

INFORMING PATIENTS ABOUT FOOD SUPPLEMENTS IN ONLINE PHARMACIES AND DRUGSTORES AUTHORIZED IN ROMANIA

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Abstract

Current legislation on food supplements does not allow associating them with properties of preventing, treating or curing a human disease, which are characteristic of medicines. The aim of this paper was to investigate the extent to which this legal distinction from medicines is respected in the information provided to patients about food supplements in pharmacies and online drugstores authorized by the Ministry of Health in Romania. We used the websites of these pharmaceutical units as study materials and documentary research and content analysis as methods. In the online pharmacies and drugstores analysed, food supplements are often classified according to human disease or condition and/or organs or systems on which they act. In general, the information on food supplements is not standardized, referring in particular to identity and composition, instructions for use, properties, and benefits. The safety risks associated with the use of food supplements are not always mentioned. Herbal food supplements are often accompanied by therapeutic properties or indications, which is in breach of the applicable legislation. Online information for patients on food supplements relevant to their health is particularly important for their correct and safe use. Updating food supplement legislation, professional regulations, and pharmacist training would contribute to improving the quality of online pharmaceutical services and protecting the health of patients who access them.

Rezumat

Legislația în vigoare privind suplimentele alimentare nu permite asocierea lor cu proprietăți de prevenire, tratare sau vindecare a bolilor, care sunt caracteristice medicamentelor. Scopul lucrării de față a fost de a investiga în ce măsură este respectată această distincție legală față de medicamente în informarea pacienților despre suplimente alimentare în farmaciile și drogheriile online autorizate de Ministerul Sănătății în România. Am utilizat ca materiale de studiu paginile de Internet ale acestor unități farmaceutice, iar ca metode cercetarea documentară și analiza de conținut. În farmaciile și drogheriile online analizate, suplimentele alimentare sunt clasificate adesea după boală sau starea de sănătate și/sau după organele sau sistemele asupra cărora acționează. În general, informația privind suplimentele alimentare nu este standardizată, ea referindu-se în special la identitate și compoziție, instrucțiuni de utilizare, proprietăți și beneficii. Riscurile de siguranță asociate utilizării suplimentelor alimentare nu sunt întotdeauna menționate. Suplimentele alimentare pe bază de plante sunt adesea însoțite de proprietăți sau indicații terapeutice, ceea ce încalcă legislația aplicabilă. Informarea online a pacienților în privința suplimentelor alimentare de interes pentru sănătatea lor este deosebit de importantă pentru utilizarea lor corectă și sigură. Actualizarea legislației suplimentelor alimentare, a reglementărilor profesionale și a formării farmaciștilor ar contribui la creșterea calității serviciilor farmaceutice oferite online și la protejarea sănătății pacienților care le accesează.

Keywords: food supplements, patients, online pharmacies and drugstores

Introduction

The online environment has developed as an important source for European patients to purchase medicines, particularly those without a prescription, following the adoption of Directive 2011/62/EU. The Directive established the need for the online trade in medicines to be authorized by the competent authority designated at national level in each Member State. The Directive also stipulated that the competent authority must publish on its website a list of authorized entities, where patients can verify the legality of their activities by clicking on the common European logo displayed on the authorized websites (1). Thus, in Romania, in order to transpose the provisions of the

Directive, Law no. 266/2008 on pharmacies was amended by Law no. 160/2018. It established that the Ministry of Health is the competent Romanian authority in this field, with the powers laid down in the Directive (2). Subsequently, by Order no. 444/2019, the Minister of Health approved rules for the application of the principles of the law, including with regard to online trade in medicines (3). Therefore, in Romania, pharmacies and drugstores authorized to operate online may sell non-prescription medicines via the Internet, this activity being the responsibility of a pharmacist designated for this purpose (2, 3). However, the trade of authorized pharmacies and drugstores also includes other health products (3, 4), the largest category being food supplements, including

online. According to Directive 2002/46/EC on the approximation of the laws of the Member States relating to food supplements, “the labelling, presentation and advertising must not attribute to food supplements the property of preventing, treating or curing a human disease, or refer to such properties” (5). These provisions have been transposed into Romanian law, more specifically in Law no. 56/2021 on food supplements (6). Moreover, Regulation (EC) No 1924/2006 established that the only references to a disease in the information associated with food products may be in the form of authorized health claims referring to the reduction of disease risk (7). Compliance with all these provisions is very important, including in the online environment, so that patients can distinguish between food supplements and medicines and pharmacists can guide them in their correct use.

