

Advertising patterns of a fast-food chain on social media in Brazil

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Submitted 30 March 2021: Final revision received 17 November 2021: Accepted 13 December 2021: First published online 23 December 2021

Abstract

Objective: To investigate the advertising patterns on the posts of a fast-food chain in Brazil on three social media platforms in 2019.

Design: An exploratory cross-sectional study.

Setting: Advertising strategies on the posts of a major fast-food chain on their official Facebook, Instagram and YouTube accounts. The strategies were investigated according to the INFORMAS protocol for food promotion monitoring. Principal component analysis (PCA) was employed to identify advertising patterns in each platform.

Participants: 305 advertisements

Results: Four advertising patterns were identified in the PCA of Facebook and Instagram. In both platforms, the components *for kids* and *product exaltation* were similar. On Facebook, a pattern corresponding to economic appeal was identified as *price and discount*, while on Instagram, this pattern also included a practical approach. On Facebook, the fourth component was named *celebrity*, while on Instagram it was *celebrity/innovation* since on this second social media the component also included the 'new brand development' variable. On YouTube, three advertising patterns were identified in PCA. Similar to the other platforms, the first and the second patterns were called *for kids* and *price and discount*, and the third component referred to both *celebrity and commemorative dates*.

Conclusions: The advertising patterns of the fast-food chain on three social media platforms were commonly directed to children and addressed price, discounts and the celebrities' universe. The findings of this study corroborate other data in the literature regarding unhealthy food advertising on social media. This study discusses the urgency of regulating food advertising content on this medium.

Keywords
Food advertising
Social media
Ultra-processed food
Fast food

Consumption of ultra-processed food has increased in Brazil over the last few years and is replacing home-made dishes in the Brazilian diet^(1,2). Ultra-processed food contains high amounts of sodium, fats, sugars and food additives, and its excessive intake is associated with non-communicable diseases, such as obesity, CVD, cancer, among others⁽³⁾. Ultra-processed foods are widely available, easy to transport and store, ready-to-heat/ready-to-eat and hyper-palatable⁽³⁾. These characteristics make these products convenient and practical to eat^(3,4).

In order to enhance sales and acquire new customers, ultra-processed food companies use multiple types of media for advertising their products^(5,6). Individuals'

exposure to advertising content can influence their food consumption by increasing brand awareness and purchase intention⁽⁷⁾. Although all individuals can be influenced by the persuasive power of marketing communication⁽⁸⁾, children and adolescents are the most vulnerable groups because they possess limited cognitive abilities to differentiate an informative tone from commercial content^(9,10).

On social media, the persuasive potential of the commercial message is high because of the large number of individuals that use these platforms and the presence of highly interactive tools in posts, such as links, direct conversation, hashtags and other engagement elements⁽¹¹⁾. In addition, characteristics of peer endorsement and lack of

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explicit advertising cues presented in some forms of digital media make digital marketing even more impactful on subjects' food behaviour than those in traditional marketing⁽⁸⁾.

In Brazil, 75 % of internet users have accounts on Facebook, YouTube, Twitter, Instagram and other platforms^(12,13) and 16 of the 250 most popular Facebook pages in Brazil are those of ultra-processed food brands⁽¹⁴⁾. In addition, a recent study found that ultra-processed food companies are the main food companies that advertise on TV, Facebook, Instagram and YouTube in Brazil, and the message broadcasted by these brands varies across the media according to the advertising strategies used⁽¹⁵⁾. Despite this, little is known about the advertising patterns of food on social media platforms. This knowledge is necessary to generate evidence to understand the extent of the problem of food advertising exposure and to determine appropriate and effective policy responses⁽¹⁶⁾.

