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Prohibition of Physicians Selling on Social Media: Ethical, Legal, and Professionalism Perspectives

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Abstract. The growing practice of physicians selling health products and services through social media has raised serious concerns regarding ethics, law, and professionalism, particularly in maintaining public trust and ensuring patient safety. This study use a Systematic Literature Review (SLR), reviewing 20 Scopus-indexed articles (Q1–Q3) published between 2020 and 2025 that are relevant to the theme of physicians selling on social media. The selection process followed four stages (identification, screening, eligibility, and inclusion) resulting in a final set of articles analyzed qualitatively through narrative synthesis. Bibliometric analysis revealed that dominant issues in the literature include conflicts of interest, insufficient disclosure in sponsored content, blurred boundaries between education and advertising, and the erosion of professionalism leading to diminished public trust. Network and overlay visualizations further indicate a shift in scholarly focus from the benefits of social media toward critiques of commercialization practices, while density visualization highlights that ethical and professionalism issues remain more prominent than legal regulation. These findings affirm that prohibiting physicians from selling products on social media is not merely a normative issue, but a strategic necessity to safeguard clinical objectivity, professional integrity, and consumer protection, while underscoring the urgency of revising medical codes of ethics and strengthening digital health literacy and regulatory frameworks.

Keywords. Medical Ethics, Digital Professionalism, Social Media, Conflict Of Interest, Health Advertising

1. Introduction

The development of digital technology has changed the pattern of communication between health workers and the community. Social media has become one of the most frequently used means of sharing health information, providing education, and establishing closer interactions with patients and the public. This phenomenon has created new opportunities for the medical profession, but at the same time has given rise to significant ethical and professional challenges. [1], [2]

On the other hand, social media is also used by some doctors for commercial activities, such as marketing health products, supplements, or certain services. This practice is controversial because it has the potential to blur the line between the role of doctors as professionals who prioritize the interests of patients and their role as business people [3].

Ethically, doctors are bound by the basic principles of medicine, namely beneficence, non-maleficence, autonomy, and justice. Selling products through social media carries the risk of creating conflicts of interest, where financial gain may influence a doctor's clinical objectivity in providing recommendations.

From a legal perspective, a number of jurisdictions have established strict regulations regarding the promotion of health services and the sale of medical products. For example, health service advertisements must go through a specific licensing mechanism to prevent exaggerated claims that mislead the public. However, rules regarding promotion on social media are often still vague and have not been able to fully address the complexity of this issue.

The perspective of medical professionalism also emphasizes the importance of maintaining public trust. The medical profession has a high social status because it is trusted to possess medical knowledge and competence that the general public does not have. If this trust is undermined by excessive commercialization, the credibility of the medical profession may be degraded. Medical professional organizations in various countries have issued codes of ethics that prohibit commercial practices that could harm patients. For example, the American Medical Association (AMA) emphasizes that doctors should not allow economic interests to interfere with their ethical obligations [4]. Similarly, in Indonesia, the Indonesian Medical Code of Ethics (KODEKI) prohibits the use of the profession for personal business interests.

However, debate remains regarding the practical limits of these prohibitions. Should doctors be completely prohibited from engaging in business activities on social media, or only prohibited if such activities have the potential to be misleading? This question is increasingly relevant given that many doctors also serve as entrepreneurs in the health sector.

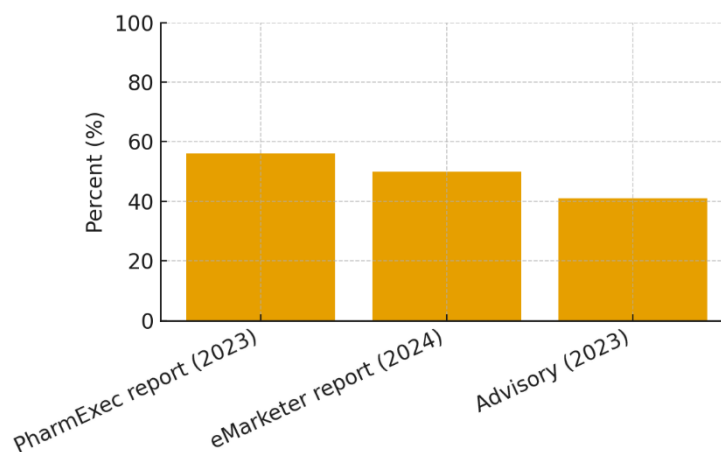


Figure 1. The Influence of Social Media on Doctors' Perceptions of Medicines or Products

Recent surveys show that social media has a significant influence on how doctors form their perceptions of health products. Figure 1 shows that between 41% and 56% of doctors in several international surveys reported a change in their perceptions of medicines or health services after being exposed to information on digital platforms [3]. These figures confirm that social media is no longer just a communication channel, but a source of information that can directly influence professional practice. This phenomenon raises serious issues, as information circulating on social media is not always scientifically verified, while doctors have a moral and professional responsibility to base clinical decisions on valid evidence. In other words, the influence of social media content on doctors opens up the potential for increasingly complex

conflicts of interest, especially when the same platforms are also used as a means of selling health products. This situation justifies the need for a systematic study of the prohibition of physicians selling on social media from an ethical, legal, and professional perspective.