Numerous authors have shown that patients increasingly seek information on health and potentially useful food supplements on the Internet (8-11). Some patients do not trust advertising for food supplements (11), preferring to seek information at pharmacies, including online (12-14). However, pharmacy websites do not always provide adequate information to clearly differentiate between the clinical and commercial services they offer to patients (15). Pharmacists should be well trained in the field of food supplements in order to provide accurate information, not only about their benefits but also about their risks, including when they are associated with medication treatments (16-18). In addition, pharmacists should educate patients to prevent the purchase of food supplements from unauthorized websites, in order to avoid the health risks associated with the use of substandard or falsified products (19, 20). Patient education can be provided not only on site, but also online, primarily through pharmacy or drugstore websites, as reliable sources of information at the societal level. In fact, Regulation (EU) No 1169/2011 stipulates that the online sale of food products must be accompanied by the provision of mandatory information to potential buyers on the websites from which they can make their purchase. This information refers to: identity and composition, nutritional characteristics and properties, instructions for use, health effects, risks and consequences of inappropriate consumption (21).

In a previous paper, we showed how important it is for patients and public health to comply with European legislation and national regulations in the presentation and promotion of food supplements (22), which are now quasi-permanent on the websites of pharmacies and drugstores. In another paper, we demonstrated the need to include in pharmacy law specific rights for patients in relation to the activities of pharmacists, including the right to accurate information on health products that interest them (23). Pharmacists responsible for websites authorized by the Ministry

of Health are subject to a code of ethics, which should include specific rules for this activity, as we have already proposed in previous papers (24, 25), including to guide their professional conduct in online activities (26). We have also proposed the development of training programs in complementary medicines, including food supplements, through collaboration between the national professional association and pharmacists' employers, in order to resolve the conflict between ethics and business that exists in pharmacies in this area (27). Following on from these preoccupations, the aim of this paper was to establish the extent to which the legal distinction from medicines is respected in the information provided to patients about food supplements in pharmacies and online drugstores authorized by the Ministry of Health in Romania.

Materials and Methods

The materials used in this study were the websites of pharmacies and drugstores authorized in Romania and the information on food supplements available on these websites. The methods used were documentary research and content analysis (28).

Through documentary research, we identified the websites of pharmacies and drugstores authorized in Romania, based on the list published by the Ministry of Health (29).

Through content analysis, we identified and investigated information on food supplements on the selected websites. We systematically and objectively analysed the content of information on food supplements and identified their particularities. The objective of this analysis was to determine the extent to which the presentation of food supplements on the websites of authorized online pharmacies and drugstores complies with the legal requirements for differentiating these products from medicines. The analysis criteria included the categories of information provided online about food supplements and the way in which the information associated with food supplements was formulated, in order to distinguish them from medicines.

Results and Discussion

The list published by the Ministry of Health included the status of online retail pharmaceutical units authorized as of May 22, 2025, which we considered in our research conducted between May 22 and June 22, 2025. The list contained 165 authorized pharmaceutical units, including 17 drugstores and 148 pharmacies (29). Some of these belong to the same limited liability company (*societate cu răspundere limitată, SRL*) or joint stock company (*societate pe acțiuni, SA*) and use the same website, even though the medicines and other health products are sent to patients from different authorized locations in the country. These are the websites of the companies Cerulex

SRL, Comay SRL, Dr. Max SRL, Eco-Farm SRL, Farmacia Tei SRL, Farmalin SRL, Help Net Farma SA, Ivona Farm SRL, Lara Farm SRL, Lifestyle Pharm SRL, Proclinic SRL, Professional Farma Line SRL, Remedium Farm SRL, Ropharma SA and Spring Farm SRL (29). As a result, after removing duplicates, we retained only 92 websites from the initial list, including 8 drugstores and 84 pharmacies.

