Short Communication

Ultra-processed food product brands on Facebook pages: highly accessed by Brazilians through their marketing techniques

Paula M Horta*, Fernanda T Rodrigues and Luana C dos Santos
Nutrition Department, Federal University of Minas Gerais, Professor Alfredo Balena Avenue 190, 3th Floor, Room 324, Santa Efigênia, 30130-100 Belo Horizonte, MG, Brazil

Abstract

Objective: To analyse the content and extent of marketing of ultra-processed food products (UPP) and their brand pages on Facebook, which are highly accessed by Brazilians.
Design: Descriptive.
Setting: Sixteen UPP brand pages on Facebook were selected from 250 pages that were the most liked by Brazilians in October 2015.
Subjects: We analysed the frequency of 'likes' and members 'talking about' each one of the pages, in addition to fifteen marketing techniques used in the previous year (September 2014 to October 2015). The number of posts, likes, 'shares' and 'commentaries', and the mean number of likes, shares and commentaries per post, were collected for one month, from 23 September to 23 October 2015.
Results: The two most liked pages were: Coke® (93 673 979 likes) and McDonald's® (59 749 819 likes). Regarding the number of people talking about the pages, McDonald's led with 555 891 commentaries, followed by Coke (287 274), Burger King® (246 148) and Kibon® (244 523). All pages used marketing techniques, which included photos, user conversations, presence of brand elements and links. Videos were observed on 93·8 % of the pages; promotions on 68·8 %; and celebrities on 62·5 %. In one month, Garoto®, Outback® and Coke were brands that published more than one post per day. Kibon achieved the highest ratio of likes per post (285 845·50) and Burger King had the highest mean shares per post (10 083·93), including commentaries per post (7958·13).
Conclusions: UPP marketing is extensively used on Facebook pages and is highly accessed by Brazilians, with UPP companies employing a diversity of marketing strategies.

Brazilians' dietary patterns and nutritional status have changed adversely in the last few decades[1–4]. The percentage of total energy acquired from ultra-processed food products (UPP) in Brazilian households increased from 20·8 to 25·4 % between 2002–2003 and 2008–2009[5], and more than 50 % of the adult population is now overweight[6].

UPP are 'ready-to-consume' products, made up mostly or entirely of substances extracted from other foods (oils, fats, sugar, proteins) and derived from food constituents (hydrogenated fats, modified starches) or synthesized foods based on organic materials (dyes, flavourings, enhancers and other additives)[7]. They are energy-dense foods, highly palatable, and available in most food stores.

These foods lead to overconsumption, weight gain and development of non-communicable diseases. Some examples of UPP are carbonated drinks, sweet or savoury packaged snacks, cookies, mass-produced packaged breads and buns, breakfast 'cereals', 'meat and chicken extracts' and 'instant' sauces[7]. UPP are the main type of products promoted in food marketing techniques.

Scientific evidence about food marketing and individual food consumption is centred on television publicity and its impact on children's dietary intake. The number of hours a child is exposed to television is associated with body weight and unhealthy food consumption. Early exposure to food marketing contributes to food brand loyalty, which can last one's whole life[8–13].

With the advent of the Internet, new types of food marketing emerged for use in social media apps such as Twitter, Instagram and Facebook. These apps allowed more attractive and persuasive marketing techniques with greater interaction with the consumer; they include photos, videos, music and games. The impact of this type of marketing on food consumption remains unknown for all age categories[14–16].

Facebook is one of the most popular social media platforms in Brazil. It is estimated that sixty-two million Brazilians access this app every day[17]. Facebook is available for individuals or companies, including the food industry. Few studies exist on food marketing on Facebook and only one study has investigated food marketing content on Facebook in Australia[16].

Considering Brazilian's epidemiological scenario and the spread of food marketing on Facebook, the present study aimed to analyse the content and extent of marketing of UPP brand pages, which are continuously accessed by the Brazilian population.

Findings from this investigation provide a description of how UPP brands promote their products on Facebook and which marketing techniques are used. We believe this description is the first step in understanding the marketing of UPP on social media, their influence on consumer behaviour and the possibility of regulations. The study will also help assess the specifics of food marketing around the world by providing data to be used in country comparisons.