The presence of health influencers on social media complicates this discussion. Most people find it difficult to distinguish between educational content, health promotion, and product advertising [5]. As a result, there is a risk that people will be more influenced by a doctor's popularity on social media than by the scientific validity of the information presented. This phenomenon has a broad impact on the doctor-patient relationship. Patients may doubt whether the medical recommendations given by doctors are purely based on clinical considerations or influenced by commercial interests. This has the potential to weaken the foundation of trust, which is at the core of the therapeutic relationship.

Globally, this issue is also related to consumer protection. Health products promoted by doctors on social media often do not undergo rigorous effectiveness testing, or even lack official distribution permits. If patients or the public suffer losses as a result of consuming these products, legal problems may arise that are detrimental not only to patients, but also to the reputation of the medical profession as a whole. [6]

In Indonesia, the phenomenon of doctors selling products through social media has increasingly become the focus of public and media attention. Viral cases involving doctors commercializing their practices on digital platforms demonstrate an urgent need to strengthen regulations and reinforce ethical understanding among medical personnel. In the context of medical education, this issue is also an important reflection on how the values of professionalism are taught and internalized by prospective doctors. Medical education emphasizes not only clinical competence, but also the morality and professional integrity that must be upheld throughout one's career.

Prohibiting doctors from selling products on social media is not merely a matter of individual ethics, but also reflects efforts to collectively maintain the image of the profession. The medical profession has a social obligation to put the interests of patients above all else, so that uncontrolled commercialization can erode this noble mission [7]. Although the phenomenon of doctors' involvement in commercial activities on social media is becoming increasingly prominent, the existing literature is still fragmentary and consists mostly of case reports, opinions, or partial regulations from professional organizations and the government. There is no comprehensive synthesis that systematically examines empirical findings related to ethics, legality, and professionalism in prohibiting doctors from selling products on social media. This creates a clear research gap, namely the absence of studies that are able to integrate cross-disciplinary scientific evidence to understand the extent to which this phenomenon affects public trust, patient safety, and the sustainability of the medical profession's image. [8]

Therefore, research on the Prohibition of Physicians Selling on Social Media is important to conduct in order to gain a deeper understanding of the ethical, legal, and professional implications of this phenomenon. Such research can contribute to the development of more comprehensive, relevant, and adaptive policies and guidelines for the digital age. Thus, the background of this study confirms that the prohibition of doctors selling products on social media is not merely a practical issue, but is closely related to the dimensions of medical ethics, legal regulations, and medical professionalism. A systematic review of the literature is needed to map previous research results, identify patterns, and formulate evidence-based recommendations for developing ethical guidelines and regulations relevant to the digital era. This research is expected to provide a comprehensive overview and serve as a basis for policy recommendations and more ethical professional practices.

1.1 Theoretical/Conceptual Framework

Ethical Management and Professionalism of Doctors in Sales Activities

A number of recent studies confirm that the ethical management and professionalism of doctors in product sales activities on social media is a multidimensional issue that requires serious attention. The low level of disclosure in sponsored posts on Instagram creates information bias that can harm patients [9]. The blurring of boundaries between educational and commercial content, which has implications for weakening the credibility of doctors [10]. Meanwhile, doctors' digital behavior affects patient compliance: professional content increases trust, while promotional content decreases it [3]. These studies are in line with the bioethical principles-beneficence, non-maleficence, autonomy, and justice-that underpin medical ethics, and show that digital commercialization practices risk violating professional standards. Thus, the literature confirms that managing ethics and professionalism in the digital space is a strategic necessity to maintain professional integrity.

Based on this elaboration, the researcher views that the management of ethics and professionalism of doctors in sales activities on social media must be placed in a dual accountability framework: first, ethical accountability to patients, and second, professional accountability to the wider community. The phenomenon of doctor's involvement in health advertising shows that without regulation

Social Media Management in Medicinal Products or Healthcare

Recent literature shows that social media has become a major channel for marketing medicinal products and healthcare services, but at the same time poses ethical and regulatory dilemmas. Short video content on TikTok, Instagram and YouTube often presents unbalanced therapeutic information, with a tendency to emphasize benefits without explaining risks [11]. Diamond et al. (2023) reported that about 26.5% of health content on Instagram is promotional, with doctors and clinics involved in its distribution [12]. Meanwhile, developing countries such as the Philippines, the dominance of non-doctor influencers in health promotion exacerbates people's vulnerability to misinformation [13]. These findings suggest that social media management in the context of medicine and healthcare products cannot be separated from ethical control mechanisms, advertising regulations, and public digital literacy.

Based on these findings, researchers consider that social media management in drug or health service promotion needs to be formulated as part of digital governance that involves collaboration between doctors, regulators, and technology platforms. Without a comprehensive management framework, social media is likely to become a space that prioritizes algorithmic logic and commercial interests over medical validity. The researcher argues that in the future, the management strategy should be more comprehensive.

1.2 Operational Framework

The researcher created a conceptual framework by projecting how the phenomenon of commercialization by doctors on social media affects the three dimensions, which ultimately leads to the issue of public trust and patient safety.