By accessing these websites, we found that 21 were not functioning, although the date declared as the start of activity was prior to the period in which we conducted the present research (29). Table I lists the companies and websites that were not functioning as of June 19, 2025, the date on which we completed our content analysis.

Table I

Non-functional websites of authorized online retail pharmaceutical units

Company name	Website authorized by the Ministry of Health (29)	Type of unit
Catena Pharma SRL	www.farmacialapretmic.ro	Drugstore
General Transcom SRL	www.eprimafarm.ro	Drugstore
VKT Brands SRL	www.drogheriemb.ro	Drugstore
Ambu-Pharm SRL	www.apothek.ro	Pharmacy
Coroana SRL	www.websales.ro	Pharmacy
Delpharma SRL	www.farmaciadelfarma.ro	Pharmacy
Eurosantis SRL	www.farmforyou.ro	Pharmacy
Farma Fontana Impex SRL	www.e-mag.ro	Pharmacy
Farmaceutica Remedia Distribution & Logistics SRL	www.farmacileremedia.ro	Pharmacy
Pharmacy Denis SRL	www.pricemed.ro	Pharmacy
Pharmacy Dovermed SRL	www.dovermedfarma.ro	Pharmacy
Pharmacy Dovital SRL	www.farmaciadovital.ro	Pharmacy
Pharmacy Elixirfarm Impex SRL	www.farmacielelixir.ro	Pharmacy
Pharmacy Iris SRL	www.farmaciaiiris.ro	Pharmacy
Farmaco-Com SRL	www.acatea.ro	Pharmacy
Nigella Farm SRL	www.farmacianigella.ro	Pharmacy
PI Pharma M&D SRL	www.hapies.ro/	Pharmacy
Proclinic SRL	www.farmaciasalvia.com	Pharmacy
Seti Impex SRL	www.farmacieieftina.ro	Pharmacy
Top Green Pharma SRL	www.farmacia1.ro	Pharmacy
Unica Farm SRL	www.farmaciamare.ro	Pharmacy

In addition, we excluded from our research nine more websites, because they were not selling food

supplements as of June 19, 2025, the date we completed our content analysis. These are indicated in Table II.

Table II

Authorized websites not selling food supplements

Unit type and name	Website authorized by the Ministry of Health (29)	Health products for sale on the website
Drugstore Digihealth SRL	www.digihealth.ro	Medicines, medical devices, cosmetic products (30)
Pharmacy Argefarm SRL	www.argefarm.ro	None (31)
Pharmacy Elscyte SRL	www.farmaciaelexa.ro	Medicines (32)
Pharmacy Faltis SRL	www.farmaciafaltis.ro	Medicines, cosmetic products (33)
Pharmacy Adriana A&G Med SRL	www.farmacielefortis.ro	None (34)
Pharmacy Geonet SRL	www.usmag.ro	None (35)
Pharmacy Hedera Helix Farm SRL	www.farmacielehedera.ro	Medicines (36)
Pharmacy Perla Warehouse SRL	www.farmaciacrisia.ro	Medical devices (37)
Pharmacy Stejara SRL	www.farmacastejara.ro	None (38)

At the end of these checks, we retained for our research only functional websites that sell food supplements. These are 4 websites of drugstores and 58 websites of pharmacies, for a total of 62 websites, on which we applied content analysis.

In general, on these websites, the health products offered for sale are classified according to their legal status, with food supplements constituting one of the categories and accompanied by specific information. On many of the websites analysed, food supplements are

classified according to human disease or condition and/or organs or systems on which they act. In our opinion, such a classification already suggests that food supplements have therapeutic properties, which are specific to medicines. We therefore included this classification as a criterion in our analysis, along with verification of the standardization of the content of information on food supplements marketed on the websites analysed. A summary of the results obtained is presented in Table III.