Methods

We identified the 250 most liked pages on Facebook by Brazilians in October 2015 using the Socialbakers' rank (www.socialbakers.com). Socialbakers provides a freely available list of the top 1000 Facebook pages by 'likes' across a range of industries, with the option to filter likes by user country. From these pages, 234 were excluded because they were related to television stations, soap operas, celebrities, banks, beauty products, soccer players, alcoholic drinks or other products. Therefore, the sample for the present study consisted of sixteen pages related to UPP (Table 1). Pages can be from Brazilian companies or global brands that Brazilians 'liked' and were printed in the Portuguese language.

For each brand in the study, we investigated its Socialbakers' ranking, product category (soda, chocolate, fast food, sweet, chewing gum, ice cream and restaurant), date (month and year) of the first posting, and absolute and relative frequency of likes and people and members 'talking about' the page.

We also analysed fifteen marketing techniques (Table 2) used by brands in the year before the present study (September 2014 to October 2015). The techniques were those defined by Freeman *et al.*[16].

Finally, each page was analysed for one month, 23 September to 23 October 2015, regarding publicity comprehensiveness. The numbers of posts, likes, 'shares' and 'commentaries' were registered, and the mean number of likes, shares and commentaries per post were calculated.

All analyses were conducted by two researchers, with the results compared and the divergences verified. Data were tabulated with Microsoft® Excel 2010, in addition to absolute and relative frequency calculations.

Results

Among the sample, two brands were more popular (the combined number of likes represented 50 % of the total number of likes): Coke® (93 673 979 likes, 35·0 %) and McDonald's® (59 749 819 likes, 22·3 %; Table 1).

Regarding people talking about the pages, McDonald's ranked highest with 555 891 (25·7 %) commentaries. This was followed by Coke (287 274 commentaries, 13·3 %), Burger King® (246 148 commentaries, 11·4 %) and Kibon® (244 523 commentaries, 11·3 %; Table 1).

Burger King had the highest percentage of members 'commenting' on the posts (4·96 %; Table 1). All brands used photos, elements, links directing users to other pages and conversations. Videos were registered on 93·8 % (n 15) of pages; promotions that offer advantages such as special prices and rewards on 68·8 % (n 11); and celebrities on 62·5 % (n 10) of pages (Table 2).

Finally, in terms of marketing comprehensiveness over one month, some brands published more than once per day: Garoto® (1·83), Outback® (1·43) and Coke (1·07). Kibon reached the highest mean of likes per post (285 845·50) and Burger King had the highest mean number of shares per post (10 083·93) and commentaries per post (7958·13; Table 3).

Discussion

The present study is the first to describe the scope and diversity of marketing strategies by UPP brands on Facebook, which is frequently accessed by Brazilians. In this medium in which people interact with each other, brands are also part of the marketing techniques to improve consumption, including UPP brands. Approximately 6 % of the 250 most liked Facebook pages are for UPP brands, and among the ten most liked Facebook pages by Brazilians, two are UPP brands.

Our findings similarly corroborate findings of an analysis of UPP marketing on Facebook in Australia, in which twenty-seven UPP brands used photos and other marketing techniques to promote their product. In addition, many of these brands also used videos, celebrities, gift offers and rewards[16]. Studies conducted in other countries can offer more evidence about UPP marketing on Facebook worldwide, thereby providing more data for comparison.

Table 1 Ultra-processed food product brands marketed on Facebook in Brazil, October 2015

