Health policy

The Endorsers' Presence on Regulation and Endorsements in Dietary Supplements' Advertising on Spanish Radio

--Manuscript Draft--

Manuscript Number:	HEAP-D-19-00348R2
Article Type:	Full-length article
Keywords:	Advertising Endorsers; Health Policy; Radio Advertising; Regulation
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Abstract:	Healthy lifestyles provide a market niche for products offering health benefits in a context where consumers have a misconception of the characteristics and functions of dietary supplements (DS). Due to an increase of endorsers' advertising persuasion, their presence is limited and, in some cases, forbidden. The main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to verify its compliance with current legislation and determine the endorsements' characteristics. Specifically, this paper analyses the quantity, frequency, placement and endorsement type of DS spots on full-service radio stations. Content analysis of the totality of radio spots broadcast throughout the year 2017 is conducted, deriving a corpus of 165 different radio spots belonging to the product category of dietary supplements, broadcast a total of 10,566 times. The results show that 40% of radio spots use endorsers not allowed by law, such as health care professionals, typical consumers and celebrities. The latter have an unusually high presence in DS radio advertising, with one out of four spots featuring celebrities or opinion leaders, including journalists and radio hosts as well as a frequent use of testimonial endorsements. Implications for health and public policy are made

December 29, 2019

Dear Professor Barros,

Thank you very much for your good news when considering our manuscript (HEAP-D-19-00348) entitled "The Endorsers' Presence on Regulation and Endorsements in Dietary Supplements' Advertising on Spanish Radio" suitable for publication in Health Policy. Having carefully considered every observation and suggestion, we are pleased to submit a third version of the article, and our replies to the reviewers' comments.

As usual, we have prepared two versions of the revised manuscript. The "marked version" includes the corrections and additions suggested by the reviewers, which we have highlighted in green, but keeping the yellow marks of the second version. However, we have removed all the deleted sentences -crossed out in red- from the "marked version" and also from the "Highlights" file. The "clean version" presents the manuscript without any mark, but includes all changes made during the review process. Furthermore, the "Review Note" file explains how we have addressed each suggestion and finally, on the "Title Page" we have added special thanks for the reviewer's work in the "Acknowledgments" section.

We wish to reiterate our gratitude for all the comments and suggestions which have allowed us to significantly improve our article, and specially for the excellent work of the reviewers. We have been very fortunate with the reviewer's selection you have made.

Should you require any further information, please do not hesitate to contact us.

We look forward to hearing from you.

Clara Muela-Molina, Salvador Perelló-Oliver, Ana García-Arranz

Reply to Reviewers (Manuscript HEAP-D-19-00348R1)

Reviewer #1:

Dear Reviewer,

We are deeply grateful for the interest you have shown in our paper and for your valuable suggestions on several points that should have been better clarified. We agree that your careful review and your insightful comments have improved the quality of the manuscript considerably. We also thank gratefully the positive and encouraging comments.

Ensuring that the reviewer's comments and the proposed changes have been thoroughly implemented in the paper entitled ***"The Endorsers' Presence on Regulation and Endorsements in Dietary Supplements' Advertising on Spanish Radio"***, we re-submit a third version. We have highlighted in green the corrections and additions suggested by reviewers. In the following sections we explain how we have addressed the issues raised by the reviewer.

1) Pre-clearance systems for health-related advertising are the best solution to prevent illicit messages from reaching the audience, and making their implementation compulsory for media owners would be an effective way to protect consumers

If I am not mistaken, these systems are already offered by Autocontrol. Or do they refer to something else (compulsory and legal binding pre-clearance system?)

R.: Autocontrol has not implemented any pre-clearance system and not even an advertising monitoring. This is the reason why media self-regulation and its legal binding needs to be strengthened: to ensure that all radio and television advertisements in Spain are reviewed before dissemination, as it is already being done in other countries, such as United Kingdom. In any case, we really appreciate your comment and we have clarified the sentence in the text (p. 14).

2) Then with this sentence: Therefore, the ban of celebrities in DS advertising must be extended to other products which may put at risk the health or economy of consumers, such as food, tobacco, alcohol, sport betting, etc.

I believe that the law on advertising already bans the advertising of tobacco and alcohol. Therefore, perhaps this statement is somewhat controversial (perhaps I am wrong).

R.: You are certainly right that tobacco advertising is totally banned, but alcohol advertising has only some restrictions on television according to Spanish legislation and European Directives. Following your comment, we corrected the sentence and eliminated tobacco in the list of products whose advertising is prohibited (p. 15).

3) Another matter that I consider weak in accuracy terms is the following statement:

But this unethical behaviour is also the consequence of other factors, such as a lack of monitoring and control by public administrations and the inefficiency of the Spanish selfregulatory system, as established in previous works [44, 45]. In fact, although health-related advertising is notorious for accumulating the highest percentage of ceased

advertising, the number of complaints keeps rising every year while the commitment of advertisers to withdraw the offending advertisement is often not put into practice, which indicates that the Spanish self-regulatory association is failing to manage effectively the continuing abuses of repeat offenders [46, 47].

The references included in Sections 44 onwards are by the same authors (I do not know if they are the authors of this text, probably they are not. However as I see it, this text must include more sources that confirm these statements (with both references and empirical samples).

R.: Most of the works analyzing advertising self-regulation were based on studies that describe the characteristics of the system in different countries or, where appropriate, that make proposals on the best implementation of the advertising self-regulation system. In this sense, we have not found any other studies that call into question the efficiency of Autocontrol, and much less empirical works. However, taking into account the reviewer's suggestion, we have included some references that deal tangentially with Autocontrol's problem and that, somehow, support the underlying idea of the article (p. 14).

Reviewer #2:

Dear Reviewer,

Thank you very much for the interest shown in our paper and your careful evaluation. Your constructive comments and inputs were very helpful for improving the article. We also appreciate your positive feedback, which is very encouraging. Were are very grateful for your excellent work as reviewer and, specially for your kind words of "congratulations".

HIGHLIGHTS

- All DS radio spots use endorsers, 40% of which are not allowed by law.
- Only 14 companies advertise all DS radio spots broadcast in 2017 and only one brand is responsible for 80% of endorsements.
- The figure of endorsers used in advertising reinforces the peripheral route to persuasion.
- Celebrities are identified as the endorsers with the highest presence in DS radio spots, appearing in 25% of advertisements.
- Celebrities are the endorsers who most frequently use testimonials to share their consumption experience with the audience, while experts combine recommendations and descriptions of the advertised products.

TITTLE PAGE

Tittle: The Endorsers' Presence on Regulation and Endorsements in Dietary Supplements' Advertising on Spanish Radio

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Acknowledgements:

The authors would like to acknowledge to Juana Farfán Montero and Alfonso de la Quintana for assistance in coding. Likewise, the authors would like to acknowledge and thank the anonymous reviewers for their comments, which have greatly improved this paper.

Funding details:

This work was supported by the Ministry of Economy and Competitiveness of de Government of Spain, State Program R&D Oriented Society Challenges, under Grant (CSO2017-82267-R).

Conflicts and declaration of interests:

The authors declare that they have no conflicts of interest.

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ABSTRACT

Healthy lifestyles provide a market niche for products offering health benefits in a context where consumers have a misconception of the characteristics and functions of dietary supplements (DS). Due to an increase of endorsers' advertising persuasion, their presence is limited and, in some cases, forbidden. The main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to verify its compliance with current legislation and determine the endorsements' characteristics. Specifically, this paper analyses the quantity, frequency, placement and endorsement type of DS spots on full-service radio stations. Content analysis of the totality of radio spots broadcast throughout the year 2017 is conducted, deriving a corpus of 165 different radio spots belonging to the product category of dietary supplements, broadcast a total of 10,566 times. The results show that 40% of radio spots use endorsers not allowed by law, such as health care professionals, typical consumers and celebrities. The latter have an unusually high presence in DS radio advertising, with one out of four spots featuring celebrities or opinion leaders, including journalists and radio hosts as well as a frequent use of testimonial endorsements. Implications for health and public policy are made.