Table III

Food supplements on the authorized websites of drugstores and pharmacies

Websites	Classifying food supplements by human disease or condition and/or organs or systems on which they act	Standardized content of information about food supplements
Drugstores	2/4	0/4
Pharmacies	37/58	4/58

On the websites of 2 drugstores, although food supplements are not classified according to human disease or condition and/or organs or systems on which they act, some of them, especially those based on plants, are classified as medicines (39, 40). On the websites of most pharmacies, food supplements are classified according to the same criteria (41-77). On some websites, certain food supplements are even classified as medicines (58, 68, 78-87), while on other websites, certain medicines are classified as food supplements (61, 88). The websites of drugstores (39, 40, 89, 90) and most pharmacies do not present information on food supplements in a standardized format (41, 43-70, 73-85, 88, 91, 92-99). Only 6 pharmacy websites present information on food supplements in a standardized format, including specific sections on identity and composition, properties and instructions for use, benefits (42, 71, 72, 86, 87, 100), and safety risks associated with use (42, 71, 72, 86, 87). In general, these categories of information on marketed food supplements are found on all the websites analysed, but their wording is sometimes unclear and often incomplete. For many food supplements, websites with non-standardized information do not address the safety risks associated with their use. There is a significant lack of consistency in patient information in this area. Thus, only the information on some food supplements mentions certain safety risks associated with their use, such as contraindications, precautions, side effects, or interactions with medicines, both on pharmacy websites and on drug-store websites.

With regard to the wording of the information, in order to distinguish food supplements from medicines, only 2 pharmacy websites do not mention the properties or therapeutic indications associated with the food supplements they sell online (96, 100). On the

websites of drugstores and other pharmacies, some food supplements, especially herbal ones, are presented as having properties of preventing or treating human diseases, which are medicine-specific functions. It is likely that pharmacies and drugstores have taken this information from the manufacturers of the food supplements without properly evaluating it and without processing it to distinguish them from medicines. In addition, the information published on the websites of pharmacies and drugstores is often incomplete compared to that provided by manufacturers, especially with regard to the risks associated with the use of food supplements.

Several examples of food supplements manufactured in Romania, found on some of the websites analysed, may be illustrative in this regard. The food supplement Biomicin urinary soft capsules is presented by the manufacturer as a “natural antibacterial and disinfectant (antiseptic)” and is contraindicated for children under 10 years of age, pregnant and breastfeeding women, patients with gastro-duodenal ulcers and those with gastritis (101). The food supplement BiSeptol syrup is presented by the manufacturer as having “powerful antibacterial, expectorant, and soothing effects on the throat and pharynx”; it is contraindicated during pregnancy, breastfeeding, or specific allergies, and should be administered with caution to diabetics (102). It can be seen that both products are presented as having therapeutic properties, with the manufacturers also indicating the safety risks associated with their use. Table IV presents a summary of the results of our analysis of how the information published by the manufacturers was included in the presentation of these food supplements on the websites of the drugstores and pharmacies that sell them.

Table IV

Information on herbal supplements on the authorized websites

Websites	Associating food supplements with therapeutic properties/indications		Indicating safety risks associated with the use of food supplements	
	Biomicin urinary soft capsules	BiSeptol syrup	Biomicin urinary soft capsules	BiSeptol syrup
Drugstores	4/4	4/4	1/4	4/4
Pharmacies	47/47	33/34	23/47	31/34

The food supplement Biomicin urinary soft capsules is accompanied by therapeutic properties or indications on the websites of the 51 units that sell it, namely the 4 drugstores analysed (39, 40, 89, 90) and 47 of the pharmacies analysed (41-51, 53-57, 59-70, 72, 73, 75, 77-80, 83-87, 91-94, 97-99). Some of these did not publish the safety risks associated with its use,

namely 3 drugstores (40, 89, 90) and 24 pharmacies (43, 47-50, 53, 56, 57, 59, 62, 63, 66, 67, 69, 70, 80, 83-85, 91, 92, 94, 98, 99).

The food supplement BiSeptol syrup is accompanied by therapeutic properties or indications on 37 of the 38 websites that sell it, namely the 4 drugstores analysed (39, 40, 89, 90) and 33 of the pharmacies

analysed (42, 43, 45, 47, 48, 50, 51, 53, 55-57, 59, 61, 64-67, 69, 71-73, 75, 77-79, 83-85, 87, 92-94, 98). Only 1 pharmacy avoided this by reformulating the manufacturer's information (46). Only 3 pharmacies did not publish the safety risks associated with the use of this product (45, 83, 98).