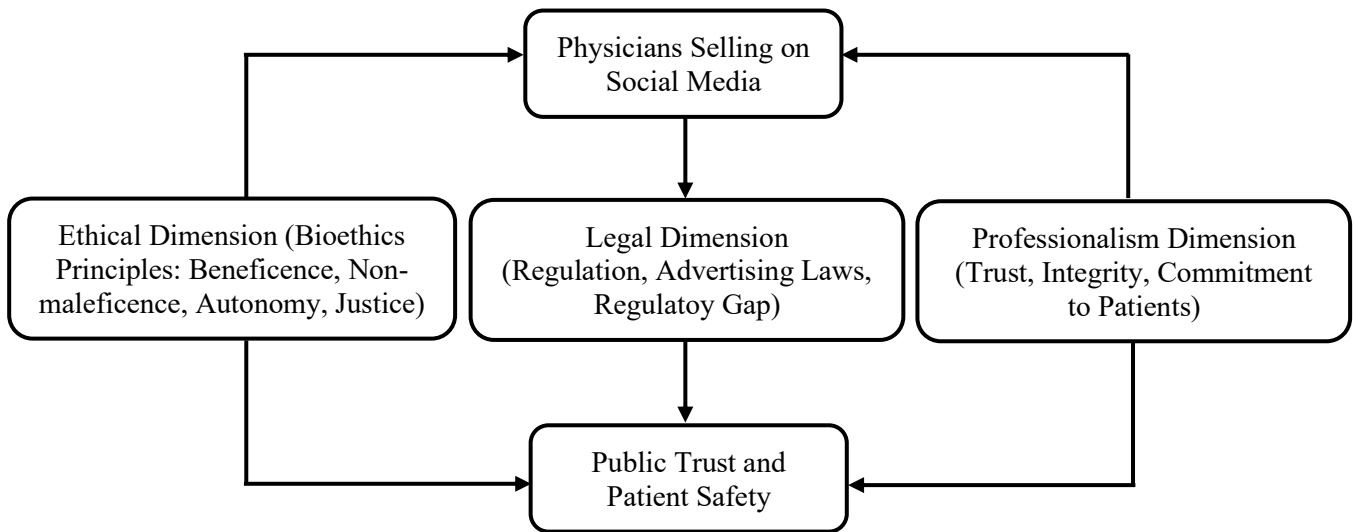


Figure 2. Conceptual Framework Prohibition of Physicians Selling on Social Media

Figure 2 illustrates the conceptual framework used in this study, where the phenomenon of physicians selling on social media is placed as the main trigger that impacts three important dimensions: ethics, law, and professionalism [14]. On the ethical dimension, commercialization practices have the potential to violate bioethical principles such as beneficence, non-maleficence, autonomy, and justice. On the legal dimension, this phenomenon is related to the weak regulation of health service advertisements in the digital realm and the regulatory gap that allows promotional practices to run without strict supervision. Meanwhile, in the professionalism dimension, selling products through social media can reduce the level of integrity, erode public trust, and obscure doctors' commitment to patients' interests. These three dimensions ultimately lead to a critical outcome, namely the maintenance or disruption of public trust and patient safety. Thus, this framework emphasizes the urgency of systematically examining the phenomenon of the prohibition of doctors selling products on social media, in order to obtain a complete picture of its multidimensional impact. Based on the conceptual framework above, this study formulates several research questions that will guide the Systematic Literature Review:

RQ1: How does the medical ethics perspective view the practice of product sales by doctors through social media?

RQ2: What are the implications of the phenomenon of product sales by doctors on social media for medical professionalism, especially in terms of public trust and professional integrity?

2. Methodology

This research methodology uses a Systematic Literature Review (SLR) approach which is compiled based on the PRISMA 2020 Statement guidelines. SLR was chosen because it is able to provide a comprehensive synthesis of the phenomenon of prohibiting doctors from conducting sales activities through social media in terms of ethics, law, and professionalism. The literature search was conducted systematically on a number of relevant international and national databases, namely PubMed/MEDLINE, Scopus, Web of Science, Google Scholar, and Garuda/Sinta to capture literature in the Indonesian context. The search strategy used a combination of keywords related to “medical professionalism”, “social media”, “conflict of

interest”, “health advertising”, and “physician influencer”. Articles that met the inclusion criteria were qualitatively analyzed to identify key themes.

Articles that meet the inclusion criteria are scientific publications in the form of journal articles, proceedings, reviews, or official policy documents published in the period 2020-2025 indexed by Scopus Q1-Q3, written in English, and explicitly discuss the involvement of doctors in product sales, promotion, or endorsement activities on social media by including dimensions of ethics, law, or professionalism. Conversely, articles will be excluded if they only discuss the use of social media for education without a commercial context, focus on non-physician professions, are not available in full text, or are non-scientific popular articles.

The article selection process was conducted in four stages according to the PRISMA diagram, namely: identification by collecting articles from various databases, screening by removing duplicates and selecting titles and abstracts, eligibility by reading the full text to assess relevance, and inclusion by including suitable articles in the final analysis [15]. Successful articles were analyzed using the narrative synthesis method, with categorization into the three main dimensions of ethics, law, and professionalism. The synthesis focused on identifying themes, patterns, and differences in findings between studies, which were then presented in the form of a literature matrix table and descriptive narrative. [16]

To maintain validity and reliability, the screening and eligibility process was conducted by two independent researchers. Differences of opinion were resolved through discussion until consensus was reached, while the search strategy was designed to be replicable so that the research results are transparent and can be retested. With this methodology, it is expected that the research will be able to present a comprehensive literature mapping and provide evidence-based recommendations regarding the prohibition of doctors selling products through social media in the perspective of ethics, law, and professionalism.