Keywords: Advertising Endorsers; Health Policy; Radio Advertising; Regulation;

INTRODUCTION

Health cannot be understood as the absence of disease or infirmity but rather as a state of complete physical, mental and social wellbeing [1]. In advanced societies, over recent years,

the idea of achieving and maintaining a quality of life that allows people to live more and better has meant the development of a market niche for a long list of products and services aimed at improving people's health. The ever-increasing modern style of self-care which has flourished in developed countries promotes concepts such as self-medication [2] and the medicalisation of food, and commercial strategies geared towards establishing a direct relationship between food and health [3]. However, adopting a healthy lifestyle implies efforts many people are not willing to make, hence the search for quick easy means to obtain similar results. Modern culture is attracted to 'magic bullets' as an antidote for lifestyles choices [4]. In this social context, the regulation, consumption and advertising of dietary supplements (DS) are generating great controversy and have become the focal point of academic and scientific research [5, 6, 7].

For many different reasons [2, 7] people use DS as an alternative to conventional medical treatments [8]. However, their inadequate or excessive use can cause serious damage to the health of consumers—including organ damage from inherent toxicity, interactions, or product contamination—and increases the number of hospital admissions and the attendance rate at emergency wards [5, 9, 10]. On the other hand, consumers are not well informed about the safety and efficiency of DS [8, 9]. In fact, according to a survey conducted by a consumer organisation [11] most Spanish people believe that the advertised benefits of DS involve no side effects (71.8%) and that the products have been analysed and authorised by the health authorities (83.7%). Spaniards also believe that DS prevent disease (57.9%) or cure illnesses in the same way as medicine, but that they are more inoffensive and natural (35%). Additionally, the fact that DS are sold in pharmacies—and resemble medication in terms of packaging and presentation—leads consumers to equate the scientific guarantee and effectiveness of both types of products.

In Spain, 30% of consumers take some type of dietary supplement [12]. Although there is little scientific evidence that proves their safety and benefits [6], DS are usually presented as a natural alternative to the chemical substances used in medication. However, natural is not always synonymous with harmless [13]. The consumption of DS results in economic loss to consumers who spend a lot of money on products that do not fulfil their promises. It also poses a risk to human health since many consumers take these products instead of following medical advice, treatment and therapy. In fact, some cancer patients have died after being treated with OTC products instead of seeking and following the advice of specialised physicians [4]. For these reasons and on public health grounds, the Food and Drug Administration justifies the ban on unverified health claims [14].

Advertising plays a prominent role in the demand and consumption of DS. Whether directly or indirectly, many advertisements encourage the consumption of DS instead of medicine, and the practice of self-care instead of seeking the advice of a health care professional [4]. It is remarkable that 81% of this type of advertising contains statements on disease prevention, including the most serious illnesses such as tumoral and liver diseases and cancer [15]. And advertisers draw on advertising strategies that include endorsers as an element of effective persuasion.

There are different mechanisms in advertising used to imbue brands with personality, i.e. to personify the product [16, 17]. The most widely used classification distinguishes between: (1) celebrities; (2) typical consumers; (3) professional experts; and (4) company spokespeople. The presence of endorsers in advertising has received the attention of researchers from many different fields, in many cases to demonstrate that their inclusion increases the effectiveness of the advertising message [16, 18]. According to the Elaboration Likelihood Model (ELM) of persuasion, endorsers are a peripheral cue with influencing power on the attitude of recipients and can, therefore, increase advertising efficiency [19]. If

recipients are confident that an expert source will be willing to provide accurate information because of his or her high trustworthiness, they may forgo the effortful task of scrutinising the message and unthinkingly accept the conclusion as valid [43].

Findings from previous research on health-related advertising indicate that expert endorsers—pharmacists and physicians—provoke more favourable changes in consumer attitudes than celebrities and typical consumers [25]. Similarly, experts yield better responses than their celebrity counterparts, who are not considered an effective or suitable cue for the diffusion of prescription drug information when targeting consumers with medical conditions [26]. Consumers' attitude towards the advertisement is more positive when endorsed by an expert or celebrity rather than a non-celebrity [41]. However, in the case of dietary supplements, celebrity endorsers tend to be more effective than experts in terms of consumer ratings for advertising liking and believability [27]. On the other hand, expert endorsements and consumer testimonials are biased and may mislead consumers when endorsers are voicing opinions outside their area of expertise [42].

Due to their persuasive potential endorsers are usually highly regulated by public administrations. In this regard, Kertz and Ohanian argue that the effective use of endorsements demands an understanding of the legal parameters imposed [20]. Thus, an endorsement is defined as any kind of advertising message that reflects the opinions, beliefs, findings or experiences of a party other than the sponsoring advertiser, who consumers are likely to believe [21].

Spain does not have a specific legal framework that regulates the use of endorsers in advertising. Nevertheless, regulation does exist for the advertising of products with alleged health benefits—with the exception of over-the-counter medicines (OTC) which have their own legislation. This type of products includes beverages, food, beauty and personal care products, weight loss products and food supplements. The Royal Decree 1907/1996, of 2

August, on the advertising and promotion of commercial products, activities or services with intended health purposes in Article 4 [22]—on the prohibition and limitations of advertising—bans the use of endorsements attributed to health care professionals, celebrities or well-known personalities, or to real or alleged patients, as a means to induce consumption. Furthermore, Article 5 prohibits health care professionals from using their name, profession, position or employment in advertising that promotes preventive, therapeutic, rehabilitation or any other type of health-related benefit. It also prohibits any type of advertising that includes medical diagnoses, prognoses or prescriptions, whether real or alleged, on television, radio or any other medium of dissemination or communication.

On the other hand, DS are a kind of food and subject to Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods, which stablishes in Article 12 that recommendations of individual doctors or health professionals and other associations shall not be allowed [23] Spain, the transposition of this Directive led to Law 17/2011, of 5 July, on food safety and nutrition [24], which establishes in Article 44 the prohibition of endorsements from science or health professionals, real or fictional, or from real or alleged patients, as a means to induce consumption, as well as the suggestion of a health or scientific guarantee in food advertising.

One of the main lines of research in health-related advertising focuses on the effects of endorsers in order to demonstrate the effectiveness of personification as a strategy, and how it influences the attitude of the recipient depending on the type of person who endorses the product [25, 26, 27]. Attention has also been given to the different types of endorsers used in direct to consumer (DTC) prescription drug advertisements [28] on television and in DS magazines [29]. On the other hand, television [28, 30, 31, 32] and print [29, 33, 34] are the preferred types of media for the analysis of health-related advertising, and there seems to be a lack of work on the presence of endorsers in health-related radio advertising.

Based on previous research, the main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to verify its compliance with current legislation and determine the endorsements' characteristics. More specifically, this paper aims to analyse the quantity, frequency, placement and endorsement type of DS spots on full-service radio stations. The radio medium has been chosen because it has the second largest audience after television with more than 26,878,000 daily listeners [35] in Spain and according to a recent sociological report by Metroscopia [36], it is the most trustworthy source of information for 82% of Spanish people, followed by the Internet (80%), newspapers (55%) and television (51%).

MATERIALS AND METHODS

The methodology chosen to develop this work follows a quantitative and multistage approach based on content analysis. This enables the objective and systematic description of the contents of the radio spots broadcast throughout 2017 on full-service radio stations in Spain, since the programming´s contents are based on news and current affairs. The selection of the stations followed two criteria: national coverage and Spanish-language broadcasting. The stations with the highest daily number of listeners are: Cadena Ser (4,317,000), Cadena Cope (2,785,000) and Onda Cero (1,898,000) according to data from the Estudio General de Medios (EGM) [35].