Sometimes, even manufacturers publish incomplete information about their food supplements, especially with regard to the risks associated with their use. For example, the food supplement MagneFort Cardio is presented by the manufacturer as "adjuvant therapy in adults with coronary artery disease (disease of the blood vessels of the heart), in certain cardiac arrhythmias, and for the prevention of cardiac arrhythmias" (103). It can be seen that this food supplement is also associated by the manufacturer with disease prevention properties, a function specific to medicines. The manufacturer does not indicate any safety risks associated with the use of this food supplement. However, at least because of its content in dry extract of *Valeriana officinalis* L., contraindications, warnings, precautions, or overdose should be mentioned, as mentioned in association with this herbal product, included in the composition of an authorized medicine (104). But if the manufacturer of the food supplement has not mentioned them in the information associated with it, then generally neither pharmacies nor drugstores have done so on their websites. All 11 pharmacies selling this food supplement suggested or referred to disease prevention properties, but most did not include any risk associated with its use in the associated information (43, 51, 55, 64, 72, 84, 92, 97). Only 3 pharmacies provided some precautions and/or warnings related to the use of this food supplement (56, 75, 83).

The present study shows that most websites of authorized online pharmacies and drugstores in Romania do not comply with the legal requirements for distinguishing between food supplements and medicines, i.e., the obligation not to attribute to them properties for preventing, treating, or curing a human disease or to refer to such properties (6). The requirements of good pharmacy practice regarding the provision of adequate information to patients about the health products they are interested in are also not being met (105). Furthermore, we believe that the ethical obligation of pharmacists to provide quality services (106), which would involve informing patients about food supplements, both in terms of their benefits and risks, is also not respected.

In our opinion, when deciding whether to publish information on food supplements on the pharmacy or drugstore website, the pharmacist responsible should evaluate them and avoid the mistake of associating them with therapeutic properties or indications, in order to distinguish them from medicines and not mislead patients. This conduct would demonstrate the responsible pharmacist's concern to inform patients

as accurately as possible in the online environment, as he is responsible for the content of the website (2, 3). As mentioned in a previous paper, patients' right to quality pharmaceutical services also includes the right to accurate information on health products sold by pharmacists (23), which include food supplements. Moreover, Law no. 266/2008 provides that pharmaceutical care includes informing and advising patients on maintaining their health (4), to which the correct use of food supplements can contribute. Therefore, we maintain our opinion that providing clear, accurate, and complete information on all categories of health products offered online, including food supplements, should be an ethical obligation of pharmacists in order to professionally support patient autonomy and their right to obtain health benefits by accessing the necessary services and products (26).

The pharmacist in charge could include in the information accompanying food supplements a warning about the possibility that their use may lead to side effects or adverse reactions, which can be reported to the pharmacy and managed with the help of the pharmacist. We did not identify any of the websites analysed that offered the possibility to report adverse reactions to food supplements. Moreover, the right to safety in relation to the use of products sold by pharmacists is not provided for in the Code of ethics, although it is a fundamental right of European patients and its observance should be an ethical obligation, as we have previously argued (24). We reiterate our position that the provision of online pharmaceutical services should be regulated by the Code of ethics (25). It should contain provisions to ensure that patients' rights are respected, from the design of the website to the monitoring of the safety of marketed health products (26), including the reporting of suspected adverse reactions to their use. The insufficient involvement of pharmacists is caused by the ever-growing number of food supplements on the market, the lack of evidence on the effectiveness of many of them, and/or insufficient training in this area, compounded by commercial pressure from employers (27). We continue to believe that pharmacists' employers would also benefit from an ethical attitude, demonstrating social responsibility and respect for patients' vulnerability (27), for example by clearly separating professional and commercial content on websites, as suggested by other authors (14).

