Health-Related Claims in Food Supplements Endorsements: A Content Analysis from the Perspective of EU Regulation

Abstract

Objectives: Based on the legal framework regulating the advertisement of food supplements in the EU, the aim of this paper is to analyse the relationship between the presence of endorsers, the different types of health-related claims (H-RCs) and product content information.

Study design: We applied a quantitative approach based on the content analysis of all radio spots broadcast throughout 2017 on full-service radio stations in Spain.

Methods: A corpus of 10,556 radio spots was obtained of the three radio stations with the highest audience levels (165 without repetitions). We incorporated data on the accumulated broadcast frequencies to supplement the content analysis specific to each radio spot with its weight in relation to the overall advertising discourse. We developed a coding scheme to assess the type of endorser, the types of health-related claims and the product content information.

Results: Results show that European directives are breached in different ways. Health care experts prevail in disease claims, although they are prohibited. Celebrities are the most widely used endorsers (25%) in the function and reduction of disease risk claims. Additionally, although these types of claims require substantiation by authorised ingredient, 73% of H-RCs lack this information.

Conclusions: The high presence of illicit H-RCs and endorsers, such as physicians, and the omission of compulsory product information suggest that public administrations must apply stricter monitoring and sanctioning mechanisms to dissuade advertisers from further breaches of the law and to protect consumers. Implications for public health policy are made.

Keywords: content analysis; endorsers; European regulation; food supplements; health-related claims (H-RCs); law; radio advertising

Introduction

Advertising plays a decisive role in the demand and consumption of food supplements. Whether directly or indirectly, many advertisements encourage their consumption and promote self-care as substitutes for medication and professional care.[1] It is estimated that up to 81% of this type of advertising introduces claims on illness prevention, including the most serious illnesses: liver, tumoral and cancerous diseases.[2] In addition, advertisers take advantage of the credibility, trustworthiness and persuasive power of certain types of endorsers to encourage the consumption of food supplements. Consequently, the promotion of food supplements has been the subject of recent and specific regulations in many countries.

Despite the worldwide increase in consumption of this type of product, and the public health implications involved,[3] empirical research on food supplements advertising is scarce since the subject has only recently gained relevance in terms of academic attention or European law. It is worth noting that most studies published to date have focused on H-RCs[4, 5] and the presence of testimonials[6] within the framework of the Dietary Supplement Health and Education Act of 1994 (DSHEA) issued by the US Food and Drug Administration. Outside the scope of American regulation, Hassali et al.[7] evaluated the inclusion of ingredients and functional claims in women's magazine advertisements in relation to their compliance with the guidelines established by the Malaysian Advertisements Board (MAB); and Baudischova et al.[8] analysed the quality of internet information regarding the top 100 bestselling food supplements in the Czech Republic from a European regulatory perspective, focusing on active substances, overall composition and permitted health claims. However, no work has been found on the analysis of H-RCs in food supplements radio advertising.

In the context of EU legislation, Regulation (EC) No 1924/2006 of the European Parliament and Council of 20 December 2006 on nutrition and health claims made on food, establishes in Article 12 that health claims that refer to the recommendations of individual

doctors or health professionals and other associations are not allowed.[9] In this sense, the main objective and contribution of this paper is to establish the relationship between three variables subject to regulatory restrictions—the use of H-RCs, endorsers, and the inclusion of product content information in food supplements advertising—in order to assess their level of compliance with European regulation.

Methods

This work's methodology follows a quantitative approach based on the content analysis of all radio spots broadcast throughout 2017 on full-service radio stations in Spain. Although the radio medium has received little attention from the scientific community, in Spain it has the second largest audience after television and more than 26,878,000 daily listeners.[10] It is considered to be the most trustworthy source of information by 82% of the Spanish people[11] and 70% of European citizens.[12] The three radio stations with the highest audience levels, reaching a total of 9,000,000 daily listeners,[10] that therefore best respond to the research objectives are Cadena Ser, Cadena Cope and Onda Cero.

We obtained the data analysed from Arce Media's database (joined since 2007 to Nielsen's database), a company dedicated to the collection and analysis of advertising activity in conventional media. In this study, food supplements belong to a non-medication group within the category of health and include the following types of products: food and vitamin complexes, tonics, energy boosters, cell regeneration supplements, weight loss supplements, vitamins and other health and nutrition products. The corpus comprised 10,566 radio spots. After eliminating repetitions, the number of different advertisements was reduced to 165. Thus, for example, the same product may broadcast several versions of an advertisement with variations in the type of argument, claim or even endorser. It is important to point out that this investigation provides the opportunity to work with the entire universe of food supplements

radio spots broadcast between the 1 January and 31 December 2017, rather than with a sample. This eliminates the errors and bias typically involved in probability sampling. We incorporated data on the accumulated frequencies of broadcasts to supplement the content analysis specific to each radio spot with its weight in relation to the overall advertising discourse.