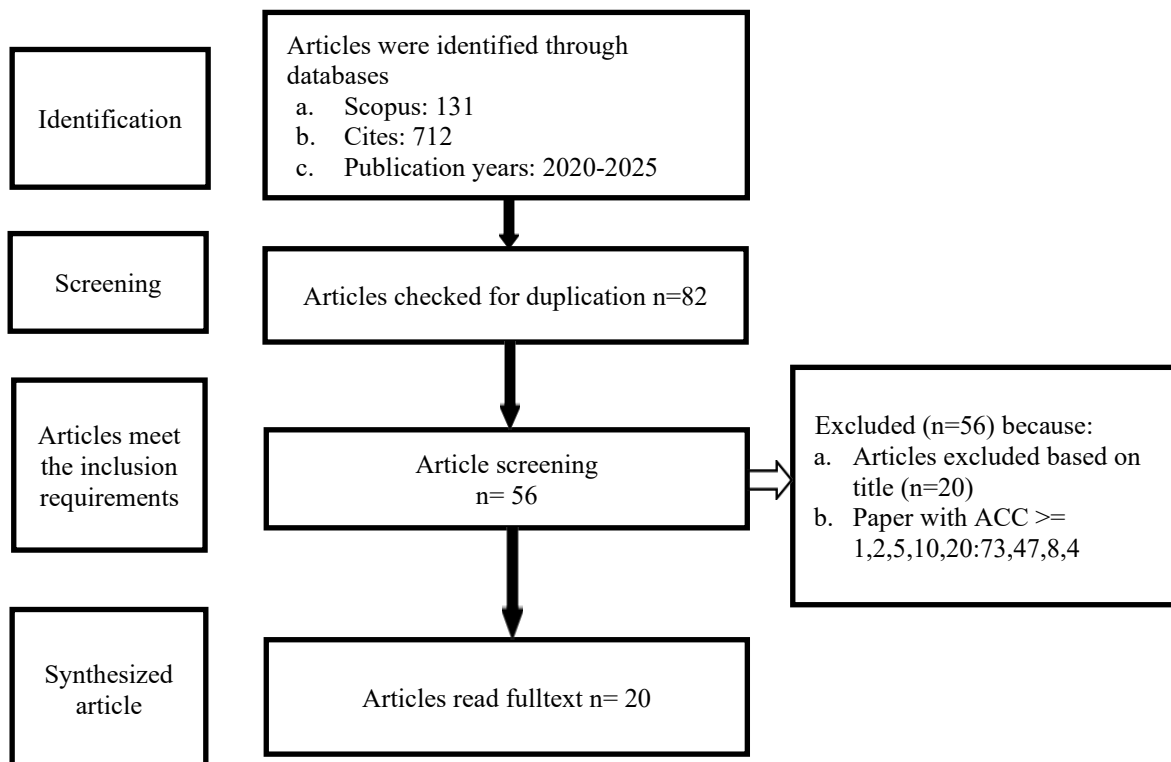


Figure 3. PRISMA Diagram of the Article Selection Process

The process of article identification and selection in this study follows the PRISMA Flow Diagram. At the identification stage, all relevant articles were collected from PubMed, Scopus, Web of Science, Google Scholar, and Garuda/Sinta databases using predefined keywords. From the initial search results, a large number of 131 articles were obtained. Next, a duplication removal process was carried out to ensure that each article was only recorded once in the research database. This resulted in 82 post-duplication check articles.

The next stage is screening, which is the review of titles and abstracts of all remaining articles. Articles that did not fit the research topic, for example because they only discussed health education without a commercial context or focused on non-physician professions, were removed from the list. This process left a total of 56 articles that were more relevant to the focus of the study. The eligibility stage followed, which involved reading the full text of the articles that passed the screening stage. At this stage, an in-depth assessment was made regarding compliance with the inclusion criteria, specifically whether the articles addressed doctors' involvement in sales, promotional or endorsement activities on social media by highlighting the ethical, legal or professional dimensions. Articles that did not meet the methodological requirements or did not provide full text were excluded from the analysis. [17]–[19]

The final stage was inclusion, where only articles that met all inclusion criteria were included in the final analysis. The 20 selected articles were then analyzed through the narrative synthesis method and presented in the form of a literature matrix and thematic discussion. By following this PRISMA flow, the study ensured that the literature selection process was systematic, transparent and replicable.