This study aimed to investigate the advertising patterns present on the posts of the most popular fast-food chain in Brazil on three social media platforms in 2019. The company in this study has a great diversity of ultra-processed foods on its portfolio and is the world's leading foodservice brand, with more than 36 000 restaurants in more than 100 countries. In Brazil, the company has 1026 restaurants located in all 26 states, and a survey carried out with 1998 Brazilian Internet users in October 2019 demonstrated that 73 % of the respondents had bought food from this company in the previous twelve months⁽¹⁷⁾.

Methods

This is an exploratory cross-sectional study that comprised all posts made by the most popular fast-food chain in Brazil on its official pages on Facebook, Instagram and YouTube from January 1 to December 31, 2019. These social media platforms are the most popular in the country^(12,13). 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 a platform that provides users with video- and photo-sharing possibilities, and YouTube is a video-sharing platform⁽¹⁸⁾. All posts were collected from the official pages in a single moment using a screen capture tool and saved as PDF files for further analysis. All shortlisted videos were viewed using the Google Chrome browser. While the videos and ads played within the browser, they were recorded with an on-screen recorder.

All posts were analysed regarding the presence and type of food items: if they were ultra-processed or not, based on NOVA classification⁽³⁾. We considered a food item to be present in the post when a representation of food was available, such as in a cartoon or as a picture in the scene or when real food was shown.

Advertising strategies were investigated based on the INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support) protocol for food promotion monitoring on television⁽¹⁹⁾. INFORMAS is a global network of public interest organisations and researchers that aims to monitor, benchmark and support public and private sector actions to increase healthy food environments and reduce obesity and non-communicable diseases and their related inequalities (www.informas.org). The INFORMAS framework consists of 10 modules related to food environment dimensions, including food promotion.

Advertising strategies from the INFORMAS protocol were further classified into three categories: the power of advertising (*n* 10) (e.g. use of licensed character, celebrities, awards, etc), premium offers (*n* 9) (e.g. pay 2 take 3 or more, gifts or collectable, limited edition, etc) and brand benefit claims (*n* 8) (e.g. messages that exalt sensory-based characteristics such as flavour, taste, aroma and recommend how to use/consume the product, etc)⁽¹⁹⁾, as described in Table 1. Although the INFORMAS protocol has been specifically proposed for food advertising monitoring on TV⁽¹⁹⁾, the variables present in this protocol have been used in other studies that have monitored food advertising on social media^(15,20–22).

Table 1 Advertising strategies investigated

Power of advertising	Premium offers	Brand benefit claims
<ul style="list-style-type: none"> ■ Cartoon/Company-owned character e.g. M&Ms ■ Licensed character e.g. Dora the explorer ■ Amateur sportsperson e.g. person playing a sport ■ Celebrity (non-sports) e.g. Jamie Oliver ■ Movie tie-in e.g. Shrek ■ Famous sportsperson/team e.g. All Blacks ■ Non-sports/historical events/festivals e.g. Christmas, Anzac Day ■ 'For kids' e.g. image of a child, 'great for school lunches', 'for school lunchboxes ■ Awards e.g. Best Food Award 2014, award-winning, number one best-selling' ■ Sports event 	<ul style="list-style-type: none"> ■ Game and app downloads ■ Contests ■ Pay 2 take 3 or other ■ 20 % extra or other ■ Limited edition ■ Social charity ■ Gift or collectable ■ Price discount ■ Loyalty program 	<ul style="list-style-type: none"> ■ Sensory based characteristics (taste, texture, appearance, aroma) ■ New brand development ■ Suggested use (e.g. great for lunchboxes) ■ Suggested users are children or the whole family ■ Emotive claims (fun, feelings, popularity) ■ Puffery (claiming to be advantageous over other products) ■ Convenience ■ Price

Source: Kelly, 2017.

Data were independently tabulated by two researchers using Microsoft® Excel 2010, and all inconsistencies were subsequently verified and resolved by a third researcher. Statistical analyses were performed using the statistical software, Stata, version 12.1.

First, the proportion of advertising strategies on each social media was described, and differences were tested using the chi-square test on 22 identified variables that had proportions greater than 0 in at least one of the assessed social media. Because there were multiple comparisons for each advertising strategy among the three social media platforms, statistical differences were considered when $P < 0.01$.