Brand	Socialbakers' rank	Category	Creation	Likes* n	Likes* %	People talking about† n	People talking about† %	Members talking about‡ %
Coca-Cola®	7	Soda	Dec/14	93 673 979	35·0	287 274	13·3	0·31
Guaraná Antártica®	8	Soda	Mar/07	16 476 248	6·2	60 777	2·8	0·37
Garoto®	17	Chocolate	Mar/12	13 053 655	4·9	30 073	1·4	0·23
Cacau Show®	56	Chocolate	Jun/11	7 994 167	3·0	104 369	4·8	1·31
Lacta official®	58	Chocolate	Dec/11	7 866 224	2·9	27 233	1·3	0·35
McDonald's®	81	Fast food	Oct/10	59 749 819	22·3	555 891	25·7	0·93
Bis®	102	Chocolate	Sept/10	6 145 118	2·3	42 977	2·0	0·70
Halls®	108	Sweet	Jan/09	6 046 791	2·3	143 314	6·6	2·37
Subway®	114	Fast food	Nov/11	5 846 228	2·2	148 168	6·8	2·53
Trident®	140	Chiclet	Jul/10	13 929 932	5·2	36 892	1·7	0·26
Guaraná Kuat oh yeah®	155	Soda	Sept/10	4 968 720	1·9	22 184	1·0	0·45
Burger King®	159	Fast food	Jul/11	4 962 731	1·9	246 148	11·4	4·96
Kibon®	197	Ice cream	Aug/10	7 562 994	2·8	244 523	11·3	3·23
Mundo Fini®	217	Sweet	Sept/10	4 092 352	1·1	71 331	3·3	1·74
Outback®	229	Soda	Aug/04	2 838 419	4·6	74 505	3·4	2·62
Mentos®	233	Sweet	Mar/11	12 387 567	4·6	68 202	3·2	0·55
Total	–	–	–	267 594 944	100·0	2 163 861	100·0	22·91

*The number of unique users who added a page to their news feed and a section about their profile.
†The number of unique users who created a story about a page in a 7 d period. On Facebook, stories are items that are displayed via news feed. Users create stories they like, post on a page wall, like a post, comment on a post, share a post, answer a question, RSVP to a page's event, mention the page in a post, tag the page in a photo, check in at a place, share a check-in deal, like a check-in deal, write a recommendation or claim an offer.
‡The percentage of people talking about a page divided by the number of users who liked the page.

Table 2 Marketing techniques used by ultra-processed food product brands (n 16) on Facebook in Brazil, September 2014–October 2015

Marketing techniques	Technique description	n	%
Brand elements	Logo, slogan or any other element related to the brand	16	100·0
Links	A link for access to an external page to Facebook	16	100·0
Photos	Use of digital images of the product or of the users	16	100·0
Conversation	Brand's page administrator directly talks to users through posts	16	100·0
Videos	Videos published directly on Facebook or accessed through YouTube	15	93·8
Promotions, special prices, contests, prizes, gifts	Reduced prices, promotions (money, electronic products, travel), awards for a specified time	11	68·8
Celebrities	Celebrities from media and entertainment (actors, singers, presenters)	10	62·5
Brand characters	Character created by the brand	8	50·0
Sponsorship and partnership	Post in which the brand supports or sponsors other brands or services	8	50·0
Events	Organization of events in which users can participate	7	43·8
Children's characters	Children's character from movies, books, television, Internet	4	25·0
App	Links to smartphone apps or other apps present on Facebook	3	18·8
Media content that exposes the user	Fans can interact with the page, using photos or videos and share it on their timeline	3	18·8
Social responsibility and philanthropy	Philanthropy and sustainable promotion	3	18·8
Athletes	Sports players	2	12·5
Games	Interactive games created by the brand	1	6·3

Other studies that analysed marketing content in digital media indicated similar results. In the USA, websites directed at children used brand elements, links to other pages, promotions and special prices, gifts and rewards[18]. Another study demonstrated that soda is the main product promoted online on a website directed at children in the USA[19].

The problem of promoting UPP is related to the fact that their consumption is associated with dyslipidaemia in children, metabolic syndrome in adolescents and obesity at all ages[20–23]. In addition, their means of production, distribution, marketing and consumption lead to damage to culture, social life and the environment[7].

Although eating habits are understood as individual preferences that coincide with the principle of freedom, they are influenced strongly by food advertising[24], denoting the relevance of assessing new forms of advertising food products on social media and of controlling its content.

Marketing on social media is not what tends to be used on television networks, which also allow multidimensional actions involving social media and online apps[14]. With the advent of mobile devices, Facebook can be accessed anytime v. television commercials, which are limited to breaks in programming, while marketing on Facebook is available continuously[14,16].

