorship strategies involving digital influencers or celebrities. Companies have consistently sponsored these influencers to advertise their products on social media, frequently hiding the commercial partnership behind it (Rodrigues et al., 2021; UNSCN, 2020).

Together, these aspects reinforce the importance of strengthening advertising legislation in Brazil, including the applicability to the digital landscape. This can be achieved by creating channels for registering complaints, and also by speeding up the process of dealing with these complaints. The food industry must comply with the regulatory terms in their ads and the public authorities must endeavor to inspect their actions. Scientists should invest in research on the subject with the aim of systematically monitoring advertising practices in the food industry and their impact on consumer health. Civil society can be motivated through campaigns to raise public awareness regarding the issue of food advertising (Rodrigues et al., 2021). Reducing the population's exposure to

unhealthy foods ads is essential for the country's food information environment to promote healthy food choices, without the influence of unhealthy food companies.

Although being pioneering research that describes and compares food advertising carried out in Brazil on TV and social media platforms, this study has limitations that need to be addressed. First, we selected the marketing strategies to be studied based on INFORMAS (Kelly, 2017) protocol, an instrument specifically proposed to monitor food advertising on TV. This instrument contains the main persuasive marketing strategies used by the food industry to advertise their products and influence food consumption. Although we have not measured the impact of the individual exposure to advertisements containing these strategies, literature has shown the high impact of such exposure in persuading consumers of all ages. Second, despite the risk of not being able to capture particularities of social media, due to the INFORMAS (Kelly, 2017) protocol being an instrument developed to monitor TV ads, the same was applied in the present study of digital media. This choice was made due to the objective of comparing the findings between TV and the internet. Third, we selected the most popular social media platforms in Brazil: the percentage of Brazilians that use Facebook, Instagram, and Youtube are above 40%. However, other platforms also contain food advertising but are lesser important in the context of Brazil. For example, Twitter and Tumblr are used by less than 15% of the population. In addition, some brands that composed our TV sample did not have accounts on social media or have not been published during the data collection period. Also, the study was carried out in 2018, when occurred the FIFA World Cup. Consequently, marketing strategies related to sports events were the most common in the sample, which can not represent the food advertising profile outside these dates.

5. Conclusion

The study showed, for the first time, characteristics of persuasion of food advertising in Brazil by applying a comparison between TV and three social medial platforms. We found that most brands that announce on Brazilian TV are ultra-processed food producers and have pages on social media where they use a varied repertoire of food advertising strategies. The implications of our findings refer to the importance of regularly monitoring food advertising on different media and studying the impact of individual exposure to the persuasive content, specially on the digital landscape where literature is lack, in a way to guide consumer defense actions and revisions of legislation.

CRediT authorship contribution statement

Jéssica Moreira Da Silva: Conceptualization, Data curation, Formal analysis, Writing - original draft. **Michele Bittencourt Rodrigues:** Data curation, Formal analysis, Writing - original draft. **Juliana de Paula Matos:** Conceptualization, Data curation, Formal analysis, Writing - review & editing. **Laís Amaral Mais:** Conceptualization, Methodology, Writing - review & editing. **Ana Paula Bortoletto Martins:** Conceptualization, Funding acquisition, Methodology, Writing - review & editing. **Rafael Moreira Claro:** Conceptualization, Methodology, Writing - review & editing. **Paula Martins Horta:** Conceptualization, Formal analysis, Methodology, Writing - review & editing.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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