3. Results and Discussion

Result

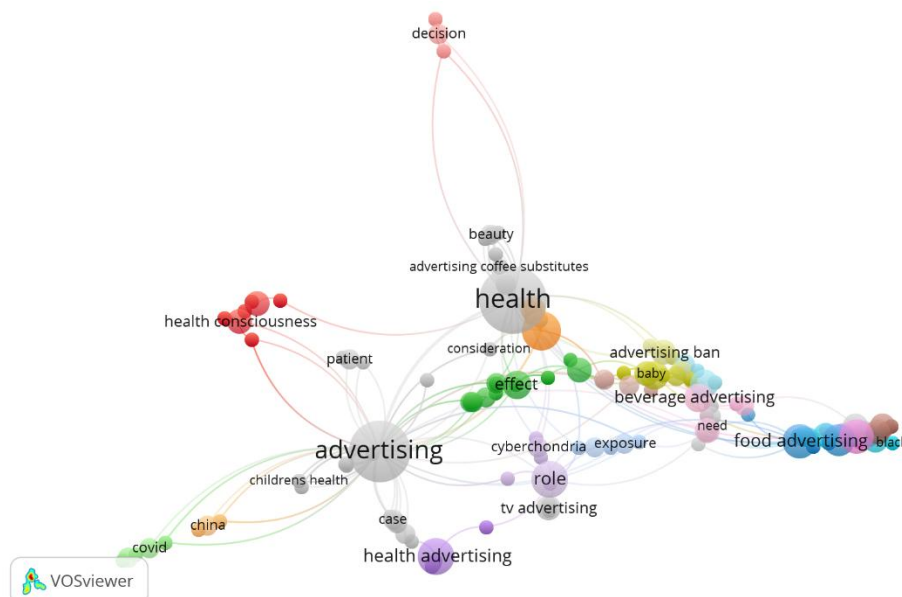


Figure 4. View Results Explore Section Network Visualization Theme Health Advertising

The results of the network analysis in Figure 4 (Network Visualization Theme Health Advertising) show a close relationship between the theme of health advertising and the three main dimensions that are the focus of this study, namely ethics, law, and professionalism. The

relationship between variables shows that the practice of selling or promoting health products by doctors on social media does not stand alone, but intersects with the issue of conflict of interest, the spread of misinformation, and the commodification of the medical profession. This finding is in line with the research who found that dermatologists' paid content on Instagram is rarely accompanied by adequate disclosure, thus increasing the risk of information bias and threatening patient safety [9], [20]. Similarly, the blurring of boundaries between educational content and advertising, which has implications for public confusion and decreases the credibility of doctors as a source of objective medical knowledge [21]. In addition, the visibility of content from certified doctors is often inferior to that of non-physician influencers on platforms such as TikTok, which increases the potential for inaccurate information to spread [22]. These overall findings corroborate the pattern in the network visualization, where the connectedness of the variables suggests that product selling by doctors on social media poses a systemic risk to public trust and patient safety. Thus, the results of this analysis support the urgency of banning direct commercialization practices by doctors on social media as well as the importance of stricter regulations, separation of educational and commercial accounts, and transparent disclosure obligations.

Overall, the division of clusters by color in Figure 4 illustrates the structure of the relationship between the research variables: the phenomenon of product sales by doctors on social media (yellow cluster) raises ethical issues (red), legal regulation challenges (green), and professionalism implications (blue). These linkages show that the issue of health advertising on social media is multidimensional and requires a systematic approach through SLR. This study examines the Prohibition of Physicians Selling on Social Media: Ethical Legal, and Professionalism Perspectives the opportunities and risks of using social media as a means of patient education in dermatology, with an emphasis on ethical and professionalism challenges.

Table 1. Geo-Strategic and Push-Pull Factors Influencing Patient Decisions in The Asian Region

No	Penulis dan Judul (Tahun)	Metode	Hasil Utama	Critical Review
1.	Porras Fimbres DCP et al., <i>Cross-sectional Analysis of Dermatologists and Sponsored Content on Instagram</i> (2023, JMIR Dermatology)	This research method is quantitative with a cross-sectional analysis of Instagram content to identify dermatologist sponsored posts.	Many sponsored posts; disclosure & potential commercial bias a concern; risk to safety if claims not balanced.	Highly relevant on conflict of interest & disclosure obligations.
2.	Johnson H. et al., <i>A Deep Dive Into Instagram's Top Skinfluencers</i> (2023, JMIR Dermatology)	This research method is quantitative with content analysis & profiles of "skinfluencers" who often promote products.	Mapping of product promotion & actor setting (doctor vs non-doctor); risk of public confusion.	Point out the blurring of the education-advertising boundary; relevant for sponsor labeling rules.

