



Original article

Presence and strategic use of the Mediterranean Diet in food marketing: Analysis and association of nutritional values and advertising claims from 2011 to 2020

Mònika Jiménez-Morales^a, Mireia Montaña Blasco^{b,*}

^a Universitat Pompeu Fabra, Roc Boronat, 138, 08018 Barcelona, Spain

^b Universitat Oberta de Catalunya, Av. Tibidabo, 39-43, 08035 Barcelona, Spain

ARTICLE INFO

Keywords:

Mediterranean diet

Food advertising

Marketing

Discourse

Claims

Nutritional values

ABSTRACT

The Mediterranean Diet (MD) has been recognized as a dietary pattern that has multiple benefits in health and many other sustainable development goals proposed by the United Nations. It was also recognized by UNESCO as the Intangible Cultural Heritage of Humanity. Aware of those benefits, advertising uses the MD as a claim to reach consumers. This paper aims to associate the nutritional values of those food and drink products advertised between 2011 and 2020 and the use of the “Mediterranean” concept as part of its marketing discursive strategy. To this end, a quantitative and qualitative methodology that included a content analysis of these advertisements was used. To determine the nutritional quality of those food products, the Nutri-Score system was utilized. The main findings concluded that most of the food products and drinks advertised under the concept “Mediterranean” are not included in the nutritional pyramid of the MD. Although some of the MD typical foods have reached a low nutritional food value due to their alteration with ultra-processed ingredients, it has been shown that the product categories, which falsely claim DM, have even a lower nutritional value. The study also pointed out the need for stricter regulation in food and beverage marketing since misleading language can damage consumers’ health.

1. Introduction

The Mediterranean Diet (MD) is a plant-based dietary pattern, characterized by the frequent intake of a high amount of vegetables, fruits, cereals, legumes, and nuts. It also includes regular consumption of olive oil and moderate consumption of fish and shellfish, white meat, eggs, and dairy products. On the contrary, consumption of red meat, processed meats, and foods rich in sugars and fats should be small in both quantity and frequency [1]. The MD is the result of a complex and multi-millennial interaction between the natural food resources available in the Mediterranean environment and the human element inhabiting the Mediterranean basin throughout history [2]. Since November 2010, the MD has been recognized by UNESCO as the Intangible Cultural Heritage of Humanity.

The MD has been recognized as a healthy dietary pattern, capable of preventing cardiovascular diseases (CVD) [3–5] and that, on the contrary, ultra-processed foods may contribute to the higher prevalence of these diseases [6].

It is also related to a healthy lifestyle. Some authors [7,8] refer to the

concept of the “Mediterranean way of life” to describe lifestyles that comprise elements of frugality and moderation on food consumption, seasonal and traditional products, personal involvement in culinary preparation, social activities, regular physical exercise, hydration and rest. All these elements converge in the idea of an eco-friendly, bio-diverse and sustainable diet, based on the consumption of local foods [9].

Advertising and marketing have not been indifferent to the benefits of the MD. In recent years, it is common to find many food products that are advertised to the consumer as part of the MD Pyramid. Despite this, these products have very little to do with the MD [10], and the impact of their regular consumption on health is far from being positive.

Although there is some research focused on advertising discourse and health [11–15], in general, there are not too many studies around the mention of the concept “Mediterranean Diet” as part of advertising claims, and the few that exist focus on the packaging of the products and the idea of authenticity and differentiation [16,17]. There are no previous studies that associate advertising discourse and the nutritional values of the food product advertised with the claim “Mediterranean

* Corresponding author.

E-mail addresses: monika.jimenez@upf.edu (M. Jiménez-Morales), mmontanabl@uoc.edu (M. Montaña Blasco).

<https://doi.org/10.1016/j.nfs.2021.04.003>

Received 12 April 2021; Received in revised form 27 April 2021; Accepted 27 April 2021

Available online 8 May 2021

2352-3646/© 2021 The Authors. Published by Elsevier GmbH on behalf of Society of Nutrition and Food Science e.V. This is an open access article under the CC

BY license (<http://creativecommons.org/licenses/by/4.0/>).

Diet” or with concepts that refer to it.

It should be noted that scientific literature has revealed in recent years the over-presence of advertisements for ultra-processed foods to the detriment of those of natural food. Regardless of the media and the format, the almost non-existence of natural products in advertising is a fact confirmed in different studies [10,18–22]. In this regard, several studies indicate that in recent years the MD has been losing adhesion between children and young people. Over the last decade, this group has progressively replaced the foods that characterize the MD with ultra-processed foods [23,24].

The purpose of this study is to analyze the strategic use of the MD and the different concepts associated with lifestyles derived from it on Spanish advertising between 2011 and 2020. Based on the analysis of these claims in association with the nutritional values of the advertised food products, the research aims to highlight the discursive strategies that use the concept of “Mediterranean Diet” to promote the purchase of products little related to it and that are mostly unhealthy on a balanced diet.