The data analysed was obtained 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, dietary supplements belong to the non-medicine 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. Following this selection

criteria, the final corpus is composed of 10,566 radio spots (165 without repetitions). It was decided to incorporate the accumulated frequencies of broadcast due to the importance of supplementing the content analysis specific to each radio spot with the weight each one has within the overall advertising discourse. This provides the opportunity to work with the complete universe of DS radio spots rather than with a sample. In this way it is possible to avoid the statistical bias and margins of error inherent to the elaboration process of any statistical sample. The complete text transcription of each one of the 165 spots, broadcast a total of 10,566 times, was undertaken for its subsequent analysis and coding by two trained coders, according to the following variables:

(1) Radio Station: Cadena Ser, Cadena Cope, Onda Cero.

(2) Advertiser.

(3) Month.

(4) Time Slot (Asociación para la Investigación de Medios de Comunicación, 2017): Early Morning (00:00h-05:59h), Morning (06:00h-11:59h), Midday (12:00h-15:59h), Evening (16:00h-19:59h) and Night (20:00h-23:59h).

(5) Position: position of the radio spot in the advertising block. It can be: First; Second; Penultimate; Last; Other.

(6) Type of Endorser [28]: Expert; Celebrity; Typical consumer; Anonymous spokesperson; None.

(7) Type of Endorsement [37, 38, 39]: (1) Presentation: in a co-presentational form using the third person and acting as a spokesperson or anonymous voiceover, the endorser refers to the brand or describes the product via a descriptive message with low or without involvement; (2) Testimonial: in an explicit form using the first person, the description of the characteristics or benefits of the product is based on the positive experience of the endorser who shares his/her consumer satisfaction with the

target audience. In other cases, a professional expert or typical consumer recommends the product based on his/her knowledge as a specialist in the field or consumption experience, as the case may be. Therefore, in both cases, the level of involvement is high. (3) Both: sometimes an endorsement may include a testimonial or recommendation and the description of the product, using both types of pronouns: first and third person; (4) Others.

To decide the type of endorser and endorsement, the criterion used was to select the voice that described the characteristics of the product in the body copy, bypassing other voices that intervened in other parts of the advertisement, such as in the introduction—where the problematic situation is presented or dramatized—or the message ending—where call to action usually takes place.

The previous inter-codifier reliability was tested using Cohen's Kappa [40], which showed a variation between 0.811 and 0.970, calculated with SPSS (version 17). Specifically, the variable Type of Endorser reached a value of k=0.970 and Type of Endorsement reached k=0.811. This high level of agreement in such a large universe (10,566) is explained by the fact that the operationalisation of variables is based on background literature and involved little difficulty for the two coders. The variable which caused more discrepancy was Type of Endorsement in the coding of the third attribute "Both" since both modalities were not detected correctly within a message. Therefore, to solve the few discrepancies detected, a third work 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 the value k=1 for all variables. Additionally, any crossed-data of the coded variables have been submitted to relevant statistical significance tests using nonparametric χ^2 analysis.

RESULTS

The data for frequency of broadcast evidence an inverse correlation with the audience ratings of the three stations under study. Therefore, the radio station with the highest ratings—Cadena Ser—broadcasts less DS advertising (8.5%), while the radio station with the lowest levels of the sample–Onda Cero—broadcasts more DS radio spots (63.1%). On the other hand, Figure 1 shows the frequency of DS radio spots disaggregated by month and incorporates the relative percentage of each one within the overall advertising discourse. The results show a remarkable concentration during the months before summer: 31.4% of DS advertising takes place during the months of May, June and July. After August's structural drop in advertising investment, the trend recovers in September and continues to rise, reaching its maximum broadcasting level in November with 10.8% of overall DS advertising.

[Insert Figure 1 here]

In this initial descriptive approach, the variable Advertiser should be given special attention as the results show an oligopolistic reality which, in some cases, borders on the monopoly. The presence of DS in full-service radio stations can be attributed to only 14 companies. Pharma OTC alone is the brand responsible for 80% of radio spots of this type of product, followed by Bioserum which hardly reaches 8.5% and Laboratorios ERN with 4%. A further six brands show a very low presence of DS advertising, in between 3% and 0%—Actafarma: 2.8%; Biodes: 1.7%; Fernández Canivell: 1.6%; Novartis: 0.9%; Enervit Nutrition: 0.5%; and Laboratorios Ynsadiet: 0.1%). And, finally, the presence of the remaining five brands is hardly representative since, between them, they only provide 10 of the 10,566 radio spots.

[Insert Table 1 here]

With regards to the presence of endorsers in DS radio spots, the first result shows that all advertising of this type of product uses some kind of endorser rather than other advertising resources—for example, dramatization or fiction. The most widely used type of endorser is the Anonymous spokesperson, reaching 60% (6,336) of the total (10,566). Celebrities are the most frequent type of endorser identified by name and/or profession, with 25% (2,604), followed by health Experts with 14% (1,457). Table 1 disaggregates the relationship between the variables Type of endorser and Time slot. The results show that the highest concentrations are reached in the Morning—considered prime-time because it has the highest audience levels—and Midday time slots.

[Insert Table 2 here]

Regarding the placement of a radio spot within an advertising block, the results in Table 2 show a reasonably homogeneous distribution of the presence of the different types of endorsers among the possibilities of the Position variable. In any case, it is worth noting that when a radio spot is broadcast in the First place, just after the editorial contents, it is usually the voice of a Celebrity (25.5%) or Typical consumer (27.2%) that can be heard. On the other hand, positions considered less relevant by advertisers, those included in Other, feature Anonymous spokespersons (26.2%) and Experts (25.1%).

[Insert Table 3 here]

Table 3 introduces the variable Type of endorsement and the results show that nearly all Anonymous spokespersons (99.5%) use Presentation as an advertising resource to describe the product—for example, "Alertin relieves nasal congestion and eye itchiness caused by allergies without causing drowsiness". On the other hand, the use of Testimonial messages is a lot more frequent when radio spots feature Celebrities—for example, "Hi there, I'm Antonio Resines. And, well, as an actor I need to have a good memory. ¿How do I do this? I take Dememory. Dememory helps me to concentrate and memorise better"—or Typical consumers—for example, "I'm Carlos, 42. The change of seasons really affects me. It weakens my defences and I develop a cough and congestion. My pharmacist recommended Inmunofarma. Inmunofarma boosts my defences so I can carry on with my life"—while Experts generally combine both types of resources (55.3%), first describing the product and then recommending it based on their own experience as consumers or in the style of a medical prescription, including how to use the product and dosage instructions—for example, "[Doctor]: Yes, yes, of course, you have to prevent joint deterioration, you have to feed your joints. In cases like this, I recommend taking Flexium Articulaciones, a dietary supplement that protects joints and keeps bones healthy. Take two capsules of Flexium in the morning and forget the discomfort."

DISCUSSION

The main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to ascertain its compliance with current legislation and to determine the characteristics of endorsements. The results, consistent with previous studies [28] show that the Anonymous Voiceover is the most prevalent endorser (60%). However, 40% of health-related radio spots broadcast throughout 2017 use certain endorsers which are not allowed by the European Directive and Spanish laws, such as health professionals, celebrities

or well-known personalities, or real or alleged patients who act as consumers of DS. We consider the term "patient" inappropriate and confusing in the context of DS consumption, since it may lead listeners to believe that this type of products—which are not drugs—have medical properties. This is the reason why we opt for using "typical consumer" instead of "patient" in this work. It is worth noting that 25% of these spots feature Celebrities even though previous research has shown that this type of endorser has very little presence on the radio medium [17]. The underuse of Celebrities in radio spots is due to the characteristics of radio communication which cannot exploit the visual potential and appeal of famous personalities. Nevertheless, their high presence in radio advertising of DS may stem from advertisers' belief that Celebrities increase the effectiveness of advertisements [27, 41].

