

Characterization of the educational means and resources used by Colombian medical associations and societies

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Abstract

This article describes the means of dissemination and digital open educational resources (DOER) used by 80 Colombian medical societies. Using a document analysis of their official platforms, we identified a predominant use of networks like Facebook and YouTube, as well as a high frequency of conferences and webinars among the DOERs. However, innovative formats like podcasts and downloadable materials had poor adoption rates.

The findings evidence a partial transition toward digital medical education, with opportunities for improvement in format diversification, pedagogical innovation and accessibility for different audiences. We conclude that these entities play a key role in democratizing health knowledge. (*Acta Med Colomb* 2025; 50. DOI: <https://doi.org/10.36104/amc.2025.4757>).

Keywords: *medical societies, dissemination, social appropriation of knowledge, digital open educational resources.*

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Introduction

Medical societies and associations are essential entities in today's healthcare ecosystem, playing an essential role in coordinating biomedical research, specialized clinical practice and continuing medical education (1). Their historical origin dates back to the first professional guilds that emerged during the 16th-century European Renaissance as an institutional response to the compelling need to standardize medical practice under fledgling scientific rigor parameters (2). In the current context, these organizations have transcended their original function to become protagonists in the production of scientifically validated knowledge, its effective transfer to everyday clinical practice, and its dissemination through formal publication and medical education channels (3).

In the specific setting of continuing medical education, these entities have developed a comprehensive training paradigm characterized by a systemic structure and substantiated by robust scientific evidence (4). Their professional updating programs incorporate a broad spectrum of educational modalities that encompass everything from high-level academic international symposia to sophisticated skills-based certification systems, based on professional excellence standards (5). Of special note is their work in meticulously drafting clinical practice guidelines based on the best available evidence, which establish parameters for healthcare quality and resource optimization for contemporary healthcare systems (6). This complex expert consensus-generating process requires the use of comprehensive protocols to ensure absolute

academic independence and mitigate any potential conflict of interest that could compromise the objectivity and scientific integrity of the recommendations given (7).

The recent COVID-19 pandemic constituted an epidemiological milestone evidencing these organizations' notable capacity for institutional adaptation when faced with extraordinarily large global health emergencies (8). Over a remarkably brief period of time, they implemented sophisticated virtual platforms for continuing medical education, managing to maintain the most exacting standards of educational quality under on-site restrictions (9). This accelerated transition toward hybrid digital models has helped transcend traditional geographic barriers (10) and structural socioeconomic limitations (11), significantly democratizing access to specialized medical knowledge and facilitating professional update processes in traditionally underserved health development settings (12).

In the emerging field of social appropriation of medical knowledge, scientific societies play an essential mediating role between cutting-edge scientific advances and the concrete needs of the general population (13). These institutions have developed innovative methods for translating specialized technical language into accessible formats for the general public, without sacrificing inherent scientific rigor (14). To do this, they use differentiated communication strategies, adapted to various levels of literacy in the target population (15). This comprehensive approach is especially relevant in settings marked by profound healthcare inequality (16), where it significantly facilitates the design and

implementation of culturally pertinent, socially accepted, and epidemiologically effective interventions (17).

Today's global digital ecosystem, characterized by an unprecedented glut of information, poses both strategic opportunities as well as significant challenges for specialized scientific communication (18). Medical societies face a complex institutional challenge in establishing themselves as reliable and authorized sources of validated medical information (19) within a context marked by the exponential proliferation of pseudoscientific content and massive health disinformation phenomena (20). To deal with this contemporary phenomenon, they have implemented rigorous content validation systems using multidisciplinary expert committees (21), thus placing a distinctive seal of scientific assurance and reliability on the medical information released to the general public and professional community (22).

In Colombia, medical societies and associations play an essential role in health-related publication and education, aimed not only at professionals in these fields but also the general population. These organizations have led innovative initiatives for democratizing access to medical knowledge, carrying out educational campaigns, and developing educational materials and communication strategies adapted to the needs and realities of different population groups. Their work has been key in combating disinformation, promoting healthy lifestyles, and fostering disease prevention, thus contributing to the construction of a society that is more informed and aware of its well-being. Serving as a bridge between specialized knowledge and the community, these entities reinforce their commitment to public health and the nation's social development, positioning themselves as essential actors in promoting a culture of prevention and self-care.

However, there are opportunities for improvement in this missional educational and informative work. Therefore,

the objective of this article is to characterize the types of media and educational resources currently being used by Colombian medical associations and societies. This intends to provide a general overview that will help determine trends and opportunities for improvement in this field, strengthening public recognition and inviting these institutions to constantly strengthen their informative and educational work.