2. Materials and methods

2.1. Study design

This cross-sectional study was designed based on a mixed-methods procedure, and integrated quantitative and qualitative methodology.

2.2. Procedure: Data collection

The research used a quantitative methodology that allowed it to procure a sample integrated by all Spanish advertising from 2011 to 2020. The sample was compiled through the data collected by Infoadex, the company that monitors all the advertising activity in Spain.

To configure what is the largest database in the sector, Infoadex uses quantitative and qualitative criteria: on one hand, it considers aspects such as insertions (number of ads per advertiser) and occupation (size or duration of the ads). On the other hand, the database takes into consideration qualitative data such as the creatives (different versions or executions of the same ad).

2.3. Inclusion criteria

All types of media that Infoadex monitored during 2011 and 2020 were considered for this study: newspapers, magazines, television, radio, outdoors, and the Internet. On this basis, a qualitative analysis was carried to determine which of those ads that used the semantic field “Mediterranean” in their persuasive discourse were for food or drinks. The result showed a total of 1219 food advertisements that corresponded to 103 products. Also based on Infoadex’s classification, results showed there were a total of 21 food categories that included those that used the studied semantic field. Regarding drinks, a total of 541 drink advertisements were found from 109 products.

2.4. Data extraction

The researchers extracted data from each ad using a purpose-designed content analysis data extraction form, based on food and drink category, Nutri-score classification, and presence of celebrities on the analyzed advertisements. Both the quantitative and qualitative analyses of Nutri-Score data have been developed by the authors, using the list of ads registered in Infoadex as a basis. To be in line with current nutritional recommendations, the Nutri-Score system has partly adapted the method for calculating the labels in some products based on oil, especially olive oil.

3. Results

3.1. Product category and nutritional analysis

The results indicated that the 1219 analyzed advertisements between 2011 and 2020 corresponded to a total of 103 products. From these products, “fried tomato and sauces” (18), “prepared soups and ready meals” (17), “fruits, beans, and vegetables” (12), and “charcuterie” (8) were the food categories that most used the “Mediterranean” semantic field in their advertising discourse.

“Milk, cheese, ice-cream and yogurt” (7), “olive oil” and “potato chips” (6), and “baby food” (5) followed the order of that classification. The intermediate positions corresponded to foods such as pizza and biscuits (3), and chocolate (2), while the lower positions regarding the advertising presence corresponded to products such as bread, cereals, jam, diet products, or rice, among others (Table 1).

Concerning years, the analysis showed that the products that occupied the first positions maintained the proportion of advertisements concerning the biannual periods established for the study, except for the “soups and ready meals” category, which significantly increases the number of advertisements in the period 2019–2020, going from a maximum of 4 ads (21.05%) during 2013–2014 to 6 in the last year. The same happened with the “milk, cheese, ice-cream, and yogurt” category, which increased the advertising presence during the 2019–2020 period (12.12%).

The results collected in Table 1 also suggested that the advertising presence of less processed products such as cereals, nuts, bread, evolve towards a decreasing trend.

Regarding the Nutri-score value for the different food categories (Table 2), A label products, the highest in nutritional value concerning this classification system, were categorized especially in “Fruits, beans, and vegetables” (64.29%) and “Fish and shellfish” (14.29%). B label products, corresponded mostly to “Soups and ready meals” (45.00%) and “Baby food” (25.00%). C label products correlated to “Fried tomato and sauces” (28.00%), “Soups and ready meals” (28.00%), and “Olive oil” (24.00%). “Potatoe chips” (20%), “Charcuterie” (16.67%), and “Milk, cheese, ice-cream, and yogurt” (13.33%) were the main categories for the D label. E-label products corresponded mainly to “Fried tomato and sauces” (50%) and “Chocolate” (14.29%).

Concerning their Nutri-score value, the results revealed that, during the analyzed period, only 13.59% corresponded to products with a high nutritional value (A Food Nutritional Label). A total of 19.42% of the foods had a B label (medium-high value) and 25.27% had a medium nutritional value (C), while the nutritional value of 29.13% of the advertised foods was low (D) and 13.59% was very low (E) (Table 3).

Regarding years, 2014 was the year with the highest percentage of A and B products (71.43%). This proportion decreased the following years, reaching 40% in 2015, 33.33% in 2016, 20% in 2017, 25% in 2018, 23.08% in 2019, and 30% in 2020. Although the products of the D and E categories have not shown a clear trend over the years, their total percentage has always been between 40 and 50%, but in 2014 which was only 14.29%.

In the case of the analyzed drinks, it stands out that practically 89% were alcoholic beverages. Those that have used the semantic field of “Mediterranean” were especially wine (47.71%), beer (16.57%), and gin (12.84%) (Table 4). Only 11% of the advertised drinks were non-alcoholic, specifically soft drinks (4.59%), sugared juices (3.67%), and water (2.75%).