Table 3 Monthly coverage of ultra-processed food product marketing on Facebook in Brazil, 23 September–23 October 2015

Brand	Posts	Posts/d	Likes	Shares	Commentaries	Likes/post	Shares/post	Commentaries/post
Coca-Cola®	32	1·07	1 270 872	15 704	10 497	39 714·75	490·75	328·03
Guaraná®	12	0·40	27 824	3310	551	2318·67	275·83	45·92
Garoto	55	1·83	148 110	4984	12 585	2692·91	90·62	228·82
Cacau Show®	19	0·63	183 552	11 382	6549	9660·63	599·05	344·68
Lacta official®	5	0·17	56 552	632	534	11 310·40	126·40	106·80
McDonald's®	18	0·60	765 665	19 751	42 647	42 536·94	1097·28	2369·28
Bis®	5	0·17	143 127	1297	1076	28 625·40	259·40	215·20
Halls®	4	0·13	441 619	10 635	11 031	110 404·75	2658·75	2757·75
Subway®	19	0·63	679 792	6287	10 226	35 778·53	330·89	538·21
Trident	11	0·37	629 304	4975	2918	57 209·45	452·27	265·27
Guaraná Kuat oh yeah®	14	0·47	105 179	2798	4061	7512·79	199·86	290·07
Burger King®	15	0·50	1 032 651	151 259	119 372	68 843·40	10 083·93	7958·13
Kibon®	2	0·07	571 691	13 306	9955	285 845·50	6653·00	4977·50
Mundo Fini®	31	1·03	113 712	8364	4061	3668·13	269·81	131·00
Outback®	43	1·43	268 180	65 132	22 805	6236·74	1514·70	530·35
Mentos®	14	0·47	155 393	1180	2758	11 099·50	84·29	197·00

Social media allows the user to interact with the brand page content, which can be visible to all other users of the app and enhance the extent of marketing savvy. Thus, social media facilitates word-of-mouth marketing to go viral and spread a message to an exponential number of people[25].

In Brazil, in 2015, 42 % of the population accessed the Internet and 76 % of them used it daily for approximately 4 h. The main reasons given were to obtain general information (67 %), to have fun and be entertained (67 %), to enjoy one's free time (38 %), and to study and learn (24 %). Among social media and chat programs, Facebook (83 %) and WhatsApp (58 %) were the ones most used by the population[26]. Although almost all Brazilians have access to television (97 %) with 73 % of them watching it daily, the number of hours spent viewing television (4 h 30 min per d) is close to that mentioned for Internet use[26].

Regulating UPP marketing in Brazil faces divergent interests between governing sectors and the food industry. On the one hand, there are strategies proposed by the National Health Surveillance Agency (Agência Nacional de Vigilância Sanitária; ANVISA) that aim to promote the protection of human rights to adequate and healthy foods by examining the purpose and content of food marketing. On the other hand, there is a regulated sector that claims the control of food publicity interferes with economic freedom and that such regulations would constitute censorship of commercial expression[27].

In accordance with our results, discussions about UPP marketing regulation in Brazil must be extended to all social media. One potential way of regulating food marketing in the media is defining which techniques can be used for each type of product and for which sector of the population. For example, in accordance with the study of the impact of each marketing technique on children's food consumption, legislation could better define abusing the interaction with children on specific pages and the use of photos or videos. Social control can help achieve successful regulation, with the concomitant proposition of a complaint channel inside Facebook.

Our study presented the size and profile of UPP marketing on Facebook in Brazil. Despite its relevance, it did not include paid publicity; in this vein, we expect a greater extent of food publicity on Facebook than what has been described herein. In addition, we did not study the profile of fans of brand pages. Finally, the study was descriptive, thus disabling hypothesis formulation. Further studies in this field will contribute to an understanding of the UPP food marketing on Facebook and its impact on food consumption and health profiles of Facebook users.

Acknowledgements

References

1. Levy RB, Claro RM, Bandoni DH *et al.* (2012) Availability of added sugars in Brazil: distribution, food sources and time trends. *Rev Bras Epidemiol* **15**, 3–12.
2. Levy RB, Claro RM & Monteiro CA (2010) Sugar and overall macronutrient profile in the Brazilian Family diet (2002–2003). *Cad Saude Publica* **26**, 472–480.
3. Louzada MLC, Martins APB, Canella DS *et al.* (2015) Ultra-processed foods and the nutritional dietary profile in Brazil. *Rev Saude Publica* **49**, 38.
4. Bielemann RM, Motta JVS, Minten GC *et al.* (2015) Consumption of ultra-processed foods and their impact on the diet of young adults. *Rev Saude Publica* **49**, 28.

5. Martins APB, Levy RB, Claro RM et al. (2013) Increased contribution of ultra-processed food products in the Brazilian diet (1987–2009). Rev Saude Publica 47, 656–665.