Two trained coders performed the complete analysis and coding process. The criteria for the coding of variables and their corresponding attributes follows:

1. *Type of Endorser*. To imbue brands with personality, that is, to personify the product[13], there are different advertising mechanisms: (a) Expert: a health care professional such as a physician, nurse, pharmacist or other medical expert when identified by the profession. Directive No 1924/2006 in Article 12 does not allow this use;[9] (b) Celebrity: a famous person whose name is socially recognised and mentioned in the advertisement; (c) Typical consumer: an unknown character who represents a consumer; (d) Anonymous Spokesperson: an unidentified voiceover who represents the advertiser; and (e) None of them. The attributes of this variable are excluded because advertisements usually feature only one type of endorser.
2. *Types of Health-Related Claims*. A claim is a statement made in advertisements in relation to the benefits, characteristics and/or performance of a product. In line with legislation,[9,14,15] this aspect has been operationalised into three types of variables with their corresponding attributes: (a) Disease claims (DC), of which the presence/absence refer to the treatment, prevention or cure of an illness. The statement refers to the product's effects on a disease, and the claim can be explicit (e.g., brand "X" improves arthrosis) or implicit (e.g., brand "X" relieves joint pain). These claims are not permitted in the European Union; (b) Function claims (FC), in which the presence/absence refer to the effects of the product's ingredients on the structure or

function of the body for maintenance of good health. Function claims are only permitted when based on and substantiated by generally accepted scientific evidence. An example of this type of claim authorised by the European Food Safety Authority (EFSA) follows: Calcium is needed for the maintenance of normal bones and contributes to normal muscle function and neurotransmission; and (c) Reduction of disease risk claims (RDRC), presence/absence, where consumption of the product reduces the risk factor of developing a disease. These claims may be made when they have been authorised by the EFSA and included in a community list of such permitted claims. An example follows: Calcium helps to reduce the loss of bone mineral density in post-menopausal women. Low bone mineral density is a risk factor for osteoporotic bone fractures. The operationalisation of the three variables with their excluding attributes has allowed detection of various H-RCs in every analysed radio spot.

3. *Product Content Information*. European regulation considers only vitamins and minerals as nutrient substances.[15] Its operationalisation was as follows: (a) vitamins; (b) minerals; (c) various vitamins and/or minerals with other ingredients; and (d) none of them. These four attributes are also excluding.

The previous intercoder reliability tested with Cohen's Kappa[16] showed a variation between 0.698 and 1, calculated with SPSS (version 17). Besides the structural variable Radio Station (k=1), the variable type of endorser obtained a value of k=0.970. With regard to the variables included in the category types of health-related claims, for disease claims k=0.698, for function claims k=0.856 and for reduction of disease risk claims k=0.812. Finally, k=0.985 in the case of the variable product content information. In order to solve the few discrepancies detected, an additional session took place in which the two coders, after assessing the situations, decided the final coding of doubtful cases. The results shown below are based on a value k=1 for all variables.

Results

The first result shows that all food supplement radio spots use endorsers rather than other types of advertising resources, such as fiction or dramatisation. The most prevalent type of endorser is Anonymous Spokesperson, present in 60% of analysed advertising. However, when endorsers are identified by name and/or profession, Celebrities have the highest presence (25%), followed by Experts (14%). If we compare this distribution of frequencies with the percentages of the analysed corpus without repetitions (165), it can be observed that in the latter, Anonymous Spokespersons accumulate 47.3% of the analysed radio spots while Experts accumulate 27%.

Table 1 provides a breakdown of the 8,813 H-RCs that feature an endorser in the analysed corpus. With regard to the relationship between type of endorser and H-RCs, function claims are most frequently used by Experts (70.2%), Celebrities (75.5%) and Anonymous Spokespersons (56.4%). Additionally, Typical Consumers use disease claims and function claims in equal measure (17.2%). On the other hand, Expert endorsers make a more intensive use of disease claims (48.1%), although in absolute terms Anonymous Spokespeople use this type of resource (852) as well as function claims (3,571) with the highest frequency. If we analyse function claims, which are the most prevalent H-RCs, without considering the frequency of the broadcasts, that is 165 radio spots, the results provide similar percentages. In fact, Experts appear in 70.5% of cases, Celebrities in 68.3% and Anonymous Spokespersons in 56.4%. Therefore, considering the large difference in size between the two corpora (10,566 y 165), the deviations are not substantially significant.