Regarding alcoholic beverages, it highlights that the number of advertisers using “Mediterranean” as an advertising claim has grown in recent years, reaching the peak in 2019 with 22 products (Table 5).

3.2. Presence of celebrities as a part of the advertising persuasive strategy

The presence of celebrities does not stand out as an advertising claim for the analyzed products. Only 5 food products (Table 6) and 12 drinks

Table 1
Classification of the advertised MD products during 2011–2020 by food category and period.

Food Category	Total No. of advertisers ¹	A Food B Food C Food D Food E Food				
		Nutr. Label ²	Nutr. Label ³	Nutr. Label ⁴	Nutr. Label ⁵	Nutr. Label ⁶
Fried tomato and sauces	18 (17.48)	0 (0.00)	1 (5.00)	7 (28.00)	3 (10.00)	7 (50.00)
Soups and ready meals	17 (16.50)	1 (7.14)	9 (45.00)	7 (28.00)	0 (0.00)	0 (0.00)
Fruits, beans, and vegetables	12 (11.65)	9 (64.29)	2 (10.00)	1 (4.00)	0 (0.00)	0 (0.00)
Charcuterie	8 (7.77)	0 (0.00)	0 (0.00)	0 (0.00)	5 (16.67)	3 (21.43)
Milk, cheese, ice-cream, and yogurt	7 (6.80)	1 (7.14)	2 (10.00)	0 (0.00)	4 (13.33)	0 (0.00)
Olive oil	6 (5.83)	0 (0.00)	0 (5.26)	6 (24.00)	0 (0.00)	0 (0.00)
Potato chips	6 (5.83)	0 (0.00)	0 (0.00)	0 (0.00)	6 (20.00)	0 (0.00)
Baby food	5 (4.85)	0 (0.00)	5 (25.00)	0 (0.00)	0 (0.00)	0 (0.00)
Olives	4 (3.88)	0 (0.00)	0 (0.00)	1 (4.00)	3 (10.00)	0 (0.00)
Fish and shellfish	4 (3.88)	2 (14.29)	0 (0.00)	2 (8.00)	0 (0.00)	0 (0.00)
Pizza	3 (2.91)	0 (0.00)	0 (0.00)	0 (0.00)	3 (10.00)	0 (0.00)
Biscuits	3 (2.91)	0 (0.00)	0 (0.00)	0 (0.00)	2 (6.67)	1 (7.14)
Chocolate	2 (1.94)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	2 (14.29)
Cereals	1 (0.97)	0 (0.00)	0 (0.00)	1 (4.00)	0 (0.00)	0 (0.00)
Jam	1 (0.97)	0 (0.00)	0 (0.00)	1 (4.00)	0 (0.00)	0 (0.00)
Nuts	1 (0.97)	1 (7.14)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Bread	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Diet products	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Salting	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Nougat	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (7.14)
Rice	1 (0.97)	0 (0.00)	1 (5.00)	0 (0.00)	0 (0.00)	0 (0.00)

¹ Total $n = 103$.

² Total $n = 16$.

³ Total $n = 19$.

⁴ Total $n = 17$.

⁵ Total $n = 18$.

⁶ Total $n = 33$.

Table 2
Nutri-score classification of the advertised products during 2011–2020 by food category.

Food Category	Total No. of advertisers ¹	A Food B Food C Food D Food E Food				
		Nutr. Label ²	Nutr. Label ³	Nutr. Label ⁴	Nutr. Label ⁵	Nutr. Label ⁶
Fried tomato and sauces	18 (17.48)	0 (0.00)	1 (5.00)	7 (28.00)	3 (10.00)	7 (50.00)
Soups and ready meals	17 (16.50)	1 (7.14)	9 (45.00)	7 (28.00)	0 (0.00)	0 (0.00)
Fruits, beans, and vegetables	12 (11.65)	9 (64.29)	2 (10.00)	1 (4.00)	0 (0.00)	0 (0.00)
Charcuterie	8 (7.77)	0 (0.00)	0 (0.00)	0 (0.00)	5 (16.67)	3 (21.43)
Milk, cheese, ice-cream, and yogurt	7 (6.80)	1 (7.14)	2 (10.00)	0 (0.00)	4 (13.33)	0 (0.00)
Olive oil	6 (5.83)	0 (0.00)	0 (5.26)	6 (24.00)	0 (0.00)	0 (0.00)
Potato chips	6 (5.83)	0 (0.00)	0 (0.00)	0 (0.00)	6 (20.00)	0 (0.00)
Baby food	5 (4.85)	0 (0.00)	5 (25.00)	0 (0.00)	0 (0.00)	0 (0.00)
Olives	4 (3.88)	0 (0.00)	0 (0.00)	1 (4.00)	3 (10.00)	0 (0.00)
Fish and shellfish	4 (3.88)	2 (14.29)	0 (0.00)	2 (8.00)	0 (0.00)	0 (0.00)
Pizza	3 (2.91)	0 (0.00)	0 (0.00)	0 (0.00)	3 (10.00)	0 (0.00)
Biscuits	3 (2.91)	0 (0.00)	0 (0.00)	0 (0.00)	2 (6.67)	1 (7.14)
Chocolate	2 (1.94)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	2 (14.29)
Cereals	1 (0.97)	0 (0.00)	0 (0.00)	1 (4.00)	0 (0.00)	0 (0.00)
Jam	1 (0.97)	0 (0.00)	0 (0.00)	1 (4.00)	0 (0.00)	0 (0.00)
Nuts	1 (0.97)	1 (7.14)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Bread	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Diet products	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Salting	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	1 (3.33)	0 (0.00)
Nougat	1 (0.97)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	1 (7.14)
Rice	1 (0.97)	0 (0.00)	1 (5.00)	0 (0.00)	0 (0.00)	0 (0.00)