3.	Szeto MD. et al., <i>Analysis of Dermatology Content by Top Influencers on Twitter and Their Academic Impact</i> (2023, JMIR Dermatology)	This research method is quantitative with content analysis & metrics (h-index) of top accounts.	Popular content is often not from certified doctors; implications of misinformation & attention competition.	Reinforces the argument for educational-commercial account separation.
4.	Wojtara MS. et al., <i>Use of Social Media for Patient Education in Dermatology: Narrative Review</i> (2023, JMIR Dermatology)	This research method is qualitative with a narrative review of social media utilization for patient education.	Social media is useful, but misinformation & the need for ethics/professionalism are emphasized.	Education ethics framework - the basis for distinguishing education vs promotion.
5.	Thang CJ. et al., <i>Short-Form Medical Media: Multi-Platform Analysis of Acne Treatment Videos</i> (2023, JMIR Dermatology)	This research method is quantitative with content analysis across TikTok/IG/YouTube Shorts.	Quality & balance of diverse therapy information; promotional potential without risk context.	Relevant to the "balanced information" standard when endorsing.
6.	Diamond C. et al., <i>Telangiectasia-Related Social Media Posts</i> (2023, JMIR Dermatology)	This research method is quantitative with Instagram content analysis.	26.5% of content is promotional ; actors include providers & businesses.	Empirical evidence of the education-advertising mix in clinical accounts.
7.	Rowson AC., <i>Dermographics: The Australian Dermatologist and Social Media</i> (2023, JMIR Dermatology)	This research method is descriptive (theme/editorial topic of meds & dermatology).	Highlighting the widespread adoption of social media by dermatologists & the need for professional guidelines.	Linking doctors' "personal brand" culture with professional ethics.
8.	Quijote KL. et al., <i>Descriptive Analysis of Dermatology Content and Creators From the Philippines</i> (2023, JMIR Dermatology)	This research method is descriptive with cross-platform analysis.	Mapping of who is promoting & type of content; predominance of non-doctors in promotions.	Gives a developing country context-relevant to Indonesia.
9.	Subramanyam C. et al., <i>Visibility of Board-Certified Dermatologists on TikTok</i> (2024, JMIR Dermatology)	This research method is quantitative with categorization of uploads and visibility of certified doctors.	Misinformation spreads faster; doctors' content loses visibility to influencers.	Need clear platform + disclosure policy.
10.	Kang J. et al., <i>Popular Skin-of-Color Dermatology Hashtags on TikTok</i> (2024, JMIR Dermatology)	This research method is quantitative with longitudinal hashtag analysis.	Nondermatologists dominate; risk of information inequality for vulnerable groups.	Highlight the impact on vulnerable groups of consumer protection points.

11.	Haff PL. et al., <i>The New Media Landscape and Its Effects on Skin Cancer Info</i> (2024, JMIR Dermatology)	This research method is a systematic scoping review of the literature on meds & skin cancer.	Variations in quality; format of short videos affect risk perception.	A framework for assessing accuracy vs engagement in clinical promotional content.
12.	Karadağ AS. et al., <i>Social Media Use in Dermatology in Turkey: Challenges & Tips</i> (2024, JMIR Dermatology)	The research method is qualitative (practice guide) based review.	Call for maintaining professional boundaries & patient communication on digital platforms.	Practical for professional account SOP (educational-commercial split).
13.	Nigro AR. et al., <i>Information Regarding Dermatology on TikTok</i> (2025, JMIR Dermatology)	This research method is quantitative with TikTok content quality analysis.	Lots of inaccurate information; ethical implications when doctors participate in promotions.	Direct evidence of misinformation risk in short-form ads.
14.	Nguyen C. et al., <i>Transparency and Sponsored Content in Social Media: Considerations for Dermatologists</i> (2024/2025; JAAD International)	This research method is an opinion/perspective-based overview of sponsor practices.	Insist on disclosure of identity, credentials, & financial relationships on sponsored content.	JAAD Int = Q1 → used as a comparison for ethical guidelines.
15.	Venosa M., <i>Advertising Medical Procedures on Social Media: Dangers & Ethical Considerations</i> (2025, Acta Biomedica)	This research method is a narrative review of medical procedure advertisements on social media.	Highlight hazard advertising procedures & ethical-legal policy recommendations; Q3 journal.	In line with the prohibition of “direct selling” on professional accounts.
16.	Kaňková J. et al., <i>Health-Related Communication of Social Media Influencers: Scoping Review</i> (2025, Journal of Health Communication)	This research method is a scoping review of SMIs & health.	SMIs can help, but often without disclosure ; risk of misleading.	This journal is generally Q1/Q2; it is used as a setting for misinformation.
17.	Sun Q. et al., <i>How Doctors’ Social Media Behavior Affects Patient Adherence</i> (2024, Frontiers in Public Health)	The research method is quantitative (analysis of physician behavior & its impact on compliance/outcomes)	Professional content ↑ compliance; personal content ↓ compliance professional boundaries matter.	Reinforces the argument of persona separation & prohibition of hard selling.
18.	Mühlhoff R., <i>Social Media Advertising for Clinical Studies: Ethical</i>	This research method is a normative analysis of social media advertisements.	Social media advertising not suitable for vulnerable	Not Q3 (generally Q1). Used as a risk framework

The results of the overlay visualization in Figure 5 show the relationship between research variables grouped by color clusters and the distribution of publication years, so that the pattern of study development can be identified chronologically. The dark blue cluster represents early research (2020-2022) which still focuses on the use of social media as a means of patient education and the introduction of health advertising in the context of dermatology. In this phase, discussions mostly highlighted the benefits of social media, but began to raise ethical issues related to potential misinformation. The green cluster marks transitional period research (2023) that begins to highlight conflicts of interest due to the increase in paid content and sponsored posts, uncovered low levels of disclosure in physician sponsored posts [28]. Meanwhile, the yellow cluster indicates a more complex focus for the current study (2024-2025), covering issues of legal regulation, consumer protection, and digital professionalism. The visibility inequality between certified doctors and non-physician influencers, which magnifies the risk of misinformation to vulnerable groups [14], [29]. Finally, the red cluster represents recent literature (2025) focusing on the urgency of ethical-legal policies, explicitly call for the need for international regulation of health advertising on social media [30]. Thus, the color distribution and year of publication in Figure 5 confirms the shift in the focus of studies from the benefits of social media towards systematic critiques of conflicts of interest, regulation, and professionalism implications, while confirming the importance of SLR to integrate these findings.