Then, principal component analysis (PCA) was employed to investigate the behaviour of the strategies used for food advertising in each platform. All strategies with a frequency of at least 10% on each social media were included in the analysis. Components with eigenvalues greater than 1.0 were retained, following Kaiser's criteria. Negative factor loadings indicated that the strategy was inversely associated with the component, while positive factor loadings indicated a direct association. Variables with factor loadings ≥ 0.30 (when positive) or ≤ -0.30 (when negative) were considered significantly associated with the component. Therefore, the greater the magnitude of the factor loading, the greater its contribution to the pattern. PCA is a technique for reducing the dimensionality of datasets, increasing interpretability but at the same time minimising information loss. This is done by creating new uncorrelated variables that successively maximise variance⁽²³⁾. In this study, PCA was used to create uncorrelated advertising patterns and synthesise the use of marketing strategies on social media posts. The use of PCA in studying food advertising patterns has also been applied in TV food marketing monitoring^(24,25).

Results

The fast-food chain published 305 advertisements on its official pages on Facebook ($n = 150$), Instagram ($n = 110$) and YouTube ($n = 45$) in Brazil in 2019.

Most of the posts (82.2%) contained a representation of a food item or a real food image. Among them, 6 (2.4%) were not of ultra-processed foods and referred to coffee or an advertisement of a reality show supported by the brand in which chefs are cooking unprocessed foods. When an image or a representation of ultra-processed food was present ($n = 245$; 97.6%), the majority were images of real products ($n = 238$) and seven were representations of ultra-processed foods (cartoons, for example). Posts that did not show food mainly referred to sustainability themes, social responsibility actions coordinated by the company or advertisements of toys.

Advertising strategies from the power of the advertising group were more frequent on YouTube (66.7%) than those on Facebook (43.3%) and Instagram (39.1%) ($P = 0.006$).

The presence of 'cartoon/company-owned character' ($P < 0.001$), 'for kids' ($P < 0.001$), 'licensed character' ($P = 0.001$) and 'movie tie-in' ($P = 0.007$) prevailed on YouTube in comparison with the other two platforms. Similarly, premium offers strategies were more common on YouTube (57.8%) than those on Facebook (38.7%) and Instagram (30.0%) ($P = 0.005$), going by the high number of 'gifts' or 'collectables' on the streaming video platform ($P < 0.001$). Brand benefit claims strategies were present on 100% of YouTube videos in comparison to 81.3% on Facebook posts and 86.4% on Instagram posts ($P = 0.007$). From this group of advertising strategies, 'suggested users are children or whole family' ($P = 0.001$), and 'emotive claims' ($P < 0.001$) were more frequent on YouTube advertisements than those on the posts on the other social media platforms (Table 2). Examples of the brand posts that used the advertising strategies under study are provided in the Supplementary Material.

Four advertising patterns were identified in the PCA of Facebook. The first one was *for kids* and was positively correlated with 'cartoon/company-owned character', 'for kids', 'licensed character', 'movie tie-in', 'limited edition', 'gift or collectable', and 'suggested users are children or the whole family'. The second component was *price and discount* and was positively correlated with 'price discount' and 'price' claims. The third was *product exaltation* and was positively correlated with 'sensory-based characteristics' and 'new brand development' and negatively correlated with 'non-sports/historical events/festivals'. The fourth component was *celebrity* and was positively correlated with 'celebrity (non-sports)', 'sensory-based characteristics' and 'emotive claims'. PCA explained 77.0% of the combined variability (Table 3).