¹ Total $n = 103$.

² Total $n = 14$.

³ Total $n = 20$.

⁴ Total $n = 25$.

⁵ Total $n = 30$.

⁶ Total $n = 14$.

(Table 7) have used them. Regarding the nutritional food categories, only products from the C and E nutritional labels have used them. The celebrities that appeared in these advertisements were 3 TV hosts and 2 actors. Taking into account the drinks products, 12 of the advertised drinks used celebrities. All of them, 11 actors and actresses, and one TV host were used for promoting alcoholic drinks (beer).

4. Discussion

The MD is a dietary pattern that has olive oil as the main source of added fat. MD is also rich in vegetables, fruits, cereals, legumes, seeds, and tree nuts. It advocates a moderate consumption of poultry, seafood, eggs, and dairy products. This nutritional pattern recommends a small consumption, both in quantity and frequency, of red meat, processed meats, and foods rich in sugars and fats. Alcohol consumption should be

Table 3

Nutri-score classification of the MD advertised products by the year 2011–2020.

Year	A Food Nutritional Label	B Food Nutritional Label	C Food Nutritional Label	D Food Nutritional Label	E Food Nutritional Label
2011 ¹	0 (0.0)	2 (33.33)	1 (16.67)	3 (50.00)	0 (0.0)
2012 ²	2 (20.00)	1 (10.00)	2 (20.00)	4 (40.00)	1 (10.00)
2013 ³	0 (0.0)	5 (41.67)	2 (16.67)	3 (25.00)	2 (16.67)
2014 ⁴	2 (28.57)	3 (42.86)	1 (14.29)	1 (14.29)	0 (0.0)
2015 ⁵	1 (20.00)	1 (20.00)	1 (20.00)	1 (20.00)	1 (20.00)
2016 ⁶	2 (16.67)	2 (16.67)	3 (25.00)	3 (25.00)	2 (16.67)
2017 ⁷	1 (10.00)	1 (10.00)	3 (30.00)	3 (30.00)	2 (20.00)
2018 ⁸	1 (12.50)	1 (12.50)	2 (25.00)	4 (50.00)	0 (0.0)
2019 ⁹	3 (23.08)	0 (0.0)	4 (30.77)	3 (23.08)	3 (23.08)
2020 ¹⁰	2(10.00)	4 (20.00)	6 (30.00)	5 (28.00)	3 (15.00)
Total period	14 (13.59)	20 (19.42)	25 (25.27)	30 (29.13)	14 (13.59)

¹ Total *n* = 6.² Total *n* = 10.³ Total *n* = 12.⁴ Total *n* = 7.⁵ Total *n* = 5.⁶ Total *n* = 12.⁷ Total *n* = 10.⁸ Total *n* = 8.⁹ Total *n* = 13.¹⁰ Total *n* = 20.**Table 4**

Classification of the MD advertised products during 2011–2020 by drink category.

Drink Category	Number of products ¹
Alcoholic drinks	97 (88.99)
Wine	52 (47.71)
Beer	18 (16.51)
Gin	14 (12.84)
Cava (sparkling wine)	7 (6.42)
Other liquors	3 (2.75)
Rum	2 (1.83)
Vermouth	1 (0.92)
Non-alcoholic drinks	12 (11.01)
Soft drinks	5 (4.59)
Sugared juices	4 (3.67)
Water	3 (2.75)

¹ Total *n* = 109.**Table 5**

Classification of the MD advertised products by type and by the year 2011–2020.

Year	Total drinks	Alcoholic drinks	Non-alcoholic drinks
2011	8 (7.34)	6 (75.00)	2 (25.00)
2012	8 (7.34)	6 (75.00)	2 (25.00)
2013	5 (4.59)	4 (80.00)	1 (20.00)
2014	6 (5.50)	6 (100.00)	0 (0.0)
2015	6 (5.50)	6 (100.00)	0 (0.0)
2016	9 (8.26)	8 (88.89)	1 (11.11)
2017	18 (16.51)	16 (88.89)	2 (11.11)
2018	11 (10.09)	9 (81.82)	2 (18.18)
2019	22 (20.18)	22 (100.00)	0 (0.0)
2020	16 (14.68)	14 (87.50)	2 (12.50)

Table 6

Presence of popular characters in the analyzed food products by Nutri-score category.