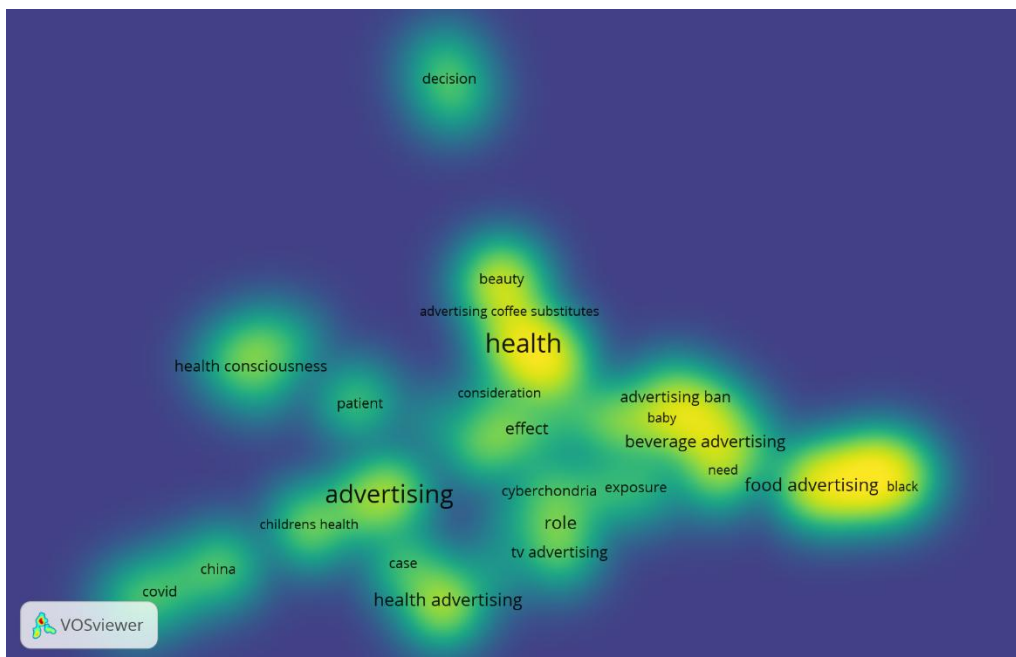


Figure 6. View Results Explore Section Density Visualization Theme Health Advertising

The Figure 6 (Density Visualization) analysis displays areas with thicker color intensity as a representation of the dominant themes in the literature related to health advertising on social media. This visualization shows that terms such as “social media”, “health advertising”, and “physician influencer” are at the center of the high density, indicating that these themes appear most frequently and have been the main focus of academic studies in recent years. This density reflects the great attention paid to health promotion practices on digital platforms, especially when conducted by physicians with professional authority.

In addition, medium-density areas highlighted the issues of “conflict of interest”, “sponsored content”, and “transparency/disclosure”, which is consistent regarding the low level of financial disclosure in paid content [9]. This suggests that transparency and managing conflicts of interest are crucial themes that are widely discussed. On the other hand, other high-density areas are indicated by the terms “professionalism” and “public trust”, which show the literature's concern about the impact of commercial promotion on the integrity of the medical profession and the doctor-patient relationship.

Relatively lower, but still significant, densities are seen in the terms “regulation”, “advertising law”, and “consumer protection”. This finding indicates that although the legal regulation aspect is starting to be researched, the focus of the literature is still more concentrated on the ethical and professionalism dimensions. This is in line emphasizes the need for formal regulation of medical advertising on social media, but also points to a research gap regarding the effectiveness of existing regulations. [30]

Thus, the density visualization in Figure 6 confirms that the dominant issues in the literature cover three main layers: (1) the use of social media as an arena for health advertising, (2) conflicts of interest and the need for transparency, and (3) the implications of ethics and professionalism on public trust. Meanwhile, the legal regulation aspect is still relatively less dominant, leaving room for further research to explore consumer protection mechanisms and the strengthening of ethical rules in the digital context.

Discussion

A medical ethics perspective views the practice of product sales by doctors through social media.

Bibliometric analysis of the literature shows that ethical issues are one of the most prominent themes in the discussion of doctors' product sales practices on social media. The color clusters in the network visualization (Figure 4 and Figure 6) place the terms medical ethics, conflict of interest, and disclosure in a central position, indicating the high scholarly attention to this issue. This shows that the academic community considers the practice of commercialization by doctors not only as an ordinary business activity, but as a phenomenon that has direct implications for the integrity of the profession. In the context of bioethics, violations of the principles of non-maleficence and beneficence are highlighted because promotional activities have the potential to encourage patients to buy products that have not been scientifically tested or do not meet clinical needs.

Some of the empirical studies analyzed reinforce these ethical arguments. For example, low level of disclosure in dermatologists' sponsored posts on Instagram, which led to information bias and the risk of misleading patients [9]. This phenomenon violates the principle of autonomy in bioethics because patients are not provided with honest and complete information to make rational health decisions. Similarly, the line between educational content and product advertising is increasingly blurred, making it difficult for patients to distinguish whether doctors are giving pure medical advice or engaging in commercial promotion [10]. This raises ethical questions about transparency, which should be the foundation of public trust.