Similarly, on Instagram, PCA resulted in four advertising patterns. First, *for kids*, was correlated with the same variables as the corresponding component on Facebook, except for 'cartoon/company-owned character' and 'movie tie-in'. The second was *practical/price and discount* and was correlated with 'price discount', 'limited edition', 'convenience' and 'emotive claims'. The third was *product exaltation* and correlated with the same variables as the corresponding component on Facebook. The fourth component was *celebrity/innovation* and was positively associated with 'celebrity', 'sensory-based characteristics', 'new brand development' and 'emotive claims' and inversely correlated with 'price discount'. PCA explained 71.7% of the combined variability (Table 4).

On YouTube, three advertising patterns were identified in the PCA. The first and second patterns were *for kids* and *price and discount*, respectively, and were correlated with the same variables as on Facebook's corresponding advertising patterns. The third component referred to both *celebrity and commemorative dates* and was positively correlated with 'celebrity', 'non-sports/historical events/festivals' and 'emotive claims'. PCA explained 71.3% of the combined variability (Table 5).

Table 2 Proportion of advertising strategies on posts published by a fast-food chain on its social media platforms (Facebook, Instagram and YouTube) in Brazil, 2019

Advertising strategy	Facebook (n 150)	Instagram (n 110)	YouTube (n 45)	P-value
Power of advertising	43.3	39.1	66.7	0.006
Celebrity (non-sports)	13.3	17.3	22.2	0.331
Cartoon/company-owned character	11.3	5.5	28.9	<0.0001
Sports event	0.0	0.0	0.0	–
'For kids'	18.7	11.8	42.2	<0.0001
Licensed character	17.3	10.0	35.6	0.001
Famous sportsperson/team	0.0	0.0	0.0	–
Amateur sportsperson	0.0	0.0	0.0	–
Non-sports/historical events/festivals	16.7	14.6	13.3	0.821
Movie tie-in	12.0	8.2	26.7	0.007
Awards	0.7	1.8	2.2	0.610
Premium offers	38.7	30.0	57.8	0.005
Price discount	10.0	10.0	11.1	0.974
Contests	0.0	0.0	0.0	–
Limited edition	25.3	20.9	37.8	0.091
Gift or collectable	16.7	10.0	37.8	<0.0001
Loyalty program	0.0	0.0	0.0	–
Pay 2 take 3 or other	4.0	2.7	0.0	0.375
Game and app downloads	0.0	0.0	0.0	–
20 % extra or other	0.0	0.0	0.0	–
Social charity	6.0	5.5	4.4	0.921
Brand benefit claims	81.3	86.4	100.0	0.007
Sensory based characteristics	58.0	69.1	75.6	0.045
Suggested use	4.7	7.3	2.2	0.399
New brand development	19.3	23.6	22.2	0.695
Price	10.0	9.1	11.1	0.925
Puffery	0.0	0.0	0.0	–
Suggested users are children or the whole family	18.7	10.9	37.8	0.001
Convenience	7.3	10.9	17.8	0.120
Emotive claims	34.7	38.2	88.9	<0.001

* χ^2 test with significance at 1 % ($P < 0.01$).

Table 3 Factor loadings for advertising strategies used by a fast-food chain on its official posts on Facebook, according to four components in Brazil, 2019

Advertising strategy	Component			
	For kids	Price and discount	Product exaltation	Celebrity
Power of advertising				
Celebrity (non-sports)	-0.07	-0.10	-0.21	0.72
Cartoon/company-owned character	0.35	0.04	0.13	0.04
'For kids'	0.39	-0.01	-0.03	0.01
Licensed character	0.36	0.00	0.11	0.02
Non-sports/historical events/festivals	0.00	-0.19	-0.58	-0.05
Movie tie-in	0.35	0.02	0.08	0.01
Premium offers				
Price discount	-0.07	0.67	-0.07	0.00
Limited edition	0.30	0.16	0.07	-0.15
Gift or collectable	0.39	0.01	0.01	0.00
Brand benefit claims				
Sensory-based characteristics	-0.19	0.05	0.50	0.31
New brand development	-0.11	-0.16	0.56	-0.11
Price	-0.07	0.67	-0.07	0.00
Suggested users are children or whole family	0.37	0.00	-0.01	0.06
Emotive claims	0.16	0.09	0.06	0.58

Note: The values in bold represent a correlation greater than 0.30 or lesser than -0.30.

