

Digital food environment: food and beverage advertising on streaming platforms.

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Abstract. The food environment, defined as the individual's interaction with internal and external factors, such as the food systems, represents great importance in public policies for health prevention and healthy eating promotion. Advertising is considered part of the information food environment, and digital food marketing has been identified as one of the most influential means in company advertising in recent years. The aim of this study was to highlight the main scientific evidence and provide information about the role of food and beverage advertising in the YouTube® and Twitch® streaming platform, promoting a critical-reflective analysis. A narrative literature review was conducted, which included the search and analysis of observational studies that evaluated food advertising on streaming platforms. Most of the studies focus on analyzing content on the YouTube® platform aimed at children and adolescents, where the majority of advertisements promote unhealthy foods, characterized as products with low nutritional value and high amounts of sugar, saturated fat and/or sodium. International health organizations are joining forces to contain the spread of overweight, obesity and non-communicable diseases, which numbers are worrisome for children and adolescents. To achieve the global agenda of health prevention is necessary joint action from all spheres of society, considering that the creation of regulatory measures aimed at food advertising is an urgent measure.

Keywords. Marketing, Video streaming, Persuasive Communication, Twitch®, YouTube®.

1. Introduction

Current standards of modern human life are based around concern for health, a highly complex term defined by the World Health Organization (WHO): "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" [1].

The food environment can be defined as the interaction between individuals and the surroundings factors, which permeate ecosystems, sustainability of food systems and individual choices. The existing content in digital media, food marketing and advertising is defined as part of the information food environment [2, 3].

Digital marketing uses several persuasive techniques and analytics to build narratives related to the close contact with the public, especially the most vulnerable: children and adolescents. The high exposure to this type of marketing raises discussions about privacy policies on digital platforms due to the lack of regulatory measures. Users' personal data can be easily made available to advertising companies and, through programmatic media, companies can

personalize ads individually for each user [4].

Digital marketing is currently being considered as a modifiable risk factor for poor diet and excess weight in children and adolescents. With exposure to unhealthy foods, this audience tends to consume increased amounts of calories and higher quantities of foods with low nutritional value, as they are influenced by advertisements. Unhealthy food can be characterized as products with low nutritional value and high amounts of sugar, saturated fat, trans and/or solid fat [5].

When conducting a systematic review, Kucharczuk, Oliver and Dowdell [6] found evidence that suggested unhealthy food brands tend to invest in food marketing and advertising strategies on social media aimed at teenagers. These strategies commonly involve advertisements with the presence of celebrities and famous people among the public in question, influences from other people of the same age, digital influencers or athletes.

An unbalanced diet rich in unhealthy foods can contribute to the development of Noncommunicable Diseases (NCDs), overweight or obesity, being more

worrisome for children and adolescents. In 2019, 41 million deaths worldwide (70%) were attributed to NCDs and, in Brazil, the number was 738.371 deaths. Obesity data worries authorities around the world, as the numbers have tripled in 48 years [7]. In 2016, more than 2 billion adults and 340 million children and adolescents were overweight, with 39 million children under 5 years of age having this condition worldwide [8]. In Brazil, the data from 2019 showed that over 1.8 million adolescents aged 15 to 17 years old and 95 million adults were overweight [9] with the estimative being that 3.4 million children under 5 years old had the condition [10].

From 2019 onwards, with the occurrence of the COVID-19 Pandemic, there was a restriction on the movement of people to contain serious cases and deaths from the disease, which led to the suspension of in-person activities and the stay of a large part of the population in their residences. As a consequence of this scenario, there was an expansion of the digital information and commerce environment, focusing on human contact at a distance and interaction through social media, online gaming platforms and streaming services [11].

Adolescents and children have greater access to online content and streaming platforms than to television programs. Data shows that despite the minimum age of 13 years old established by social media platforms, the majority of children under the age of 13 in the UK nations already have their own profile on these media, a situation that includes 33% of children between 5 and 7 years old, and 60% of those are between 8 and 11 years old [12].