Presence and type of popular characters	A Food Nutritional Label	B Food Nutritional Label	C Food Nutritional Label	D Food Nutritional Label	E Food Nutritional Label
Non-presence	14 (100.00)	20 (100.00)	23 (92.00)	30 (100.00)	11 (78.57)
Presence	0 (0.0)	0 (0.0)	2 (8.00)	0 (0.0)	3 (21.43)
TV host	0 (0.0)	0 (0.0)	1 (4.00)	0 (0.0)	2 (14.29)
Actor	0 (0.0)	0 (0.0)	1 (4.00)	0 (0.0)	1 (7.14)

in moderation, and preferably wine during meals.

Within the scientific community, there is a consensus on what constitutes the traditional MD, but issues have been raised about the need to update the present recommendations considering the new lifestyle, dietary, sociocultural, environmental, and health challenges the current generations of different countries and sectors of the population are facing [25]. Recent studies have highlighted multiple concerns about the sustainability and the environmental impact of the MD pattern [26–28]; concerns that have led to a reformulation of the traditional nutritional pyramid linked to the MD. The new MD pyramid situates plant-origin food at the base of the graphic. At the upper levels, this representation locates all those foods that should be eaten in moderate amounts such as meat or fish. A daily intake of 1.5–2 l of water (equivalent to six to eight glasses) should be guaranteed. Furthermore, moderate consumption of wine during meals is present in this update. Following the pyramid, sugar and fats should be eaten only on special occasions. The pyramid establishes dietary daily, weekly and occasional guidelines to follow a healthy and balanced diet [25].

A total of 103 products of the 1219 advertisements analyzed, corresponding to the period 2011–2020, used the semantic field “Mediterranean” on their claims. In this sense, it was observed that most of the time that the “Mediterranean” semantic field is used, it adopts a rhetorical form. In this case, the analyzed ads use the rhetorical figure of synecdoche; that is, the whole is mentioned for the part.

Table 7

Presence of popular characters in the analyzed drinks products by type.

Presence and type of popular characters	Alcoholic drinks	Non-alcoholic drinks
Non-presence	85 (87.63)	12 (100.00)
Presence	12 (12.37)	0 (0.0)
TV host	1 (1.03)	0 (0.0)
Actor	11 (11.34)	0 (0.0)

“Mediterranean” is used to include everything related, both with the word and with everything that refers to its imaginary. The advertising discursive strategy refers to the concept “Mediterranean” in food products with the intention that the consumer understands that the product is part of the MD. The synecdochical use of the semantic field “Mediterranean”, in this case, could be considered a misleading claim since only a small proportion of the 103 advertised products are part of the MD nutritional pyramid.

Regarding the analyzed product categories that should be present on the three main meals, according to the MD pyramid [7], cereals, bread, rice, and vegetables and fruits have been published by 15 advertisers. Their nutritional value is mostly high or medium-high (9 A and 3 B labeled products). However, there are also 2C and 1 D labeled products.

Dairy products are also recommended for a daily intake, preferably in the form of low fat. The advertised products of this category, however, were mostly fatty (1 A labeled product, 2 B labeled products, and 4 D labeled products). Olive oil, olives, and nuts are in the center of the MD pyramid. In this case, most of the products had medium or low nutritional value. Finally, fish and any kind of meat are recommended for a weekly intake or less. For this category, most of the analyzed products were D and E labeled. The rest of the products occupy the upper ranks of the pyramid, which is crowned by sugary products and industrial bakery products, also advertised under the “Mediterranean” concept.

Although some of the MD typical foods have reached a low nutritional food value due to their alteration with ultra-processed ingredients, it has been shown that the product categories, which falsely claim DM, have even a lower nutritional value.

The time spent carrying out culinary activities is one of the outstanding cultural and lifestyle features linked to MD. In this sense, various studies show that the little time that nowadays is devoted to cooking is one of the factors that hinder healthy dietary patterns [25,29,30].

Regarding the results, we can see that most of the products that use the semantic field “Mediterranean” as a claim on their ads correspond to processed and ultra-processed foods; all proposals, in short, completely away from the idea of devoting time to cook, something that is part of the lifestyle proposed by the MD. Nonetheless, sauces, ready-to-eat foods, chips, or pizza, among others, are advertised under a concept linked to the essence of the MD.

The association between the products advertised under the “Mediterranean” semantic field and their Nutri-score value, revealed that only 13.59% of these products had a high nutritional value (A Food Nutritional value). Of the same percentage of products, 13.59% had a very low nutritional value (E). A 29.13% corresponded to a low nutritional value (D), while 25.27% had a medium nutritional value (C), and 19.42% had a B medium-high nutritional value (B).