Taking into account that only vitamins and minerals are considered nutrient substances in food supplements and that all H-RCs must be based on these ingredients, the data in Table 2 indicate that in 77.7% of cases endorsers do not inform listeners of the relevant composition

of the advertised products; this percentage is similar (70.9%) if we analyse the corpus without repetitions (165). Of the 22.3% of radio spots that do explicitly mention ingredients, 8.5% name vitamins while 12.2% name minerals and/or other substances. Experts are the endorser type who most frequently mention these types of ingredients (26.9%).

Discussion

This investigation provides new data regarding advertisers' level of compliance with current legislation on food supplements advertising in the European context, where studies of this nature are scarce. The results point at a worrying presence of prohibited endorsers, such as physicians, and the use of illicit H-RCs. In this regard, our research shows for the first time that the use of certain endorsers[17] may lead to misperceptions in consumers due to their conveyed reliability and expertise. In particular, some advertisers seem to take advantage of journalists' credibility and experts' reliability and trustworthiness to promote alleged health benefits that food supplements cannot provide, which sometimes result in the inappropriate and, in some cases, dangerous consumption of supplements as alternatives to prescription medication.

Although previous works suggest that there is a relevant presence of disease claims not allowed in food supplement advertising,[4,8,18,] our research shows that nearly half of these claims are endorsed by physicians, who explicitly or implicitly mention diseases, such as arthrosis, influenza and allergies. Likewise, even though reduction of disease risk claims are rarely present in the analysed corpus, they are only endorsed by experts and celebrities.

Additionally, and consistent with previous research,[5,7,18,19,] function claims are the most prevalent type of claim in food supplements advertising on Spanish radio and refer to the restoration, improvement or enhancement of health and sexual activity. The discourse of fear, the use of medical terms like 'symptoms' or 'pathology', and comparisons with

medication are prominent features of these claims. Again, for the first time, this study shows the prevalent use of celebrities and experts to endorse function claims, many of which are illicit since they are not substantiated by authorised substances.

In line with previous studies,[5] our work confirms that most food supplement radio spots fail to mention authorised vitamins and minerals, so their H-RCs are not substantiated. In this sense, this study reveals that expert endorsers offer more information about the product's ingredients, but this occurs in very few cases. It is important to bear in mind that the relevant regulation establishes as a general principle in Article 3 that health claims shall not be false, ambiguous or misleading[9.] Our investigation has found frequent vague claims—'specific vitamins', 'unique patented formula', 'thanks to its composition' and 'thanks to its nutritional value'—that may be considered clearly misleading by omission.

On the other hand, certain factors have emerged during the process of this work that are also worth noting. In the case of endorsers, some experts are fake physicians without available credentials. Thus, these alleged health professionals can be considered disguised communicators or 'posers',[20] which is a clear example of misleading advertising. Additionally, when endorsers give opinions about an issue outside their area of expertise, endorsements may mislead consumers.[21] Given their high social influence and recognition, celebrity endorsers should at least test products in order to guarantee the validity of the testimonial or should possess whatever expertise is implied by the nature of their claims; to be specific, the use of endorsements requires an understanding of the legal parameters involved.[22] In this respect, although advertisers are ultimately responsible for their advertising and content, when the law is breached, the endorser—as the source of the message—is usually exempt from any responsibility. This fact needs to be analysed in terms of public policy because endorsers should be held responsible for what they say and should not be granted immunity.

Policy implications

Food supplements advertising is decisive in terms of providing information on products that currently pose a health risk to consumers.[3,8] The worrying presence of illicit H-RCs has been acknowledged as a public danger because it generates false perceptions and inappropriate behavior.[23] Previous studies raise concern over the significant presence of deceptive H-RCs[8,18,24,25] and other audacious claims that lack scientific backing.[26,27] Therefore, given the high level of consumption and advertising of this type of product, it would seem beneficial to implement the following relevant mechanisms to protect consumers: first, efficient governmental supervision of the advertising activity; second, an increase of the sanctions for offending advertisers; and third, the implementation in media of a preclearance system to ensure that messages and endorsements are lawful before their dissemination. These measures would filter out illicit endorsements before they reach potential users and thus avoid the purchase of products that fail to fulfil the advertised benefits and meet consumer expectations.

