

Ethics in publishing surgery on social media: a scoping review

Renata Savian Colvero de Oliveira¹, Jordana Soares Iankoski², Conrado Araujo Limeira de Niemeyer², Márcio Pacheco de Andrade², Grace Teresinha Marcon Dal Sasso², Gabriela Marcellino de Melo Lanzoni², Carlise Rigon Dalla Nora³

1. Universidade de Oulu, Oulu, Finlândia. 2. Universidade Federal de Santa Catarina, Florianópolis/SC, Brasil. 3. Universidade Federal do Rio Grande do Sul, Porto Alegre/RS, Brasil.

Abstract

Due to the increasing prevalence of internet use, analyzing trends in social media use has become crucial due to its intrinsic connection with several ethical aspects. In this context, a scoping review was conducted to globally analyze the ethical impact of publishing surgical procedures on social media. After selection of 25 articles, 8 articles were eligible for review. The conclusions of the study showed a lack of global ethical compliance among health care professionals in publishing surgical procedures on social media, noting challenges such as profile fusion and inadequate exposure of sensitive information. The urgent need for continuing ethical education and the importance of rigorous oversight by professional associations are evident. It is concluded that stricter measures are essential to protect the right to privacy and ensure compliance with medical ethics and privacy laws.

Keywords: Ethics. Ethics, medical. Social media. Surgical procedures, operative.

Resumo

Ética na divulgação de cirurgia nas mídias sociais: revisão de escopo

Com a crescente prevalência do uso da internet, a análise das tendências de utilização das mídias sociais torna-se crucial devido a sua intrínseca ligação com diversos aspectos éticos. Nesse contexto, uma revisão de escopo foi conduzida para analisar globalmente o impacto ético da divulgação em mídias sociais de procedimentos cirúrgicos. Após a seleção de 25 artigos, oito foram eleitos para a revisão. As conclusões do estudo revelaram falta de conformidade ética global entre profissionais de saúde na divulgação de procedimentos cirúrgicos nas mídias sociais, com destaque para desafios como fusão de perfis e exposição inadequada de informações sensíveis. A necessidade urgente de educação ética contínua e a importância de fiscalização rigorosa por entidades profissionais são evidentes. Conclui-se que medidas mais severas são essenciais para proteger o direito à privacidade e garantir conformidade com as leis de ética médica e privacidade.

Palavras-chave: Ética. Ética médica. Mídias sociais. Procedimentos cirúrgicos operatórios.

Resumen

Ética en la divulgación de cirugía en las redes sociales: revisión del alcance

Con el uso de internet, el análisis de las tendencias en el uso de las redes sociales se vuelve crucial debido a su conexión intrínseca con varios aspectos éticos. Se realizó una revisión de alcance para analizar globalmente el impacto ético de la divulgación en las redes sociales de los procedimientos quirúrgicos. Seleccionados 25 artículos, se eligieron ocho para la revisión. Las conclusiones revelaron una falta de cumplimiento ético global entre los profesionales sanitarios en la difusión de los procedimientos quirúrgicos en las redes sociales, con énfasis en desafíos como la fusión de perfiles y la exposición inadecuada de información sensible. Se requiere una educación ética continua y la importancia de una supervisión rigurosa por parte de las entidades profesionales. Se concluye que son esenciales medidas más estrictas para proteger el derecho a la privacidad y garantizar el cumplimiento de las leyes de la ética médica y de la privacidad.

Palabras clave: Ética. Ética médica. Medios de comunicación sociales. Procedimientos quirúrgicos operativos.

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The internet has arisen as a crucial tool for health care professionals, facilitating the dissemination of information to patients. A cross-sectional research conducted in the United States showed that between 23% and 31% of the health care professionals reported using the internet for more than 80% of their daily interactions with patients¹. This study also showed that 71% of the professionals regularly use the internet for professional updating purposes; in addition, 62% share specialized websites with patients, reinforcing the value of the internet as a resource both for continuing education of professionals and informed engagement of patients in their own health care¹.

Another study, in China, sought to examine internet access and use patterns and showed that medical professionals are increasingly using new media to access and retrieve different types of information². However, they continue to attribute a higher value to professional journals ($p<0.01$) and traditional media ($p<0.01$). The online questionnaire showed that 71.23% of the participating physicians would share authorized health information in their professional domain and 47.66% would use their new accounts on media to promote science².

Due to the increasing prevalence of internet use, analyzing trends in social media use has become crucial, since it is intrinsically connected with several ethical aspects. A cross-sectional quantitative survey conducted in Australia showed that most physicians employ social media privately, and only 25.7% ($n=187$) choose to completely avoid these platforms. Although most do not express discomfort with patients accessing their information online, 65.8% express hesitation to engage more deeply in online social media and communication³. These findings underscore the complexity of ethical and practical dynamics between physicians and patients in the online context.