Far from being reduced over the years, the amount of foods with low nutritional value that is advertised under the premise of “Mediterranean” has maintained an upward trend. In this sense, 2014 was the year with the highest percentage of A and B products (71.43%), decreasing the following years. In 2015 it reached 40%, 33.33% in 2016, 20% in 2017, 25% in 2018, 23.08% in 2019, and 30% in 2020.

It should be noted that even though the products of the D and E categories have not shown a clear trend over the years, their total percentage has always been between 40 and 50%, a considerably higher percentage than in 2014, which was only 14.29%.

Regarding beverages, the MD indicates water as the healthiest non-alcoholic drink. Wine in moderate consumption and always coinciding with meals is the only alcoholic drink included in the MD. Previous research defines “moderate consumption” as one to two glasses of wine for men and one glass a day for women [31].

The study showed that 89% of the drinks that used the “Mediterranean” semantic field as a part of its discursive strategy were alcoholic beverages. A 47.71% corresponded to wine and a 16.57% to beer. Other alcoholic drinks were gin (12.84%), cava (sparkling wine) (6.42%), rum (1.83%), and other liquors (2.75%). Remarkably, the number of ads

using “Mediterranean” as a claim in alcoholic beverages has grown in recent years, reaching the peak in 2019, with 22 products. As mentioned, only wine would be part of the MD [31]. Despite this, all the alcoholic beverages analyzed ads apply the “Mediterranean” semantic field as the basis of their discursive strategy.

In the case of non-alcoholic beverages, water, the drink that is considered essential in the MD nutritional pyramid, is the least advertised. Like the rest of the products analyzed, water uses the “Mediterranean” semantic field in its discourse as part of its marketing strategy; however, its advertising presence is very low (2,75%) concerning the rest of non-alcoholic drinks. Similar to that of foods corresponding to a high nutritional value, the presence of water -also categorized as A Food Nutritional Label- in the ads for the period corresponding to 2011–2020 is practically non-existent.

On the contrary, those products discouraged by the MD due to their high proportion of sugar, are advertised under the concept “Mediterranean”, in greater quantity. This is the case with soft drinks (4.59%), and sugared juices (3.67%, products that should be consumed in small amounts and left for special occasions [7].

In the context of this analysis of the presence and strategic use of the MD in food marketing, the research highlighted the presence of celebrities and popular characters in some of the campaigns. The appearance of these celebrities, pointing out in their discourse the “Mediterranean” nature of the advertised product, contributes to reinforcing the advertising message around the supposed healthy attributes of these foods.

The study pointed out that among the analyzed ads, 5 food products, and 12 drinks used the presence of celebrities and popular characters as a claim. Regarding the nutritional food categories, only food products from the C and E nutritional labels have used them. The celebrities that appeared in these advertisements were mostly TV hosts and actors.

Considering beverages, 12 of the advertised drinks used celebrities. All of them, 11 actors and actresses, and one TV host were used for promoting alcoholic drinks.

This study concluded that between 2011 and 2020, a total of 1219 food advertisements used the semantic field “Mediterranean” as a part of its discursive strategy. These ads corresponded to:

103 food products. A total of 541 drink advertisements from 109 products used the concept “Mediterranean” as a part of their claim. The research indicated that the presence of MD foods and beverages that use the “Mediterranean” semantic field as part of their advertising strategy is minimal compared to other products whose consumption is not even included in the nutritional pyramid that summarizes the nutritional pattern of that diet.

This data was significant in both food products and beverages. Although some studies delve into certain bad practices that marketing uses to hide certain nuances of the product [32–35], none of them specifically addresses the use of the “Mediterranean diet” concept in the form of an advertising claim that is misleading.

The results also indicated that although some of the ingredients of the products advertised under the semantic field “Mediterranean” are part of the nutritional pyramid of the MD, the product itself, as it is marketed, clearly differs from the nutritional parameters of the diet, since it is mostly processed or ultra-processed. In this sense, the researchers concluded that the synecdochic use of a semantic field that designs the whole -Mediterranean- for a part -Mediterranean Diet- as the advertising discursive strategy, can lead consumers to confusion, thinking that the allusion to the term “Mediterranean” necessarily implies, “being part of the Mediterranean Diet”.

The lack of previous research that associates the MD, marketing discourse, and the nutritional composition of the advertised products were a limitation for this research. At the same time, the absence of studies focused on aspects such as the use of celebrities as agents of influence in the consumption of certain products advertised under the allusion “Mediterranean”, or the rhetorical aspects of advertising associated with the Mediterranean Diet about the legal and regulatory framework, were also limitations to consider in the present research.

At the same time, these limitations open a door to further research, to delve into the impact and the effects that the use and strategic presence of the MD in the advertising discourse has on the nutritional patterns of consumers. Moreover, the research itself has a practical application in line with knowledge transfer: the Mediterranean Diet is an intangible cultural heritage of Humanity (UNESCO) that must be protected for its conservation and transmission, in addition to favoring the maintenance of a healthy eating pattern. In this sense, the results of this research may contribute to this.