The fact that all DS spots broadcast on radio use the figure of endorsers reinforces the peripheral route to persuasion [19] which focuses on factors related with the credibility of the source. More specifically, the appeal of actors and actresses, the trustworthiness of renowned journalists and opinion leaders and the expertise of physicians seem to be the elements preferred by advertisers, who make frequent use of them in DS radio endorsements. Additionally, nearly half (42.2%) of testimonial type DS radio spots are the personal experiences and confessions of celebrities regarding their use or consumption of the product, who then invite listeners to follow their example in order to enjoy the same results. More than half of the cases (55.3%) combine a technical description of the product with the expert recommendation of a physician or professional who prescribes the advertised brand as the definitive solution for the health problems of listeners. This is done in the first person to reinforce the veracity of the endorsement [39] since physicians are considered health information experts and are perceived by consumers as a credible and trusted source [41]. Another of the analysed variables that yields significant results is the position where the DS radio spot is placed in the whole advertising block. The first position, broadcast just after the

editorial contents, has higher listening potential since listeners are still paying attention to the news or to the programme. Well, for that first radio spot in the advertising block, advertisers tend to choose celebrities. This fact further reinforces the idea that celebrities as endorsers have a special role in advertising this type of products, as shown in previous studies [29] mainly because consumers pay more attention to advertisements featuring celebrities and perceive them to be more trustworthy [27].

On the other hand, most radio spots voiced by endorsers are broadcast during the morning time slot, which has the highest audience levels and advertising volume. Nevertheless, it is surprising that the station with the highest number of listeners (Cadena Ser) broadcasts far fewer radio spots (893) than the rest of stations, especially when compared with the station with the lowest audience (Onda Cero) which, however, broadcasts the highest number of DS radio spots (6,668). It is also worth noting that although only 14 companies advertise DS on the radio medium, one of them is solely responsible for 80% of these spots. It would be interesting to further analyse these results in order to understand the factors leading to this situation.

Implications in Public and Health Policy

The results of this research entail several implications for public and health policy that should be taken into account by the different stakeholders involved. Advertisers should be required to comply with existing legislation and develop higher levels of responsibility towards consumers since the illicit use of endorsers in DS advertising is evidenced by data. Knowledge and application of the legal and ethical aspects involved in advertising is required from both the advertiser and collaborating agency. Therefore, both must implement self-regulatory mechanisms when creating the advertisement, thus avoiding revisions after its broadcast or publication.

But this unethical behaviour is also the consequence of other factors, such as a lack of monitoring and control by public administrations and the inefficiency of the Spanish self-regulatory system, as established in previous works [44, 45, 48, 49]. In fact, although health-related advertising is notorious for accumulating the highest percentage of ceased advertising, the number of complaints keeps rising every year while the commitment of advertisers to withdraw the offending advertisement is often not put into practice, which indicates that the Spanish self-regulatory association is failing to manage effectively the continuing abuses of repeat offenders [46, 47]. Therefore, the defence of consumer rights demands the development of stricter health policies concerning DS advertising and ethical behaviour. Improving the performance and effectiveness of the agencies in charge of DS advertising regulation requires the implementation of monitoring and control programmes as well as the establishment of stricter sanctions for repeat offenders. But above all, the application of advertising complaint resolutions must be compulsory rather than voluntary, as it currently is.

The media are also responsible for disseminating messages that are illicit, dishonest or untruthful. Pre-clearance systems for health-related advertising are the best solution to prevent illicit messages from reaching the audience, and making their implementation compulsory and legally binding for media owners -and not merely as a voluntary decision in the framework of media self-regulation or media accountability- would be an effective way to protect consumers. It is also essential that public personalities—who have influential power as opinion leaders—are more respectful when accepting to participate as endorsers in advertising, as this requires an understanding of the legal parameters involved [20]. Their lack of knowledge regarding the unlawfulness of the presence of endorsers in DS advertising does not release them from their responsibility towards consumers. Actors and actresses—well-known personalities of professional standing—lend their voices and social appeal to endorse DS in radio spots; however, it is worrying that reputable radio journalists also take

part in this practice, against the ethical code of their sector [37]. Furthermore, endorsements of this nature on topics outside their area of expertise may mislead consumers [42] and would constitute a further breach of law. Therefore, the ban of celebrities in DS advertising must be extended to other products which may put at risk the health or economy of consumers, such as food, alcohol or sports betting.

Finally, given the lack of knowledge and confusion of consumers regarding DS and their publicity [11], educational campaigns developed by public administrations on the characteristics and nature of this type of products are one of the best tools to promote the empowerment of audiences in relation to their rights, and when and how to complain. Greater knowledge and awareness would increase the number of complaints received by the self-regulatory system which, at the moment, is practically non-existent [45, 47].

Limitations and Future research

The main limitation of this research is the choice of the radio medium and, in particular, of full-service radio stations, so that future research could widen the scope of study to include other types of stations—for example, music radio stations—with different audiences. It would also be interesting to compare the presence of endorsers in DS advertising with their presence in other types of mass media—television, press and magazines—and with DS advertising in other countries in order to understand the situation and circumstances of the same subject of study in different geographical areas.

A further limitation has to do with the fact that the present study has focused on the presence of endorsers—a limitation established by the law—and type of endorsement. Therefore, future studies could analyse the correlation between endorsers and the different type of claims—whether explicit, implied or health-related—and whether the contents are misleading, as investigated in previous research [29]. The analysis of DS radio spots indicates

that many of the endorsers used—in some cases fake physicians—and a significant number of claims are misleading and entail a breach of current legislation, and these findings merit further research and verification. Additionally, at an experimental level, the effects on recipients of DS advertising voiced by different endorsers in various types of media also provides a relevant line of further research. And it would also be interesting to compare the effects of different endorsers depending on the type of endorsement and pronoun used: presentation and testimonial, third and first person, respectively.

The field of radio as a communication medium provides many opportunities for future research. Thus, an analysis of the process undertaken by radio stations from the moment they receive a petition to broadcast advertising until it actually reaches the audience, would provide information on the existence of filters or protocols—a pre-clearance system—to revise the contents and format of advertisements and their compliance with law. This research could be supplemented with in-depth interviews to analyse the knowledge of radio owners concerning content limitations and allowed formats of DS radio spots, their level of responsibility towards the audience and the existence or lack of an editorial line that would answer for the observed broadcasting differences between the three analysed stations regarding this type of products.

CONCLUSION

Although the presence of the typical consumer is very low in DS radio spots, that of celebrities is significantly high considering that this type of endorser is hardly used in the medium. Therefore, it can be concluded that celebrities and experts are identified as the endorsers most frequently used by advertisers in DS advertising. In this regard, the high presence and use of illicit endorsers not allowed by law for the promotion of health-related products is a cause for serious concern. Current legislation on DS advertising regulates the

presence of some types of endorsers, and when the law is breached the advertiser is solely responsible for the illicit endorsement. However, due to the social influence and potential persuasion power of certain endorsers—celebrities, opinion leaders or health professionals—the social responsibility towards message recipients must be extended to media owners and spokespeople. It is necessary for policy makers to fill this loophole in current legislation worldwide by also placing responsibility on the other stakeholders involved—i.e. the media and endorsers—in order to protect consumers against illicit health-related advertising, as in the case of DS.

Public administrations and self-regulatory authorities must apply strict monitoring and control mechanisms, as well as stronger sanctions, to DS adverting to dissuade advertisers from further breaches of the law and protect consumers. In the case of the EU, it seems essential to supplement the current regulatory legislation on DS advertising with an action plan and common framework for sanctions so that government policy makers of the member states can protect consumers' health from the potentially harmful effects of DS consumption, which is often promoted through bad advertising practices.