Discussion

This study showed the advertising patterns present on posts published by a popular fast-food chain on its official pages on social media in Brazil. Although exploratory and restricted to one brand, the findings of this study

corroborate other data in the literature that show the predominance of unhealthy food advertising on social media, and this discusses the urgency of regulating food advertising content on this medium^(14,15,20,26–29). These studies applied different protocols to collect advertising strategies and classify food items.

Table 4 Factor loadings for advertising strategies used by a fast-food chain on its official posts on Instagram, according to four components in Brazil, 2019

Advertising strategy	Component			
	For kids	Practical/Price and discount	Product exaltation	Celebrity/Innovation
Power of advertising				
Celebrity (non-sports)	-0.10	0.17	-0.26	0.55
'For kids'	0.47	-0.09	-0.01	0.07
Licensed character	0.40	-0.13	0.10	0.10
Non-sports/historical events/festivals	0.03	0.02	-0.63	0.08
Premium offers				
Price discount	-0.01	0.56	0.18	-0.37
Limited edition	0.32	0.30	0.29	-0.08
Gift or collectable	0.47	-0.06	0.05	0.10
Brand benefit claims				
Sensory-based characteristics	-0.17	0.10	0.44	0.46
New brand development	-0.15	-0.25	0.41	0.38
Suggested users are children or whole family	0.46	-0.11	0.03	0.05
Convenience	0.05	0.56	0.04	0.13
Emotive claims	0.15	0.36	-0.23	0.39

Note: The values in bold represent a correlation greater than 0.30 or lesser than -0.30.

Table 5 Factor loadings for advertising strategies used by a fast-food chain on its official posts on YouTube, according to three components in Brazil, 2019

Advertising strategy	Component		
	For kids	Price and discount	Celebrity/Commemorative dates
Power of advertising			
Celebrity (non-sports)	-0.15	-0.07	0.49
Cartoon/company-owned character	0.33	0.06	-0.08
'For kids'	0.36	0.04	0.02
Licensed character	0.36	0.07	0.05
Non-sports/historical events/festivals	-0.08	-0.13	0.59
Movie tie-in	0.31	0.08	0.03
Premium offers			
Price discount	-0.14	0.60	-0.08
Limited edition	0.33	0.00	-0.18
Gift or collectable	0.37	0.07	0.03
Brand benefit claims			
Sensory-based characteristics	-0.22	-0.02	-0.22
New brand development	-0.15	-0.30	-0.38
Price	-0.14	0.60	-0.08
Suggested users are children or the whole family	0.34	0.03	-0.04
Convenience	-0.15	0.27	-0.02
Emotive claims	0.11	0.25	0.40

Note: The values in bold represent a correlation greater than 0.30 or lesser than -0.30.

On Facebook, the use of interactive games, apps, celebrities, licensed characters and sportspersons was noted on 27 pages of food brands in Australia, including pages from seven fast-food chains companies⁽²⁰⁾. In New Zealand and Thailand, the use of hashtags on Facebook posts and the presence of athletes, sports teams and premium offers were also common^(26,27). On Instagram, 15 accounts of food brands, seven from fast-food chains, advertised brand elements (logos, colours, fonts, trademarks or slogans)⁽²⁹⁾. On YouTube, studies from Malaysia and New Zealand have shown the high use of discounts, premium offers, the launch of new products and claims for flavours in videos posted by food brands^(28,29).

In addition to these social media, other platforms such as Twitter and Twitch have become increasingly popular and

contain food advertising. On Twitter, food and beverage brands create entertaining human personalities for their social media accounts as a powerful advertising tool for attracting young adults. The strategies used most included humour, trendy language and trending topics⁽³⁰⁾. On Twitch, although there are still no studies that characterise the advertising strategies on this emerging platform, a recent study demonstrates that food and beverage brands accumulate millions of hours of exposure⁽³¹⁾ and that food marketing exposures on this platform influence consumption and users' purchasing behaviours⁽³²⁾.