5. Conclusion

Although the use of synecdoche is common in advertising rhetoric, it is necessary to note that in food marketing, certain forms of discourse can have negative consequences on the health of individuals. In this sense, the inclusion of the “Mediterranean” semantic field in most of the advertisements analyzed can mislead consumers, affecting their health over time. Concerning this fact, the study highlights the need to review the implications and assumptions contained in the definition of “misleading advertising” contemplated in the regulatory framework in Spain.

Funding sources

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

The authors declare that they have no conflict of interest.

References

- [1] I. Castro-Quezada, B. Román-Viñas, L. Serra-Majem, The mediterranean diet and nutritional adequacy: a review, *Nutrients* 6 (1) (2014) 231–248, <https://doi.org/10.3390/nu6010231> (2014).
- [2] C.-M. Lăcătușu, E.-D. Grigorescu, M. Floria, A. Onofriescu, B.-M. Mihai, The mediterranean diet: from an environment-driven food culture to an emerging medical prescription, *Int. J. Environ. Res. Public Health* 16 (6) (2019) 942, <https://doi.org/10.3390/ijerph16060942>.
- [3] P. Meryem, S. Havva, Mediterranean diet in prevention of chronic diseases, *Int. J. Med.* 6 (7) (2017) 36–39.
- [4] R. Estruch, E. Ros, J. Salas-Salvadó, M.I. Covas, D. Corella, F. Arós, M.A. Martínez-González, Retraction and republication: primary prevention of cardiovascular disease with a Mediterranean diet, *N. Engl. J. Med.* 368 (2018) 1279–1290.
- [5] G. Grosso, S. Marventano, J. Yang, A. Micek, A. Pajak, L. Scalfi, S.N. Kales, A comprehensive meta-analysis on evidence of Mediterranean diet and cardiovascular disease: are individual components equal? *Crit. Rev. Food Sci. Nutr.* 57 (15) (2017) 3218–3232.
- [6] B. Srour, M. Touvier, Processed and ultra-processed foods: coming to a health problem? *Int. J. Food Sci. Nutr.* 71 (6) (2020) 653–655.
- [7] A. Bach-Faig, E.M. Berry, D. Lairon, J. Reguant, A. Trichopoulou, S. Dernini, L. Serra-Majem, Mediterranean diet pyramid today. Science and cultural updates, *Public Health Nutr.* 14 (12A) (2011) 2274–2284.
- [8] S. Dernini, E. Berry, L. Serra-Majem, C. La Vecchia, R. Capone, F. Medina, A. Trichopoulou, Med Diet 4.0: the Mediterranean diet with four sustainable benefits, *Public Health Nutr.* 20 (7) (2017) 1322–1330, <https://doi.org/10.1017/S1368980016003177>.
- [9] A. Diolintzi, D. Panagiotakos, L. Sidossis, From Mediterranean diet to Mediterranean lifestyle: a narrative review, *Public Health Nutr.* 22 (14) (2019) 2703–2713, <https://doi.org/10.1017/S1368980019000612>.
- [10] R. Aliaga Pérez, Dieta Mediterránea y Publicidad: Análisis Deontológico Del Discurso Publicitario, Available online, <http://hdl.handle.net/10045/43284>, 2014 (accessed on 20/01/2021).
- [11] T. Benson, F. Lavelle, A. McCloate, E. Mooney, T. Bucher, B. Egan, M. Dean, Are the claims to blame? A qualitative study to understand the effects of nutrition and health claims on perceptions and consumption of food, *Nutrients* 11 (9) (2019) 2058.
- [12] C.E. Pulker, J.A. Scott, C.M. Pollard, Ultra-processed family foods in Australia: nutrition claims, health claims and marketing techniques, *Public Health Nutr.* 21 (1) (2018) 38–48.
- [13] J. Steinhilber, U. Hamm, Consumer and product-specific characteristics influencing the effect of nutrition, health and risk reduction claims on preferences and purchase behavior—a systematic review, *Appetite* 127 (2018) 303–323.
- [14] Z. Talati, S. Pettigrew, B. Neal, H. Dixon, C. Hughes, B. Kelly, C. Miller, Consumers’ responses to health claims in the context of other on-pack nutrition information: a systematic review, *Nutr. Rev.* 75 (4) (2017) 260–273.
- [15] P. Cuesta-Valiño, P.G. Rodríguez, E. Núñez-Barriopedro, Perception of advertisements for healthy food on social media: effect of attitude on consumers’ response, *Int. J. Environ. Res. Public Health* 17 (18) (2020) 6463, <https://doi.org/10.3390/ijerph17186463>.