Given the multidimensional complexity of the issue, the matter should be addressed holistically to include all stakeholders involved in the promotion of public health issues.[28] Governments should develop stricter regulation and control over the introduction of food supplements into the market, and public administrations and the media must monitor advertising so that unlawful, false or misleading H-RCs do not reach consumers. The effectiveness of the self-regulatory system should be improved—which is now constantly called into question—to ensure that advertisers and endorsers act with greater social responsibility and establish higher sanctions for offenders. To this purpose, it would be necessary for public administrations to develop information and educational campaigns to increase awareness regarding food supplements so that consumers are able to make informed purchase decisions.

Limitations

This work has focused on the radio medium and full-service stations. The scope of future research could be extended to include other types of radio stations and/or media. In this regard, it would be relevant to compare endorsers in food supplements radio advertising with their presence in visual media—such as television, press or magazines—in other European countries.

Another limitation of this work is that it only analyses the presence of substances allowed by law in H-RC advertising. The analysis has highlighted the fact that many health claims are in breach of current legislation because ingredients other than vitamins and minerals are mentioned in radio spots. Therefore, future research could aim to analyse misleading claims, such as whether H-RCs are in line with the health benefits of food supplement components as established by the European Commission or whether they have been authorised by EFSA. This step would require a more specialised analysis of the object of study—food supplements radio spots—from the perspective of regulation and self-regulation. It would also be relevant to conduct an analysis from the perspective of consumers in order to determine their knowledge regarding the different types of H-RCs.[3]

Conclusions

The high presence of illicit endorsers in the promotion of food supplements, the number of illicit H-RCs, and the omission of product information suggest that public administrations must apply stricter control and sanctioning mechanisms to dissuade advertisers from further breaches of the law and to protect consumers. Although advertisers are solely liable for illicit endorsements, the social responsibility towards message recipients must be extended to media owners and spokespeople, especially when the latter's persuasive power and social influence

are exploited without considering the impact on consumers. In the case of the EU, it seems essential to supplement the current regulation on food supplements advertising with an action plan and common sanctioning framework that would enable policymakers to protect consumers' health from the potentially harmful effects of consumption.

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Table 1 – Type of Endorser and Type of Health-Related Claims

	Disease Claim (DC)[a]				Function Claim (FC)[b]				Reduction of Disease Risk Claim (RDRC)[c]				Total			
	Presence		Absence		Presence		Absence		Presence		Absence		Presence		Absence	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Expert	701	48.1	756	51.9	1,023	70.2	434	29.8	77	5.3	1,380	94.7	1,801	20.44	2,570	11.23
Celebrity	268	10.3	2,336	89.7	1,965	75.5	639	24.5	298	11.4	2,306	88.6	2,531	28.72	5,281	23.08
Typical Consumer	29	17.2	140	82.8	29	17.2	140	82.8	—	—	169	100.0	58	0.66	449	1.96
Anonymous Spokesperson	852	13.4	5,484	86.6	3,571	56.4	2,765	43.6	—	—	6,336	100.0	4,423	50.19	14,585	63.73
Total	1,850	17.5	8,716	82.5	6,588	62.4	3,978	37.6	375	3.5	10,191	96.5	8,813	100.0	22,885	100.0

[a] Type of Endorser and Disease Claim; χ^2: 1,111.096; Significance: p<0.001

[b] Type of Endorser and Function Claim; χ^2: 472.900; Significance: p<0.001

[c] Type of Endorser and Reduction of Disease Risk Claim; χ^2: 726.319; Significance p<0.001

Table 2 – Type of Endorser and Product Content Information

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Vitamins	–	–	–	–	–	–	897	14.2	897	8.5
Minerals	–	–	–	–	–	–	170	2.7	170	1.6
Various	392	26.9	139	5.3	–	–	763	12.0	1,294	12.2
None of them	1,065	73.1	2,465	94.7	169	100.0	4,506	71.1	8,205	77.7
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Note: Type of Endorser and Product Content Information; χ^2: 1,236.986; Significance: p<0.001

HIGHLIGHTS

- Celebrities endorsed 25% of the food supplements radio spots analyzed.
- Function Claims are most frequently used by Experts (70%) and Celebrities (75%).
- Health-care experts make a more intensive use of Disease Claims (48%).
- Endorsers do not inform listeners about the content of products in 78% of cases.
- When the law is breached, the endorser is exempt from any responsibility.