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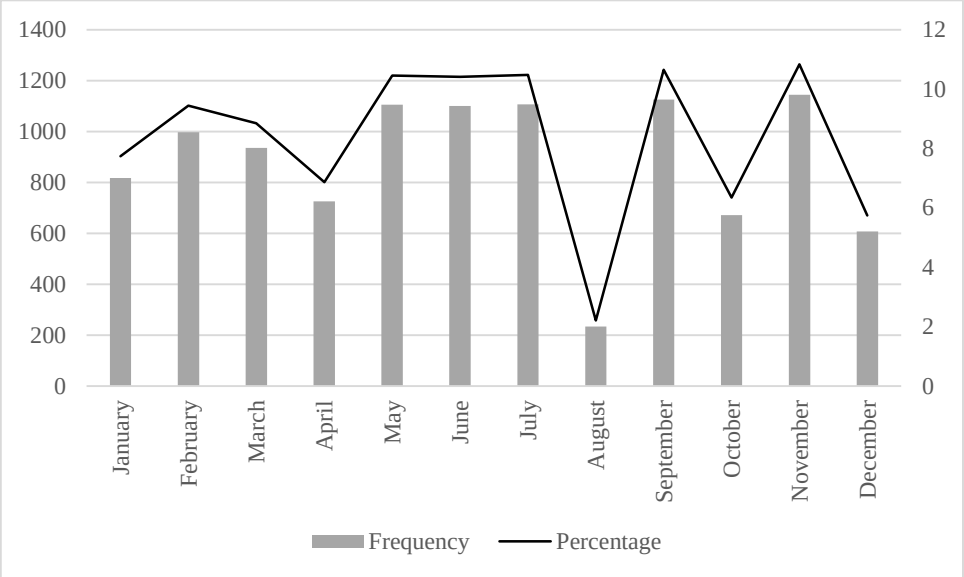

Fig. 1. Frequency and percentage of DS radio spots by month
Source: Authors' own composition.

Table 1.
Type of endorser by Time slot.

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
Early Morning	3	0.2	310	11.9	1	.6	288	4.5	602	5.7
Morning	593	40.7	883	33.9	37	21.9	2,552	40.3	4,065	38.5
Midday	573	39.3	445	17.1	55	32.5	1,383	21.8	2,456	23.2
Evening	137	9.4	430	16.5	48	28.4	1,162	18.3	1,777	16.8
Night	151	10.4	536	20.6	28	16.6	951	15.0	1,666	15.8
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and Time slot; χ^2: 663.118; Significance: 0.001

Table 2.
Type of endorser by position

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
First	321	22.0	663	25.5	46	27.2	1,349	21.3	2,379	22.5
Second	228	15.6	430	16.5	17	10.1	1,102	17.4	1,777	16.8
Penultimate	209	14.3	392	15.1	26	15.4	894	14.1	1,521	14.4
Last	333	22.9	605	23.2	38	22.5	1,330	21.0	2,306	21.8
Other	366	25.1	514	19.7	42	24.9	1,661	26.2	2,583	24.4
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and relative position; χ^2: 61.613; Significance: 0.001

Table 3.
Type of endorser by type of endorsement

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
Presentation	455	31.2	607	23.3	0		6,305	99.5	7367	69.7
Testimonial	197	13.5	1,100	42.2	169	100.0	0		1,466	13.9
Both	805	55.3	897	34.4	0		31	0.5	1,733	16.4
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and type of endorsement; χ^2: 8194.925; Significance: 0.001

The Endorsers' Presence on Regulation and Endorsements in Dietary Supplements' Advertising on Spanish Radio

ABSTRACT

Healthy lifestyles provide a market niche for products offering health benefits in a context where consumers have a misconception of the characteristics and functions of dietary supplements (DS). Due to an increase of endorsers' advertising persuasion, their presence is limited and, in some cases, forbidden. The main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to verify its compliance with current legislation and determine the endorsements' characteristics. Specifically, this paper analyses the quantity, frequency, placement and endorsement type of DS spots on full-service radio stations. Content analysis of the totality of radio spots broadcast throughout the year 2017 is conducted, deriving a corpus of 165 different radio spots belonging to the product category of dietary supplements, broadcast a total of 10,566 times. The results show that 40% of radio spots use endorsers not allowed by law, such as health care professionals, typical consumers and celebrities. The latter have an unusually high presence in DS radio advertising, with one out of four spots featuring celebrities or opinion leaders, including journalists and radio hosts as well as a frequent use of testimonial endorsements. Implications for health and public policy are made.

Keywords: Advertising Endorsers; Health Policy; Radio Advertising; Regulation;

INTRODUCTION

Health cannot be understood as the absence of disease or infirmity but rather as a state of complete physical, mental and social wellbeing [1]. In advanced societies, over recent years,

the idea of achieving and maintaining a quality of life that allows people to live more and better has meant the development of a market niche for a long list of products and services aimed at improving people's health. The ever-increasing modern style of self-care which has flourished in developed countries promotes concepts such as self-medication [2] and the medicalisation of food, and commercial strategies geared towards establishing a direct relationship between food and health [3]. However, adopting a healthy lifestyle implies efforts many people are not willing to make, hence the search for quick easy means to obtain similar results. Modern culture is attracted to 'magic bullets' as an antidote for lifestyles choices [4]. In this social context, the regulation, consumption and advertising of dietary supplements (DS) are generating great controversy and have become the focal point of academic and scientific research [5, 6, 7].

For many different reasons [2, 7] people use DS as an alternative to conventional medical treatments [8]. However, their inadequate or excessive use can cause serious damage to the health of consumers—including organ damage from inherent toxicity, interactions, or product contamination—and increases the number of hospital admissions and the attendance rate at emergency wards [5, 9, 10]. On the other hand, consumers are not well informed about the safety and efficiency of DS [8, 9]. In fact, according to a survey conducted by a consumer organisation [11] most Spanish people believe that the advertised benefits of DS involve no side effects (71.8%) and that the products have been analysed and authorised by the health authorities (83.7%). Spaniards also believe that DS prevent disease (57.9%) or cure illnesses in the same way as medicine, but that they are more inoffensive and natural (35%). Additionally, the fact that DS are sold in pharmacies—and resemble medication in terms of packaging and presentation—leads consumers to equate the scientific guarantee and effectiveness of both types of products.

In Spain, 30% of consumers take some type of dietary supplement [12]. Although there is little scientific evidence that proves their safety and benefits [6], DS are usually presented as a natural alternative to the chemical substances used in medication. However, natural is not always synonymous with harmless [13]. The consumption of DS results in economic loss to consumers who spend a lot of money on products that do not fulfil their promises. It also poses a risk to human health since many consumers take these products instead of following medical advice, treatment and therapy. In fact, some cancer patients have died after being treated with OTC products instead of seeking and following the advice of specialised physicians [4]. For these reasons and on public health grounds, the Food and Drug Administration justifies the ban on unverified health claims [14].

Advertising plays a prominent role in the demand and consumption of DS. Whether directly or indirectly, many advertisements encourage the consumption of DS instead of medicine, and the practice of self-care instead of seeking the advice of a health care professional [4]. It is remarkable that 81% of this type of advertising contains statements on disease prevention, including the most serious illnesses such as tumoral and liver diseases and cancer [15]. And advertisers draw on advertising strategies that include endorsers as an element of effective persuasion.

There are different mechanisms in advertising used to imbue brands with personality, i.e. to personify the product [16, 17]. The most widely used classification distinguishes between: (1) celebrities; (2) typical consumers; (3) professional experts; and (4) company spokespeople. The presence of endorsers in advertising has received the attention of researchers from many different fields, in many cases to demonstrate that their inclusion increases the effectiveness of the advertising message [16, 18]. According to the Elaboration Likelihood Model (ELM) of persuasion, endorsers are a peripheral cue with influencing power on the attitude of recipients and can, therefore, increase advertising efficiency [19]. If

recipients are confident that an expert source will be willing to provide accurate information because of his or her high trustworthiness, they may forgo the effortful task of scrutinising the message and unthinkingly accept the conclusion as valid [43].