In Brazil, a study pointed out that the fast-food brand studied in this investigation was one of the most popular commercial pages on Facebook in terms of the number of followers⁽¹⁴⁾. In addition, a recent study showed that this



fast-food chain was among 18 food brands with the highest number of advertisements on TV and three social media platforms in Brazil⁽⁴⁵⁾. The present investigation innovates on this subject by analysing the advertising patterns of this company on three social media platforms.

To the best of our knowledge, only two studies focusing on TV advertising have applied PCA to identify food advertising patterns in Brazil^(24,25). One of them found five advertising patterns called *distinction, for kids, price and discount, sportive* and *innovation* by applying the INFORMAS protocol for food promotion monitoring⁽²⁴⁾. Compared to our results, only the *sportive* component was not identified in the fast-food brand posts, which can be explained by the proximity of the 2018 FIFA World Cup to the data collection period adopted by Santana *et al.*⁽²⁴⁾. Another study applied PCA to identify patterns of abusive marketing techniques based on two Brazilian regulations and the INFORMAS protocol and found five patterns, of which four were specifically directed to children or adolescents⁽²⁵⁾.

Therefore, similar to the advertising pattern on Brazilian television, posts from the fast-food chain in this study on three social media were commonly directed to children and talked about price, discounts and the celebrities' universe. On Facebook and Instagram posts, the brand exalted the characteristics of its products.

Children are considered highly vulnerable to marketing content because they cannot differentiate persuasive content from informative content^(9,10). Although social media commonly impose restrictions on children's access, these limits are overridden by omitting real age or accessing the content without signing in (applies to YouTube). A Brazilian survey carried out in 2018 showed that among 24.3 million children aged 9–17 years who mentioned that they access the Internet, 20 million (82 %) have a social media account⁽³³⁾. This is concerning because when using digital media, their data may be tracked and commercialised. This raises issues not only around privacy violations but also around behavioural manipulation by exploiting children's vulnerability to digital marketing⁽³⁴⁾.

Thus, our results reinforce the recommendation made by health organisations around the world to implement restrictions on food advertising directed at children^(11,35,36). According to the World Health Organization Regional Office for Europe, children have the right to participate in digital media, and when they are participating, they have the right to protect their health and privacy and not to be economically exploited⁽³⁵⁾. The World Cancer Research Fund International states that protecting children from harmful marketing practices is a human rights issue: governments have to protect, respect and fulfil children's right to health, and marketing of products high in fat, sugar and salt can be framed as a child rights matter, encompassing rights such as the right to health, privacy and information⁽³⁶⁾.

In Brazil, the Consumer Defense Code (*Código de Defesa do Consumidor* – CDC) of 1990 considers advertisements that take advantage of the child's judgement and experience as illegal⁽³⁷⁾. In addition, Resolution 163/2014 of the National Council for the Rights of Children and Adolescents (*Conselho Nacional dos Direitos da Criança e do Adolescente* – Conanda) interprets CDC prohibition and describes the types of abusive advertising directed at children who intend to persuade them to consume or buy any products or services, which includes several of the advertising strategies in this study⁽³⁸⁾.

Thus, it is evident that Brazilian legislation restricting advertising targeted at children's is ineffective. To move forward on this agenda, the Brazilian State should prioritise comprehensive national policies that protect the exposure of children to the advertising content, adapt and extend the legislation to the digital environment, develop high-tech monitoring tools and appropriate sanctions and penalty mechanisms for both creators of marketing content and dissemination platforms when there are irregularities⁽³⁵⁾. Additionally, food and beverage companies must adapt their marketing practices to state legislation, since prior research has pointed out the ineffectiveness of autoregulation and civil responsibility^(36,39).