The overlay visualization (Figure 5) shows a shift in the focus of ethics studies from basic issues to more complex ones in the 2023-2025 period. Whereas earlier discussions only highlighted the educational benefits and risks of misinformation, the literature now examines the ethical implications of financial engagement, such as sponsored content and paid endorsement practices. The urgency of mandatory disclosure of identity and financial relationships in paid content, as nontransparency is considered a form of violation of

professional integrity [26]. This confirms that the medical ethics perspective focuses not only on the substance of information, but also on the context and motivation behind its delivery.

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Furthermore, the density visualization (Figure 6) identifies that high-density keywords, such as professionalism, trust, and digital ethics, are directly correlated with health advertising themes. This means that the perspective of medical ethics cannot be separated from the values of professionalism that govern the doctor-patient relationship. Doctors' behavior on social media affects patient adherence to therapy: professional content increases adherence, while personal or commercial content decreases patient trust [3]. This fact suggests that product promotion on social media risks undermining the trust that has long been the social capital of the medical profession. Thus, ethical violations in the digital realm have direct implications for clinical outcomes.

Overall, the results of bibliometric analysis and literature synthesis confirm that the medical ethics perspective views the practice of product sales by doctors on social media as an action that is prone to conflicts of interest, threatens the principle of transparency, and has the potential to damage public trust. Although social media can be utilized as an educational tool, financial involvement without clear disclosure is seen as a violation of bioethical principles. Therefore, the prohibition of doctors selling products on social media is not merely normative, but rooted in the ethical need to maintain clinical objectivity, protect patient autonomy, and maintain professional integrity. This perspective reinforces the urgency of developing digital ethics guidelines that are more assertive and adaptive to the challenges of the social media era.

Implications of the phenomenon of product sales by doctors on social media for medical professionalism.

The results of the bibliometric analysis show that the issue of medical professionalism occupies an important position in the health advertising theme network, as shown in the network visualization and density visualization. Keywords such as professionalism, trust, and digital professionalism have high density, indicating that professional integrity and public trust are major topics in the literature. The relationships between variables show that when doctors engage in product promotion practices through social media, the boundaries between professional and commercial roles become blurred. This phenomenon has a direct impact on the public's perception of doctors' motives: whether they are patient-oriented or financially driven.

Recent literature reinforces these concerns. Johnson et al. (2023) found that skinfluencers with medical and non-medical backgrounds were equally involved in product promotion, making it difficult for the public to distinguish educational content from advertising content [10]. This raises doubts about the credibility of doctors on social media, so that the trust that should be the foundation of the doctor-patient relationship begins to erode. Similarly, doctors' personal branding on social media often clashes with the values of professionalism, as

the image as an influencer has the potential to dominate the role as an objective health worker [31].

The overlay visualization results (Figure 7) also show a shift in research focus from educational issues to professionalism implications in the period 2023-2025. The low visibility of educational content from certified doctors compared to non-physician influencers, which increases the risk of commercial information dominance in the digital space [22]. As a result, the medical profession's integrity in presenting evidence-based information is eroded by platform algorithms that favor popularity and engagement. These findings show that professional integrity is not only tested in the clinical context, but also in the market-driven digital arena.

Furthermore, a number of studies have linked commercialization practices with tangible impacts on patient behavior. Doctors' behavior on social media affects patients' adherence to medical therapy: professional and evidence-based content increases adherence, while personal or promotional content decreases trust and negatively impacts health outcomes [3]. This finding shows that professional integrity is not just an idealized norm, but a factor that directly determines the quality of the therapeutic relationship and the success of medical interventions. Thus, the phenomenon of doctors selling products on social media has serious ethical and clinical implications.

Overall, the bibliometric analysis confirms that the practice of doctors selling products on social media is a real threat to medical professionalism. Public trust is eroded due to the blurred lines between education and advertising, while professional integrity is questioned when financial interests influence medical narratives. Literature density shows that this issue is a dominant focus because it touches a fundamental aspect of the profession, namely the commitment to put the patient's interests above all other interests. Therefore, the implications of this phenomenon not only concern the reputation of individual doctors, but also the collective legitimacy of the medical profession. This reinforces the urgency of the need for digital ethical guidelines, separation of professional and commercial accounts, and regulations that support transparency so that public trust and professional integrity are maintained.

4. Conclusions

The conclusion of this study confirms that the prohibition of doctors selling products on social media is not just a normative issue, but an ethical, professional, and legal necessity rooted in efforts to maintain public trust and patient safety. The novelty of this research lies in the Systematic Literature Review approach based on bibliometric analysis, which not only maps empirical findings across disciplines, but also connects the dynamics of ethics, professionalism, and legal regulations in a comprehensive conceptual framework. The results show that the practice of commercialization by doctors on social media triggers conflicts of interest, erodes professional integrity, and weakens therapeutic relationships, while legal regulations are still lagging behind in anticipating the complexity of the digital era. The long-term offer from this study is the need to build a digital health governance ecosystem based on three pillars: (1) revision of the medical code of ethics to be adaptive to the development of social media, (2) preparation of legal regulations that emphasize disclosure obligations and separation of professional-educative accounts from commercial accounts, and (3) increasing digital literacy among both doctors and the public to reduce vulnerability to misinformation and misleading advertisements. With these long-term strategies, the medical profession is expected to maintain its integrity, rebuild public trust, and play an active role in creating an ethical, transparent, and sustainable digital health landscape.

5. References

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