Method

This study was based on a document analysis of the open education resources and means of dissemination developed by 80 Colombian societies and associations of all medical specialties at a national level. Their official digital platforms were systematically examined (Figure 1), as well as the type of educational resources available to the public (Figure 2), with a special emphasis on those aimed at both healthcare professionals and the general public.

Data collection was done between January and March 2025, using a descriptive tracking methodology. Predetermined data tables were used for this, which included categories like the type of resource, format, topics addressed and diffusion strategies. It should be noted that this review did not consider the maintenance level of each consulted digital website.

Results

Social networks used by Colombian medical associations and societies

The analysis revealed a differentiated pattern of digital platform adoption among the 80 Colombian medical societies and associations analyzed (Figure 3). Facebook emerged as the social network with the highest penetration, used by all of the organizations included in this study, which underscores its central role as a two-way communication channel for both specialized audiences and the general public.

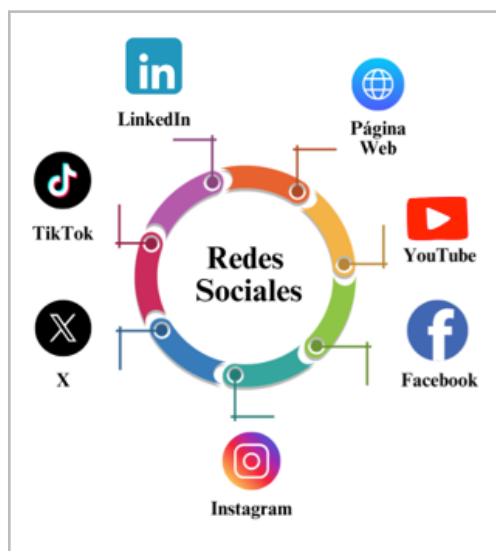


Figure 1. Description of social networks.

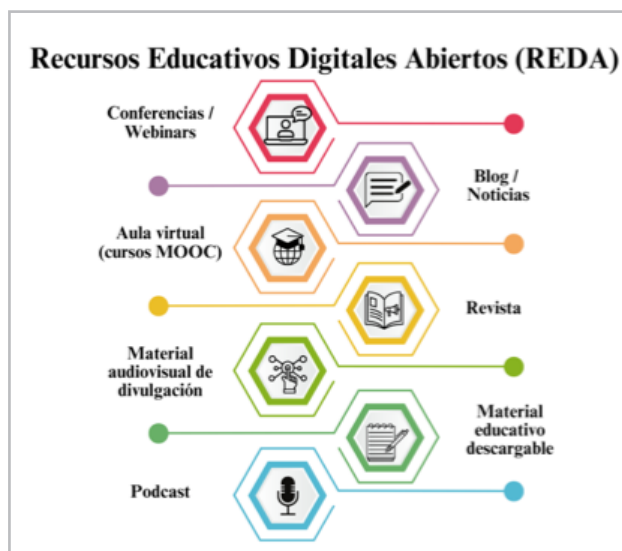


Figure 2. Types of open digital educational resources (ODERs) tracked.

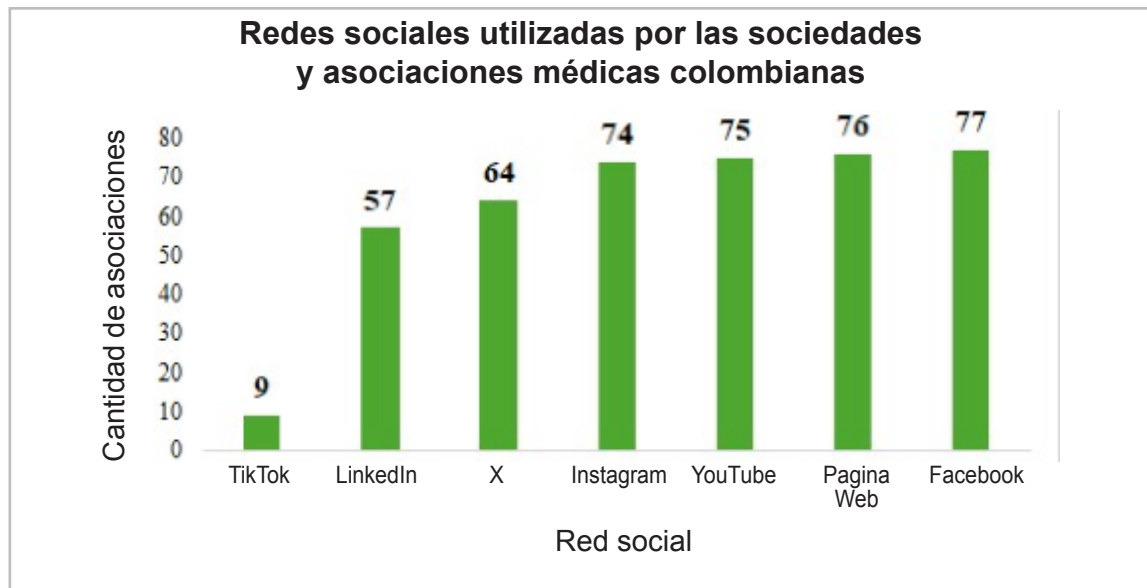


Figure 3. Social networks used by the 80 Colombian medical associations and societies.