Furthermore, the competent authorities are not sufficiently capable of regulating and monitoring the market for food supplements, since some manufacturers market food supplements with names that suggest diseases or therapeutic properties accompanied by therapeutic indications, as we have shown in our previous research (22). Pharmacists could, even more so, consistently warn patients, including through information published online, that they should not expect therapeutic effects from food supplements and that their

use is not without risks, especially if used improperly or without the recommendation of a health professional. One solution could be to provide pharmacists with additional training on the legislation and ethics of the trade in food supplements, for example as a professional project of the Romanian College of Pharmacists.

Some authors have shown that although patients would be interested in discussing online information on food supplements with pharmacists or other health professionals (8, 12), they may not be sufficiently trained in this area or willing to do so due to practical constraints (8). However, such an opportunity should not be missed (8), but rather encouraged and exploited on an ongoing basis, including through the availability of pharmacists to communicate online on the pharmacy's website. They should have appropriate conduct and should not disconnect from patients (10), who are increasingly looking for the necessary health information and products, including food supplements, on the Internet, preferring pharmacies as a reliable source (9, 11). To maintain this status, pharmacists should provide, including online, quality information and food supplements, thereby contributing to patient education and health, as some authors have argued (13).

Other authors have pointed out that an important area of patient education on food supplements is the safety risks associated with their use, which should be covered by the advice provided by pharmacists, including online (14). Furthermore, monitoring the safety of food supplements and including information on their use in health records would contribute to improving patients' knowledge and disease management (16). Adverse reactions to food supplements (14, 16) and their interactions with medicines (17, 18) are quite common and should be covered in the training of health professionals, including pharmacists, in order to provide patients with accurate information and minimize these risks. The importance of reliable and independent sources is essential in this process (17). In Romania, the monitoring of the safety of food supplements by the competent public authorities is not regulated. However, the Romanian Food Supplements Industry Association is committed to good practice and ethical conduct, offering consumers the opportunity to report adverse reactions to food supplements on its website using a specific form (107). It would be interesting to find out to what extent consumers are aware of and use this possibility, and future research could investigate these issues related to the use of food supplements in our country.

Some authors have purchased food supplements sold online and analysed them in laboratories to determine their quality and safety in relation to the information provided. Some of them have identified falsified medicines sold as herbal supplements (19), while others have identified significantly higher doses

of active substances than those declared, posing serious risks to consumer health (20). Such research highlights the need for adequate, strict, and internationally harmonized regulations on the online trade in food supplements (19) and the information associated with them, indicating safety risks and the measures necessary to minimize them (20). We also support the adoption of such regulations in Romania and the involvement of pharmacists in monitoring the safety of food supplements on the market in our country.

In this regard, it would be necessary to amend Law no. 56/2021 on food supplements, especially since it prohibits the association of therapeutic properties in the labelling, promotion, and presentation of food supplements, but only establishes penalties for violations of these rules in the case of labelling and promotion (6). This means that the presentation of food supplements on the websites of pharmacies and drugstores as having therapeutic properties or indications cannot be sanctioned under this law. However, Government Ordinance no. 21/1992 on consumer protection prohibits the presentation of claims and indications that do not comply with the parameters characterizing the products marketed and that cannot be proven (108). We believe that the presentation on pharmacy and drugstore websites of food supplements associated with human diseases or conditions and/or accompanied by therapeutic indications or properties would fall under this offence. Therefore, it could be punished with a fine by the inspectors of the National Authority for Consumer Protection (108).

Conclusions

Pharmacies and online drugstores authorized by the Romanian Ministry of Health sell food supplements through their own websites, accompanied by information that should help patients choose products that are beneficial to their health.

Most of the websites analysed do not have standardized content regarding the food supplements they sell, which they classify by human disease or condition and/or organs or systems on which they act.

The information associated with food supplements on the websites analysed generally refers to their identity and composition, properties, method of use, and benefits. The risks and consequences of inappropriate consumption are not always indicated.

Many of the websites analysed present herbal supplements as having therapeutic properties or indications, which does not allow them to be distinguished adequately from medicines and used knowledgeably by patients.

Updating the legislation on food supplements, professional regulations, and the training of pharmacists in this area would contribute to improving the

quality of online pharmaceutical services and protecting the health of patients who access them.

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