6. Malta DC, Andrade SC, Claro RM et al. (2014) Trends in prevalence of overweight and obesity in 26 Brazilian state capitals and the Federal District from 2006 to 2012. Rev Bras Epidemiol 17, 267–276.

7. Monteiro CA, Cannon G, Levy RB et al. (2016) NOVA. The star shines bright. World Nutr 7, 28–38.

8. Akçil Ok M, Ercan A & Kaya FS (2016) A content analysis of food advertising on Turkish television. Health Promot Int 31, 801–808.

9. Kent MP, Martin CL & Kent EA (2014) Changes in the volume, power and nutritional quality of foods marketed to children on television in Canada. Obesity (Silver Spring) 22, 2053–2060.

10. Boyland EJ, Nolan S, Kelly B et al. (2016) Advertising as a cue to consume: a systematic review and meta-analysis of the effects of acute exposure to unhealthy food and nonalcoholic beverage advertising on intake in children and adults. Am J Clin Nutr 103, 519–533.

11. Boyland EJ & Whalen R (2015) Food advertising to children and its effects on diet: review of recent prevalence and impact data. Pediatr Diabetes 16, 331–337.

12. Sadeghirad B, Duhaney T, Motaghipisheh S et al. (2016) Influence of unhealthy food and beverage marketing on children's dietary intake and preference: a systematic review and meta-analysis of randomized trials. Obes Rev 17, 945–959.

13. Gwozdz W & Reisch LA (2011) Instruments for analyzing the influence of advertising on children's food choices. Int J Obes (Lond) 35, 37–43.

14. Montgomery KC, Chester J, Grier SA et al. (2012) The new threat of digital marketing. Pediatr Clin North Am 59, 659–675.

15. Boelsen-Robinson T, Backholer K & Peeters A (2016) Digital marketing of unhealthy foods to Australian children and adolescents. Health Promot Int 31, 523–533.

16. Freeman B, Kelly B, Baur L et al. (2014) Digital junk: food and beverage marketing on Facebook. Am J Public Health 104, 56–64.

17. Facebook (2015) Facebook Para Empresas. Disponível. http://www.Facebook.com/business/news/BR-45-da-populacao-brasileira-acessa-o-Facebook-pelo-menos-uma-vez-ao-mes (accessed November 2016).

18. Henry AE & Story M (2009) Food and beverage brands that market to children and adolescents on the internet: a content analysis of branded web sites. J Nutr Educ Behav 41, 353–359.

19. Ustjanauskas AE, Harris JL & Schwartz MB (2013) Food and beverage advertising on children's web sites. Pediatr Obes 9, 362–372.

20. Rauber F, Campagnolo PD, Hoffman DJ et al. (2015) Consumption of ultra-processed food products and its effects on children's lipid profiles: a longitudinal study. Nutr Metab Cardiovasc Dis 25, 116–122.

21. Canella DS, Levy RB, Martins AP et al. (2014) Ultra-processed food products and obesity in Brazilian households (2008–2009). PLoS One 9, e92752.

22. Tavares LF, Fonseca SC, Garcia Rosa ML et al. (2012) Relationship between ultra-processed foods and metabolic syndrome in adolescents from a Brazilian family doctor program. Public Health Nutr 15, 82–87.

23. Ministry of Health of Brazil (2014) Dietary Guidelines for the Brazilian Population. Brasília, DF: Ministry of Health; available at http://bvsms.saude.gov.br/bvs/publicacoes/dietary_guidelines_brazilian_population.pdf

24. Vukmirovic M (2015) The effects of food advertising on food-related behaviours and perceptions in adults: a review. Food Res Int 75, 13–19.

25. Kaplan AM & Haenlein M (2011) Two hearts in three-quarter time: how to waltz the social media/viral marketing dance. Bus Horizons 54, 253–263.

26. Brasil, Presidência da República, Secretaria de Comunicação Social (2014) Pesquisa Brasileira de Mídia 2015: Hábitos de Consumo de Mídia pela População Brasileira. Brasília, DF: Secom.

27. Henriques P, Dias PC & Burlandy L (2014) Regulation of food advertising in Brazil: convergence and conflicts of interest. Cad Saude Publica 30, 1219–1228.