Institutional web pages and YouTube were the second most preferred, functioning as strategic repositories for structured educational content, specialized audiovisual materials and continuing education materials. This distribution suggests clear prioritization of platforms that allow storage of detailed information and ongoing communication with different stakeholders.

On the other hand, there was moderate adoption of Instagram and X (previously Twitter), which are platforms used mainly for concise scientific publications and rapid communication with the medical community. LinkedIn, while present, had a significantly lower penetration, indicating that formal professional networking has more limited relevance within the digital strategy of these entities. The scant use of TikTok is especially interesting, reflecting a limited adoption of short and massive video formats among the medical societies analyzed. This hierarchical distribution of platforms indicates a communication approach that privileges content depth over viral trends, but with a diverse presence to meet the information needs of different segments of the population.

Readers who wish to consult the database with the compilation of access links for the social networks of the Colombian medical societies may consult the address available on Mendeley Data¹.

Open digital educational resources (ODERs) developed by Colombian medical associations and societies

The analysis of ODERs showed that conferences and webinars were the predominant format, offered by 67 of the

medical societies analyzed (83.8% of the total). This finding, reported in Figure 4, reflects a preference for synchronous formats that facilitate continuing professional education and allow real-time interaction. In second place, there were 53 societies (66.3%) that produced content through blogs and news, which indicates an effort to maintain expeditious communication channels for disseminating scientific advances and clinical guidelines.

Massive open online courses (MOOCs) and virtual classrooms were implemented by 42 organizations (52.5%), revealing a growing bid for structured virtual medical education. Specialized journals, existing in 36 societies (45%), continue to be a cornerstone for disseminating scientific research. It is notable that only 30 societies (37.5%) produce audiovisual dissemination materials, and 21 (26.3%) offer downloadable resources, while podcasts are the least used format (12 societies, 15%). This hierarchical distribution suggests that, while advances have been made in diversifying educational formats, greater emphasis remains on resources that replicate traditional medical training models.

Readers who wish to consult the database with the compilation of access links to examples of ODERs designed by Colombian medical societies may consult the address available on Mendeley Data².

Discussion

The analysis of the digital presence of Colombian medical societies shows a stratified pattern of social network adoption, in which Facebook is the dominant platform, followed by institutional web pages, YouTube, and Instagram. This

1 Velasquez Murcia, Santiago (2025), "Redes Sociales Sociedades Médicas Colombianas", Mendeley Data, V2, doi: 10.17632/xgwg8z3n5r.2. Enlace: <https://data.mendeley.com/preview/xgwg8z3n5r?a=05efe288-c66e-43b8-aced-be358dca5507>

2 Velasquez Murcia, Santiago (2025), "Recursos Educativos Sociedades Médicas Colombianas", Mendeley Data, V2, doi: 10.17632/2dwx65v5dy.2. Enlace: <https://data.mendeley.com/preview/2dwx65v5dy?a=54f89a46-2b62-4295-a47f-5f055d0aae18>