Streaming services encompass the live or recorded transmission of audiovisual information on the internet. In 2021, the TIC Kids Brasil survey [13] showed that more than 50% of Brazilian teenagers had already watched live broadcasts on the internet, and among those aged 15 and 17, the practice was present among 70% of the participants.

According to the Ofcom study [12], YouTube® was the most used streaming platform by 89% of the public between 3 and 17 years of age in the UK nations. Considering the audience of the platforms, Brazil is the country to have the third largest global audience [[14]], with more than 120 million people connecting monthly [[15]].

The Twitch® platform is also one of the most watched streaming services, characterized by the transmission of live gaming and electronic sports competitions videos, in addition to offering creative and interactive content. This service had more than 1 trillion minutes watched worldwide in 2022 [16]. The data presented by the platform states higher popularity of Twitch® in relation to other game streaming services, such as YouTube Gaming® and Facebook Gaming® [17]. This data can influence the growing trend of broadcasts sponsored by various products and media brands, which, in turn, advertise unhealthy foods on Twitch® [18].

Faced to the growing abusive marketing of unhealthy foods present indiscriminately in the digital environment, which is frequented by children and adolescents, it is important to highlight the main scientific evidence and provide information about the role of food and beverage advertising in the YouTube® and Twitch® streaming platforms, promoting a critical-reflective analysis.

2. Methodology

This study is a narrative literature review, and the search of observational studies was conducted in two databases, MEDLINE and Scopus. The search terms and derivatives ones used were: food advertising; food marketing; food publicity; streaming; live streaming; digital platforms; YouTube® and Twitch®.

The inclusion criteria for the narrative literature review comprised studies that evaluated food advertising on streaming platforms (e.g., YouTube® and Twitch®). The exclusion criteria comprehended studies not published in an open access scientific journal, without an assessment on digital streaming platforms, and the ones that only included cigarette, alcohol or breast milk substitutes.

3. Results

Studies comprising food and beverage advertising strategies on social media and the internet are recent, dating mainly from 2014 onwards [19]. Children and adolescents represent a large part of the target audience for advertising campaigns, including those focused on food and beverages, as they are considered more vulnerable.

In an observational study developed by Martínez-Pastor et al.[20] fifteen YouTube® channels of the most popular children's influencers under the age of 14 were identified in Spain, the United Kingdom and the United States. The analysis took place between 2016 and 2019, with a sample of 460 videos. Of the selected sample, 86 videos contained advertising for 178 food and beverage products, 79% of which were classified as non-essential or unhealthy, including toys, ingredients and other products. The channels that contained the highest number of food advertisements were from Spain (61%), followed by the UK (40.5%) and the US (37.5%), with the United States having the highest percentage of unhealthy food advertising (88%).

Another observational study, conducted in Brazil in 2018 [21], analyzed the advertising strategies of 18 food brands advertised on television, Facebook®, Instagram® and YouTube® for one month. As a result, 52 advertisements on television and 194 publications on social media were observed, most of them for ultra-processed foods (88.9%). The persuasive strategies used mostly involved themes related to sports, celebrities, athletes, events and brand characters, which had a higher prevalence on YouTube® (89.7%) compared to other media.

Considering the fast-paced changes in social media platforms, there are several video tools strategies aimed at communication and advertising. With the aim of analyzing the variation in videos created by minors for YouTube® with the “challenge” content, Castelló-Martínez and Tur-Viñes[22] analyzed in a quali-quantitative study, 304 videos from Spanish channels during the year 2019. As a result, it was possible to find 162 challenge videos, in which, children were present in about 82% of them, whether or not they were accompanied by their parents. Ultra-processed products were present in more than 85% of the videos and, in 66% of the sample, children consumed these products.