Regarding the appeal of fast-food chain posts on price, discounts and product characteristics, they focused on coupons, combos (a combination of food items and drinks offered at a discount), free delivery (in case of delivery services), low prices, high portions, convenience and great satisfaction. However, this approach was not similar for all social media platforms. On Instagram, the brand associated the economic claim with the practical appeal and the celebrities' context with innovation in the products. On YouTube, celebrity and commemorative dates were grouped into the same component.

These results highlight that this brand chooses social media strategically to reach a specific consumer that is influenced by specific content. On Instagram, the brand focuses on the products and their characteristics, especially when launching a new or limited-edition product. This platform layout allows the company to share objective information about their products and to mark the address of food outlets. In contrast, YouTube publishes videos with different purposes and longer durations, characterising a platform more indicated for the dissemination of information such as brand history, mission and values, which usually involves emotive claims, but also to disseminate the same advertisements that are spread on television. This can explain the high use of emotive claims by the brand on YouTube videos, in addition to the diversified use of marketing strategies.

Therefore, in addition to limiting the exposure of children to digital food advertising content, it is necessary to strengthen the discussion about ultra-processed food companies' exchange with the public. People of all ages are vulnerable to the marketing content of ultra-processed

food companies and the consequences of consumption of this kind of product^(8,40). Restricting the advertising of food with a high content of sodium, saturated fat, added sugars and other nutrients is a measure of protecting all individuals from the advertising of unhealthy foods. For example, in Chile and Peru, in any advertisements of food items that are not aligned with a nutrient profile model must display sentences in a clear, legible, highlighted and understandable form about the harmful consequences of consuming these products regularly^(41–43). In Brazil, these alerts will soon be implemented on the front of food packaging due to a recently passed food labelling regulation⁽⁴⁴⁾; however, the legislation does not include restrictions or warnings on food advertisements. Therefore, it is necessary to implement a policy with a comprehensive marketing restriction, including food labelling and food advertising, ensuring more efficiency in preventing the exposure of individuals to unhealthy food advertising.

Finally, it is important to mention the limitations of the study results. First, we have studied a single brand and the advertising patterns identified may not represent the pattern of other brands, although a great similarity has been found with other studies that have described food advertising on Brazilian television^(24,25) and social media^(14,15). Evaluating the food advertising practices of other companies would support the generalisability of the findings. Second, the INFORMAS food promotion protocol was adopted, although it was proposed for food advertising monitoring on TV. However, the advertising strategies studied by this protocol are also commonly studied in social media investigations^(15,20–22). In addition, collecting marketing strategies is a task with high subjectivity, which was minimised in the present study by applying double-coded data collection and correcting all divergences.

In sum, this study showed, for the first time, the advertising patterns presented on fast-food chain social media accounts. Since the majority of the products promoted were ultra-processed foods, the high exposure of individuals to this persuasive content is of concern. Future studies can address whether pages from other ultra-processed companies contain the same advertising patterns and elucidate how this content can impact an individual's food behaviour. These findings have the potential to guide policy responses.

Acknowledgements

Acknowledgements: None. **Financial support:** This research received no specific grant from any funding agency, commercial or not-for-profit sectors. **Conflict of interest:** There are no conflicts of interest. **Authorship:** J.M.S.: Conceptualisation; methodology; investigation; writing (original draft), J.P.M.: Conceptualisation; methodology; investigation; writing (review and editing), M.B.R.:

Conceptualisation; methodology; investigation; writing (review and editing), L.A.M.: Conceptualisation; methodology; writing (review and editing), R.M.C.: Conceptualisation; methodology; investigation; writing (review and editing), P.M.H.: Conceptualisation; methodology; investigation; data curation; formal analysis; writing (review and editing); supervision. **Ethics of human subject participation:** This study does not involve human participants.

Supplementary material

For supplementary material/s referred to in this article, please visit <https://doi.org/10.1017/S1368980021004973>

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