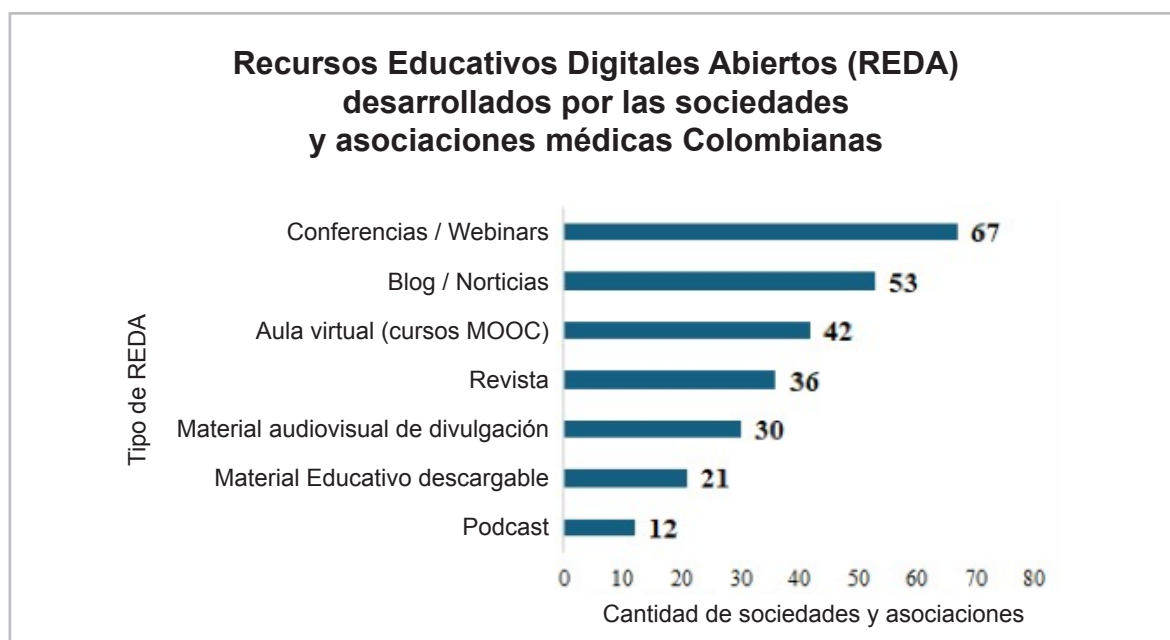


Figure 4. ODERs developed by the 80 Colombian medical associations and societies. Source: Author's own.

ranking reflects a communication strategy that prioritizes professional interaction and massive dissemination, although with a notable underutilization of emerging platforms like TikTok and LinkedIn, which suggests untapped opportunities for reaching younger audiences using innovative audiovisual formats (23).

As far as the ODERs, the findings show a marked preference for synchronous formats: 83.8% of the organizations offer webinars and virtual conferences, while only 15% have made forays into innovative formats like podcasts. This unequal distribution reveals an incomplete transition toward comprehensive digital education models, with a persistent traditional approach focused on one-way knowledge transmission (24).

A comparison with more developed healthcare systems shows significant gaps, especially in the implementation of cutting-edge continuing medical education. While only 52.5% of Colombian societies offer MOOCs, countries with well-established systems report rates of more than 90% (25). This disparity could be explained by limitations in technological infrastructure and teacher training, critical factors previously identified in regional studies.

The identified challenges are clear opportunities for innovation in the supply of digital education. Strategic incorporation of microlearning, e-learning, augmented reality and adaptive testing systems could transform the impact of the ODERs (26). However, this advance would require overcoming structural barriers, including the digital gap in rural areas and the need to standardize quality criteria for virtual medical education. The Colombian case thus illustrates both achievements as well as ongoing challenges in the digital transformation of medical education in emerging settings.

On another note, the main limitations of this study include the strictly documental nature of the analysis, which prevents an evaluation of the quality, updating and true efficacy of the educational resources offered by the medical societies. In addition, the study does not consider the users' perceptions nor the impact of these materials on professional training or the health literacy of the general population. Key aspects must still be resolved, such as the criteria used by the associations to select the dissemination formats, as well as the degree of articulation between their communicative strategies and public health policies. Future studies could complement this analysis through qualitative studies of professionals and the community, evaluations of the impact of ODERs on learning and health behavior changes, and international comparisons to establish good practices that are replicable in the Colombian context.

Conclusions

This analysis evidences the important efforts made by Colombian medical societies and associations in generating and disseminating medical knowledge for both healthcare professionals and the community. Their significant digital presence, especially through platforms like Facebook, institutional web sites, and YouTube, show a communication strategy geared toward accessibility and wide coverage. However, the scant adoption of emerging formats and social networks that draw younger audiences, like TikTok and LinkedIn, indicate opportunities for diversifying audiences and adapting the messages to the new information consumption dynamics.

Likewise, the provision of ODERs shows significant advances in the creation of synchronous content like con-

ferences and web seminars, as well as incipient development of virtual classrooms and MOOCs. However, the low implementation of more innovative and versatile formats like podcasts, downloadable materials, and brief multimedia products indicates the continued predominance of a traditional approach to digital medical education. This poses the need to reframe both the pedagogical and technological approaches to adapt to the new virtual learning paradigms, characterized by autonomy, flexibility and interactivity.

In conclusion, Colombian medical societies have great potential for reinforcing their educational and informative roles through better systematization of their digital strategies, the incorporation of innovative technologies and the adoption of standardized quality criteria in the production of ODERs. Social ownership of medical knowledge and the fight against disinformation require more inclusive, participative and culturally relevant approaches. In this regard, these organizations have the opportunity to establish themselves as leaders in professional updating and community health training, thus contributing to a more equitable, informed and resilient healthcare system.

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