Findings from previous research on health-related advertising indicate that expert endorsers—pharmacists and physicians—provoke more favourable changes in consumer attitudes than celebrities and typical consumers [25]. Similarly, experts yield better responses than their celebrity counterparts, who are not considered an effective or suitable cue for the diffusion of prescription drug information when targeting consumers with medical conditions [26]. Consumers' attitude towards the advertisement is more positive when endorsed by an expert or celebrity rather than a non-celebrity [41]. However, in the case of dietary supplements, celebrity endorsers tend to be more effective than experts in terms of consumer ratings for advertising liking and believability [27]. On the other hand, expert endorsements and consumer testimonials are biased and may mislead consumers when endorsers are voicing opinions outside their area of expertise [42].

Due to their persuasive potential endorsers are usually highly regulated by public administrations. In this regard, Kertz and Ohanian argue that the effective use of endorsements demands an understanding of the legal parameters imposed [20]. Thus, an endorsement is defined as any kind of advertising message that reflects the opinions, beliefs, findings or experiences of a party other than the sponsoring advertiser, who consumers are likely to believe [21].

Spain does not have a specific legal framework that regulates the use of endorsers in advertising. Nevertheless, regulation does exist for the advertising of products with alleged health benefits—with the exception of over-the-counter medicines (OTC) which have their own legislation. This type of products includes beverages, food, beauty and personal care products, weight loss products and food supplements. The Royal Decree 1907/1996, of 2

August, on the advertising and promotion of commercial products, activities or services with intended health purposes in Article 4 [22]—on the prohibition and limitations of advertising—bans the use of endorsements attributed to health care professionals, celebrities or well-known personalities, or to real or alleged patients, as a means to induce consumption. Furthermore, Article 5 prohibits health care professionals from using their name, profession, position or employment in advertising that promotes preventive, therapeutic, rehabilitation or any other type of health-related benefit. It also prohibits any type of advertising that includes medical diagnoses, prognoses or prescriptions, whether real or alleged, on television, radio or any other medium of dissemination or communication.

On the other hand, DS are a kind of food and subject to Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods, which stablishes in Article 12 that recommendations of individual doctors or health professionals and other associations shall not be allowed [23] Spain, the transposition of this Directive led to Law 17/2011, of 5 July, on food safety and nutrition [24], which establishes in Article 44 the prohibition of endorsements from science or health professionals, real or fictional, or from real or alleged patients, as a means to induce consumption, as well as the suggestion of a health or scientific guarantee in food advertising.

One of the main lines of research in health-related advertising focuses on the effects of endorsers in order to demonstrate the effectiveness of personification as a strategy, and how it influences the attitude of the recipient depending on the type of person who endorses the product [25, 26, 27]. Attention has also been given to the different types of endorsers used in direct to consumer (DTC) prescription drug advertisements [28] on television and in DS magazines [29]. On the other hand, television [28, 30, 31, 32] and print [29, 33, 34] are the preferred types of media for the analysis of health-related advertising, and there seems to be a lack of work on the presence of endorsers in health-related radio advertising.

Based on previous research, the main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to verify its compliance with current legislation and determine the endorsements' characteristics. More specifically, this paper aims to analyse the quantity, frequency, placement and endorsement type of DS spots on full-service radio stations. The radio medium has been chosen because it has the second largest audience after television with more than 26,878,000 daily listeners [35] in Spain and according to a recent sociological report by Metroscopia [36], it is the most trustworthy source of information for 82% of Spanish people, followed by the Internet (80%), newspapers (55%) and television (51%).

MATERIALS AND METHODS

The methodology chosen to develop this work follows a quantitative and multistage approach based on content analysis. This enables the objective and systematic description of the contents of the radio spots broadcast throughout 2017 on full-service radio stations in Spain, since the programming´s contents are based on news and current affairs. The selection of the stations followed two criteria: national coverage and Spanish-language broadcasting. The stations with the highest daily number of listeners are: Cadena Ser (4,317,000), Cadena Cope (2,785,000) and Onda Cero (1,898,000) according to data from the Estudio General de Medios (EGM) [35].

The data analysed was obtained 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, dietary supplements belong to the non-medicine 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. Following this selection

criteria, the final corpus is composed of 10,566 radio spots (165 without repetitions). It was decided to incorporate the accumulated frequencies of broadcast due to the importance of supplementing the content analysis specific to each radio spot with the weight each one has within the overall advertising discourse. This provides the opportunity to work with the complete universe of DS radio spots rather than with a sample. In this way it is possible to avoid the statistical bias and margins of error inherent to the elaboration process of any statistical sample. The complete text transcription of each one of the 165 spots, broadcast a total of 10,566 times, was undertaken for its subsequent analysis and coding by two trained coders, according to the following variables:

(1) Radio Station: Cadena Ser, Cadena Cope, Onda Cero.

(2) Advertiser.

(3) Month.

(4) Time Slot (Asociación para la Investigación de Medios de Comunicación, 2017): Early Morning (00:00h-05:59h), Morning (06:00h-11:59h), Midday (12:00h-15:59h), Evening (16:00h-19:59h) and Night (20:00h-23:59h).

(5) Position: position of the radio spot in the advertising block. It can be: First; Second; Penultimate; Last; Other.

(6) Type of Endorser [28]: Expert; Celebrity; Typical consumer; Anonymous spokesperson; None.

(7) Type of Endorsement [37, 38, 39]: (1) Presentation: in a co-presentational form using the third person and acting as a spokesperson or anonymous voiceover, the endorser refers to the brand or describes the product via a descriptive message with low or without involvement; (2) Testimonial: in an explicit form using the first person, the description of the characteristics or benefits of the product is based on the positive experience of the endorser who shares his/her consumer satisfaction with the

target audience. In other cases, a professional expert or typical consumer recommends the product based on his/her knowledge as a specialist in the field or consumption experience, as the case may be. Therefore, in both cases, the level of involvement is high. (3) Both: sometimes an endorsement may include a testimonial or recommendation and the description of the product, using both types of pronouns: first and third person; (4) Others.

To decide the type of endorser and endorsement, the criterion used was to select the voice that described the characteristics of the product in the body copy, bypassing other voices that intervened in other parts of the advertisement, such as in the introduction—where the problematic situation is presented or dramatized—or the message ending—where call to action usually takes place.

The previous inter-codifier reliability was tested using Cohen's Kappa [40], which showed a variation between 0.811 and 0.970, calculated with SPSS (version 17). Specifically, the variable Type of Endorser reached a value of k=0.970 and Type of Endorsement reached k=0.811. This high level of agreement in such a large universe (10,566) is explained by the fact that the operationalisation of variables is based on background literature and involved little difficulty for the two coders. The variable which caused more discrepancy was Type of Endorsement in the coding of the third attribute "Both" since both modalities were not detected correctly within a message. Therefore, to solve the few discrepancies detected, a third work 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 the value k=1 for all variables. Additionally, any crossed-data of the coded variables have been submitted to relevant statistical significance tests using nonparametric χ^2 analysis.

RESULTS

The data for frequency of broadcast evidence an inverse correlation with the audience ratings of the three stations under study. Therefore, the radio station with the highest ratings—Cadena Ser—broadcasts less DS advertising (8.5%), while the radio station with the lowest levels of the sample–Onda Cero—broadcasts more DS radio spots (63.1%). On the other hand, Figure 1 shows the frequency of DS radio spots disaggregated by month and incorporates the relative percentage of each one within the overall advertising discourse. The results show a remarkable concentration during the months before summer: 31.4% of DS advertising takes place during the months of May, June and July. After August's structural drop in advertising investment, the trend recovers in September and continues to rise, reaching its maximum broadcasting level in November with 10.8% of overall DS advertising.