Analyzing children's and general young people's access to advertising, which involves food and drinks in digital media, is a difficult action to execute. The difficulty to analyze is due to programmatic media allowing the personal adaptation of the information delivered to each internet user, which builds a unique and non-replicable experience in each access. With the purpose of documenting persuasive marketing strategies targeting this audience, a participatory study that involved 309 teenagers, who reported 1825 publications from multiple platforms through an application installed on their electronic devices, over 7 days. Most of the publications (72%) reported by teenagers involved the marketing of ultra-processed drinks, foods and sweets and were present on Instagram® (35.2%), with YouTube® advertisements being reported in 11.6% of the sample analyzed. Teenagers reported the perceived use of vibrant colors, special offers involving limited editions and rewards as indicative items of advertising aimed at teenagers [23].

In addition to advertising foods and drinks with high calorie density, high amounts of sugar, sodium and saturated fats, the industry has also invested in the digital marketing of energy drinks. The targeted audience for these drinks are young people and this beverage advertising is present on platforms such as Facebook®, YouTube®, Twitter@[24] and Twitch®. Energy drinks were the products with the highest number of advertisements observed on this streaming platform, followed by delivery services, fast food and snacks [25].

Twitch users tend to watch various advertisements during their use of the platform, and that marketing is chosen and monetized by the platform's streamers and advertisers. Furthermore, there is the possibility of paying subscriptions to the streamer's channel, which provides some benefits to the viewer. The ads on Twitch® are considered to be a form of support for the streamer, and users don't tend to bother with them, while YouTube® ads are considered excessive and tiring [26].

4. Discussion

According to the data collected, it is possible to identify the presence of several products and marketing tools aimed at promoting unhealthy foods

and drinks on streaming platforms. The most vulnerable public and, also, the one of greatest interest to the food industry are children and adolescents.

The lack of regulatory measures aimed at the digital environment and the prevalence of advertising of unhealthy foods and beverages on streaming platforms represent dangerous situations for public health, especially for children and adolescents. Global data point to the growing number of overweight and obesity, especially among children[8].

International, regional and national protocols attempt to contain the increase in this condition among the population, through strategies to protect and promote adequate and healthy eating. In 2018, WHO published the CLICK monitoring framework, for monitoring and restricting digital marketing of unhealthy products to children and adolescents [27]. In Brazil, the Dietary Guidelines for the Brazilian population [28] advises that the majority of Brazilians' diets should consist of in natura and minimally processed foods, and that processed and ultra-processed products should be avoided. The Strategic Action Plan for the Coping with Chronic Illnesses and Disorders Not Transmissible In Brazil (The Dant Plan) [29] which establishes strategies to combat non-communicable diseases, highlight the importance of strengthening the regulation of food advertising, especially that aimed at children.

It is important to highlight that social media and streaming platforms go against the recommendations of international health organizations, and strengthen the presence of advertisements and advertising campaigns in their activities, as they present ways of monetization and profit for content creators. On its official website, the Twitch® platform presents the following slogan, aimed at advertisers: “Where brands and communities intersect”, added to the statement that streaming viewers see advertising within Twitch® as a positive point [16] which demonstrates the possibility and approval of commercial content by users. The allowed presence of unhealthy foods and beverages advertising on digital platforms suggests that there is lack of commitment to social responsibility by food industry and digital platforms.

5. Conclusion

The aim of this study was to provide information about the role of food and beverage advertising on the YouTube® and Twitch® streaming platforms. The studies, for the most part, focused on the YouTube® platform and the children's audience. Considering that this research was a narrative literature review, future studies can explore other streaming platforms, youth and adult audiences, who also are influenced by abusive food advertising, in addition to developing studies with participative approaches, in order to investigate how

advertisements impact the individuals who access them.

Food and beverage advertising on social media is a topic of interest when it comes to prevention and health promotion strategies. International health organizations, such as the World Health Organization (WHO), have endorsed the importance of regulation of digital advertising of food and beverages as one of the prevention strategies to contain overweight, obesity, and Noncommunicable Diseases. To fulfill this global agenda, joint action by governments, researchers, academics, creators of products and digital content, food industries and society is necessary to develop and monitor public policies and other strategies that guarantee a safe and healthy food environment for the population.

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