- [16] J. Cannon, Notions of region and the Mediterranean diet in food advertising, *Br. Food J.* 107 (2) (2005) 74–83.
- [17] J.A. Díaz Rojo, Lenguaje y reclamos de salud en la publicidad de los alimentos, *Análisis: Quad. Comunicació Cultura* 30 (2003) 217–224.
- [18] M. Davó-Blanes, R. Ortiz-Moncada, D. Gil-González, C. Álvarez-Dardet, T. Lobstein, T. The, Impact of marketing practices and its regulation policies on childhood obesity. Opinions of stakeholders in Spain, *Appetite* 62 (2013) 216–224.
- [19] M.Á. Royo-Bordonada, K. León-Flández, J. Damián, M.J. Bosqued-Estefanía, M.Á. Mota-Geromini, L. López-Jurado, The extent and nature of food advertising to children on Spanish television in 2012 using an international food-based coding system and the UK nutrient profiling model, *Public Health* 37 (2016) 88–94.
- [20] E.A. Ravensbergen, W.E. Waterlander, W. Kroeze, I.H. Steenhuis, Healthy or unhealthy on sale? A cross-sectional study on the proportion of healthy and unhealthy foods promoted through flyer advertising by supermarkets in the Netherlands, *BMC Public Health* 15 (1) (2015) 1–10.
- [21] M. Montaña, M. Jiménez-Morales, M. Vázquez, et al., *Nutrients* 11 (12) (2019) 2873, <https://doi.org/10.3390/nu11122873>.
- [22] J. Norman, B. Kelly, E. Boyland, A.T. McMahon, The impact of marketing and advertising on food behaviours: evaluating the evidence for a causal relationship, *Curr. Nutrition Rep.* 5 (3) (2016) 139–149.
- [23] G. Grosso, F. Galvano, Mediterranean diet adherence in children and adolescents in southern European countries, *NFS J.* 3 (2016) 13–19.
- [24] P.I. Idelson, L. Scalfi, G. Valerio, Adherence to the Mediterranean diet in children and adolescents: a systematic review, *Nutr. Metab. Cardiovasc. Dis.* 27 (2017) 283–299.
- [25] C. Davis, J. Bryan, J. Hodgson, K. Murphy, Definition of the Mediterranean diet: a literature review, *Nutrients* 7 (11) (2015) 9139–9153.
- [26] D. Mastorakou, M. Rabaesus, P. Salen, G. Pounis, M. de Lorgeril, Mediterranean diet: a health-protective dietary pattern for modern times, in: *Analysis in Nutrition Research*, Academic Press, 2019, pp. 233–258.
- [27] L. Serra-Majem, L. Tomaino, S. Dernini, E.M. Berry, D. Lairon, J.N. de la Cruz, A. Trichopoulou, Updating the mediterranean diet pyramid towards sustainability: focus on environmental concerns, *Int. J. Environ. Res. Public Health* 17 (23) (2020) 1–20, <https://doi.org/10.3390/ijerph17238758>.
- [28] E. Verger, M. Perignon, M.J. Amiot-Carlin, Promoting sustainable food systems for good nutrition and health in the Mediterranean region: a conceptual framework from the MEDINA-Study Group, in: 21. International Congress of Nutrition, Medina Study Group, 2017, October.
- [29] S. Camuso, The Correlation between Cooking Skills and Adherence to the Mediterranean Diet, Pacific University, 2016.
- [30] F.M. da Rocha Leal, B.M.P.M. de Oliveira, S.S.R. Pereira, Relationship between cooking habits and skills and Mediterranean diet in a sample of Portuguese adolescents, *Perspect. Public Health* 131 (6) (2011) 283–287.
- [31] W.C. Willett, F. Sacks, A. Trichopoulou, G. Drescher, A. Ferro-Luzzi, E. Helsing, D. Trichopoulos, Mediterranean diet pyramid: a cultural model for healthy eating, *Am. J. Clin. Nutr.* 61 (6) (1995) 1402S–1406S.
- [32] L. Sirieix, M. Delanchy, H. Remaud, L. Zepeda, P. Gurvey, Consumers’ perceptions of individual and combined sustainable food labels: a UK pilot investigation, *Int. J. Consum. Stud.* 37 (2) (2013) 143–151, <https://doi.org/10.1111/j.1470-6431.2012.01109.x>.
- [33] E. Jones, Rethinking Greenwashing: corporate discourse, unethical practice, and the unmet potential of ethical consumerism, *Sociol. Perspect.* 62 (5) (2019) 728–754, <https://doi.org/10.1177/0731121419849095>.
- [34] S. Pengpid, K. Peltzer, Content analysis of food advertising strategies and ethical implications on south African television, *J. Psychol. Afr.* 25 (1) (2015) 73–79, <https://doi.org/10.1080/14330237.2015.1007604>.
- [35] V. Srivastava, T. Nandan, A study of perceptions in society regarding unethical practices in advertising, *South Asian J. Manag.* 17 (1) (2010) 61.