[Insert Figure 1 here]

In this initial descriptive approach, the variable Advertiser should be given special attention as the results show an oligopolistic reality which, in some cases, borders on the monopoly. The presence of DS in full-service radio stations can be attributed to only 14 companies. Pharma OTC alone is the brand responsible for 80% of radio spots of this type of product, followed by Bioserum which hardly reaches 8.5% and Laboratorios ERN with 4%. A further six brands show a very low presence of DS advertising, in between 3% and 0%—Actafarma: 2.8%; Biodes: 1.7%; Fernández Canivell: 1.6%; Novartis: 0.9%; Enervit Nutrition: 0.5%; and Laboratorios Ynsadiet: 0.1%). And, finally, the presence of the remaining five brands is hardly representative since, between them, they only provide 10 of the 10,566 radio spots.

[Insert Table 1 here]

With regards to the presence of endorsers in DS radio spots, the first result shows that all advertising of this type of product uses some kind of endorser rather than other advertising resources—for example, dramatization or fiction. The most widely used type of endorser is the Anonymous spokesperson, reaching 60% (6,336) of the total (10,566). Celebrities are the most frequent type of endorser identified by name and/or profession, with 25% (2,604), followed by health Experts with 14% (1,457). Table 1 disaggregates the relationship between the variables Type of endorser and Time slot. The results show that the highest concentrations are reached in the Morning—considered prime-time because it has the highest audience levels—and Midday time slots.

[Insert Table 2 here]

Regarding the placement of a radio spot within an advertising block, the results in Table 2 show a reasonably homogeneous distribution of the presence of the different types of endorsers among the possibilities of the Position variable. In any case, it is worth noting that when a radio spot is broadcast in the First place, just after the editorial contents, it is usually the voice of a Celebrity (25.5%) or Typical consumer (27.2%) that can be heard. On the other hand, positions considered less relevant by advertisers, those included in Other, feature Anonymous spokespersons (26.2%) and Experts (25.1%).

[Insert Table 3 here]

Table 3 introduces the variable Type of endorsement and the results show that nearly all Anonymous spokespersons (99.5%) use Presentation as an advertising resource to describe the product—for example, "Alertin relieves nasal congestion and eye itchiness caused by allergies without causing drowsiness". On the other hand, the use of Testimonial messages is a lot more frequent when radio spots feature Celebrities—for example, "Hi there, I'm Antonio Resines. And, well, as an actor I need to have a good memory. ¿How do I do this? I take Dememory. Dememory helps me to concentrate and memorise better"—or Typical consumers—for example, "I'm Carlos, 42. The change of seasons really affects me. It weakens my defences and I develop a cough and congestion. My pharmacist recommended Inmunofarma. Inmunofarma boosts my defences so I can carry on with my life"—while Experts generally combine both types of resources (55.3%), first describing the product and then recommending it based on their own experience as consumers or in the style of a medical prescription, including how to use the product and dosage instructions—for example, "[Doctor]: Yes, yes, of course, you have to prevent joint deterioration, you have to feed your joints. In cases like this, I recommend taking Flexium Articulaciones, a dietary supplement that protects joints and keeps bones healthy. Take two capsules of Flexium in the morning and forget the discomfort."

DISCUSSION

The main objective of this work is to analyse the presence of endorsers in DS advertising on Spanish radio in order to ascertain its compliance with current legislation and to determine the characteristics of endorsements. The results, consistent with previous studies [28] show that the Anonymous Voiceover is the most prevalent endorser (60%). However, 40% of health-related radio spots broadcast throughout 2017 use certain endorsers which are not allowed by the European Directive and Spanish laws, such as health professionals, celebrities

or well-known personalities, or real or alleged patients who act as consumers of DS. We consider the term "patient" inappropriate and confusing in the context of DS consumption, since it may lead listeners to believe that this type of products—which are not drugs—have medical properties. This is the reason why we opt for using "typical consumer" instead of "patient" in this work. It is worth noting that 25% of these spots feature Celebrities even though previous research has shown that this type of endorser has very little presence on the radio medium [17]. The underuse of Celebrities in radio spots is due to the characteristics of radio communication which cannot exploit the visual potential and appeal of famous personalities. Nevertheless, their high presence in radio advertising of DS may stem from advertisers' belief that Celebrities increase the effectiveness of advertisements [27, 41].

The fact that all DS spots broadcast on radio use the figure of endorsers reinforces the peripheral route to persuasion [19] which focuses on factors related with the credibility of the source. More specifically, the appeal of actors and actresses, the trustworthiness of renowned journalists and opinion leaders and the expertise of physicians seem to be the elements preferred by advertisers, who make frequent use of them in DS radio endorsements. Additionally, nearly half (42.2%) of testimonial type DS radio spots are the personal experiences and confessions of celebrities regarding their use or consumption of the product, who then invite listeners to follow their example in order to enjoy the same results. More than half of the cases (55.3%) combine a technical description of the product with the expert recommendation of a physician or professional who prescribes the advertised brand as the definitive solution for the health problems of listeners. This is done in the first person to reinforce the veracity of the endorsement [39] since physicians are considered health information experts and are perceived by consumers as a credible and trusted source [41]. Another of the analysed variables that yields significant results is the position where the DS radio spot is placed in the whole advertising block. The first position, broadcast just after the

editorial contents, has higher listening potential since listeners are still paying attention to the news or to the programme. Well, for that first radio spot in the advertising block, advertisers tend to choose celebrities. This fact further reinforces the idea that celebrities as endorsers have a special role in advertising this type of products, as shown in previous studies [29] mainly because consumers pay more attention to advertisements featuring celebrities and perceive them to be more trustworthy [27].

On the other hand, most radio spots voiced by endorsers are broadcast during the morning time slot, which has the highest audience levels and advertising volume. Nevertheless, it is surprising that the station with the highest number of listeners (Cadena Ser) broadcasts far fewer radio spots (893) than the rest of stations, especially when compared with the station with the lowest audience (Onda Cero) which, however, broadcasts the highest number of DS radio spots (6,668). It is also worth noting that although only 14 companies advertise DS on the radio medium, one of them is solely responsible for 80% of these spots. It would be interesting to further analyse these results in order to understand the factors leading to this situation.

Implications in Public and Health Policy

The results of this research entail several implications for public and health policy that should be taken into account by the different stakeholders involved. Advertisers should be required to comply with existing legislation and develop higher levels of responsibility towards consumers since the illicit use of endorsers in DS advertising is evidenced by data. Knowledge and application of the legal and ethical aspects involved in advertising is required from both the advertiser and collaborating agency. Therefore, both must implement self-regulatory mechanisms when creating the advertisement, thus avoiding revisions after its broadcast or publication.

But this unethical behaviour is also the consequence of other factors, such as a lack of monitoring and control by public administrations and the inefficiency of the Spanish self-regulatory system, as established in previous works [44, 45, 48, 49]. In fact, although health-related advertising is notorious for accumulating the highest percentage of ceased advertising, the number of complaints keeps rising every year while the commitment of advertisers to withdraw the offending advertisement is often not put into practice, which indicates that the Spanish self-regulatory association is failing to manage effectively the continuing abuses of repeat offenders [46, 47]. Therefore, the defence of consumer rights demands the development of stricter health policies concerning DS advertising and ethical behaviour. Improving the performance and effectiveness of the agencies in charge of DS advertising regulation requires the implementation of monitoring and control programmes as well as the establishment of stricter sanctions for repeat offenders. But above all, the application of advertising complaint resolutions must be compulsory rather than voluntary, as it currently is.

The media are also responsible for disseminating messages that are illicit, dishonest or untruthful. Pre-clearance systems for health-related advertising are the best solution to prevent illicit messages from reaching the audience, and making their implementation compulsory and legally binding for media owners -and not merely as a voluntary decision in the framework of media self-regulation or media accountability- would be an effective way to protect consumers. It is also essential that public personalities—who have influential power as opinion leaders—are more respectful when accepting to participate as endorsers in advertising, as this requires an understanding of the legal parameters involved [20]. Their lack of knowledge regarding the unlawfulness of the presence of endorsers in DS advertising does not release them from their responsibility towards consumers. Actors and actresses—well-known personalities of professional standing—lend their voices and social appeal to endorse DS in radio spots; however, it is worrying that reputable radio journalists also take

part in this practice, against the ethical code of their sector [37]. Furthermore, endorsements of this nature on topics outside their area of expertise may mislead consumers [42] and would constitute a further breach of law. Therefore, the ban of celebrities in DS advertising must be extended to other products which may put at risk the health or economy of consumers, such as food, ~~tobacco,~~ alcohol or sports betting~~, etc~~.

Finally, given the lack of knowledge and confusion of consumers regarding DS and their publicity [11], educational campaigns developed by public administrations on the characteristics and nature of this type of products are one of the best tools to promote the empowerment of audiences in relation to their rights, and when and how to complain. Greater knowledge and awareness would increase the number of complaints received by the self-regulatory system which, at the moment, is practically non-existent [45, 47].

Limitations and Future research

The main limitation of this research is the choice of the radio medium and, in particular, of full-service radio stations, so that future research could widen the scope of study to include other types of stations—for example, music radio stations—with different audiences. It would also be interesting to compare the presence of endorsers in DS advertising with their presence in other types of mass media—television, press and magazines—and with DS advertising in other countries in order to understand the situation and circumstances of the same subject of study in different geographical areas.

A further limitation has to do with the fact that the present study has focused on the presence of endorsers—a limitation established by the law—and type of endorsement. Therefore, future studies could analyse the correlation between endorsers and the different type of claims—whether explicit, implied or health-related—and whether the contents are misleading, as investigated in previous research [29]. The analysis of DS radio spots indicates

that many of the endorsers used—in some cases fake physicians—and a significant number of claims are misleading and entail a breach of current legislation, and these findings merit further research and verification. Additionally, at an experimental level, the effects on recipients of DS advertising voiced by different endorsers in various types of media also provides a relevant line of further research. And it would also be interesting to compare the effects of different endorsers depending on the type of endorsement and pronoun used: presentation and testimonial, third and first person, respectively.

The field of radio as a communication medium provides many opportunities for future research. Thus, an analysis of the process undertaken by radio stations from the moment they receive a petition to broadcast advertising until it actually reaches the audience, would provide information on the existence of filters or protocols—a pre-clearance system—to revise the contents and format of advertisements and their compliance with law. This research could be supplemented with in-depth interviews to analyse the knowledge of radio owners concerning content limitations and allowed formats of DS radio spots, their level of responsibility towards the audience and the existence or lack of an editorial line that would answer for the observed broadcasting differences between the three analysed stations regarding this type of products.

CONCLUSION

Although the presence of the typical consumer is very low in DS radio spots, that of celebrities is significantly high considering that this type of endorser is hardly used in the medium. Therefore, it can be concluded that celebrities and experts are identified as the endorsers most frequently used by advertisers in DS advertising. In this regard, the high presence and use of illicit endorsers not allowed by law for the promotion of health-related products is a cause for serious concern. Current legislation on DS advertising regulates the

presence of some types of endorsers, and when the law is breached the advertiser is solely responsible for the illicit endorsement. However, due to the social influence and potential persuasion power of certain endorsers—celebrities, opinion leaders or health professionals—the social responsibility towards message recipients must be extended to media owners and spokespeople. It is necessary for policy makers to fill this loophole in current legislation worldwide by also placing responsibility on the other stakeholders involved—i.e. the media and endorsers—in order to protect consumers against illicit health-related advertising, as in the case of DS.

Public administrations and self-regulatory authorities must apply strict monitoring and control mechanisms, as well as stronger sanctions, to DS adverting to dissuade advertisers from further breaches of the law and protect consumers. In the case of the EU, it seems essential to supplement the current regulatory legislation on DS advertising with an action plan and common framework for sanctions so that government policy makers of the member states can protect consumers' health from the potentially harmful effects of DS consumption, which is often promoted through bad advertising practices.

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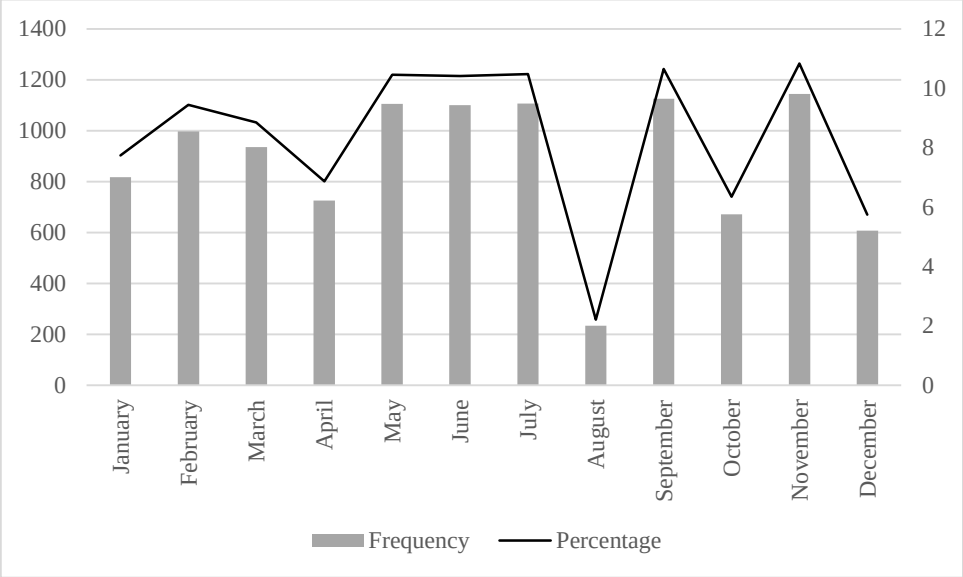

Fig. 1. Frequency and percentage of DS radio spots by month
Source: Authors' own composition.

Table 1.
Type of endorser by Time slot.

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
Early Morning	3	0.2	310	11.9	1	.6	288	4.5	602	5.7
Morning	593	40.7	883	33.9	37	21.9	2,552	40.3	4,065	38.5
Midday	573	39.3	445	17.1	55	32.5	1,383	21.8	2,456	23.2
Evening	137	9.4	430	16.5	48	28.4	1,162	18.3	1,777	16.8
Night	151	10.4	536	20.6	28	16.6	951	15.0	1,666	15.8
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and Time slot; χ^2: 663.118; Significance: 0.001

Table 2.
Type of endorser by position

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
First	321	22.0	663	25.5	46	27.2	1,349	21.3	2,379	22.5
Second	228	15.6	430	16.5	17	10.1	1,102	17.4	1,777	16.8
Penultimate	209	14.3	392	15.1	26	15.4	894	14.1	1,521	14.4
Last	333	22.9	605	23.2	38	22.5	1,330	21.0	2,306	21.8
Other	366	25.1	514	19.7	42	24.9	1,661	26.2	2,583	24.4
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and relative position; χ^2: 61.613; Significance: 0.001

Table 3.
Type of endorser by type of endorsement

	Expert		Celebrity		Typical Consumer		Anonymous Spokesperson		Total	
	n	%	n	%	n	%	n	%	n	%
Presentation	455	31.2	607	23.3	0		6,305	99.5	7367	69.7
Testimonial	197	13.5	1,100	42.2	169	100.0	0		1,466	13.9
Both	805	55.3	897	34.4	0		31	0.5	1,733	16.4
Total	1,457	100.0	2,604	100.0	169	100.0	6,336	100.0	10,566	100.0

Source: Authors' own composition.
Note: Type of endorser and type of endorsement; χ^2: 8194.925; Significance: 0.001