Notably, the benefits of using the internet include improved communication with patients and health care providers and enhanced professional networking and development, in addition to its contribution to public health care research and service⁴. However, ethical issues are of paramount

importance, especially when patient-related content is shared.

It is important to note that each surgical association or society has its recommendations regarding social media posts. According to the American College of Physicians and the Federation of State Medical Boards, maintaining trust in the profession and in the doctor-patient relationship requires that physicians always apply ethical principles to preserve this bond, complying with confidentiality, privacy and respect for individuals in online communications⁵.

The Society for Vascular Surgery recommends posting only educational or informational images and prohibits posting patient-related images for entertainment purposes. It requests that professionals ensure that the hospital, medical group, or university permits the posting of patient-related photos regardless of compliance with the Health Insurance Portability and Accountability Act (HIPAA) or patient consent. And, finally, it stipulates respect for the HIPAA principles of not posting clinical information and ensuring that there is no identifiable patient information in posts⁶.

To act safely on social media, health care professionals must be aware of the guidelines and recommendations released by national or international associations in their field. An example of this situation is the suggestions of the United States Society of Neurointerventional Surgery, which emphasize the need for professionals to be transparent about their intentions, always obtaining the necessary permissions before starting online interactions. In addition, they suggest that professionals be aware that, when addressing topics pertinent to their specialty on social media platforms, both their personal reputation and the reputation of the organization of which they are part may be, directly or indirectly, subject to risks. Therefore, it is imperative to carefully assess whether the context in which information is shared requires obtaining prior consent for publishing non-identified data, seeking to ensure compliance with applicable ethical and legal regulations⁷.

Considering the importance of this subject, this study aimed to describe the ethical

implications in publishing surgical procedures on social media, from a global perspective.

Method

Study type

This is a scoping review that followed the methodology of the Joanna Briggs Institute⁸, establishing five steps: 1) identification of the research question; 2) identification of relevant studies; 3) selection of studies; 4) data analysis; and 5) grouping, synthesis and presentation of data. The Preferred Reporting Items for Systematic Reviews⁹ protocol (PRISMA) was also used.

Research question

The research question of this study was developed according to the mnemonic combination PCC⁸ (population: surgeons and/or social media; concept: publishing surgical procedures; and context: worldwide), and the following guiding question was established: what are the ethical implications related to publishing surgical procedures on social media?

Search strategy

The bibliographic survey was conducted between September 29 and October 11, 2022, by searching the following databases: MEDLINE (via PubMed), Scopus (via CAPES Portal) and Web of Science (via CAPES Portal). The descriptors in English ("ethics," "social media," "surgery") were obtained from the Medical Subject Headings (MeSH) and associated by the Boolean operator "and" through the following combination: "ethics AND social media AND surgery," in English. All studies retrieved were imported and organized on the Rayyan selection platform¹⁰.

Study eligibility criteria

Original studies published from 2016 to 2022 were included in the review. The year 2016 was chosen because it represents the milestone of the general data protection regulation in Europe¹¹.

Studies should include surgeons and social media in their samples. Studies whose main objective was not to answer the research question and studies published before 2016 were excluded. In addition, theses, dissertations, editorials, notes/letters to the editor, opinion articles, guidelines, review articles, and articles with no results were excluded from the analysis.

Final selection

The searches were conducted between September 29 and October 11, 2022. Four reviewers independently screened the studies and selected them based primarily on title and abstract. Subsequently, the reviewers read the pre-selected articles in full and independently, evaluating their relevance to the research and compliance with the inclusion criteria. Disagreements between the four researchers were resolved with the intermediation of a fifth researcher (professor).

Data extraction, data mapping, and result summarization

For data extraction, we used a structured instrument in Microsoft Excel that provided the identification of the essential elements of the studies, such as author, year of publication, country, sample, objectives, results and conclusion. In data analysis, the results were compiled and communicated through a table with the characteristics of the included studies so as to present an overview of the material.

Ethical aspects

Ethical aspects and authorship rights were respected and the authors of the works used were referenced. Due to the bibliographic nature of the research, ethical assessment was not necessary.

Results

A total of 600 articles were found using the built search strategy. Of these, 363 articles were excluded for being duplicates and 212 articles were excluded in the title and abstract reading

phase. The 25 articles resulting from this selection were chosen for scoping review. The process is represented in Figure 1.

Figure 1. Flowchart of the process of selecting studies for scoping review

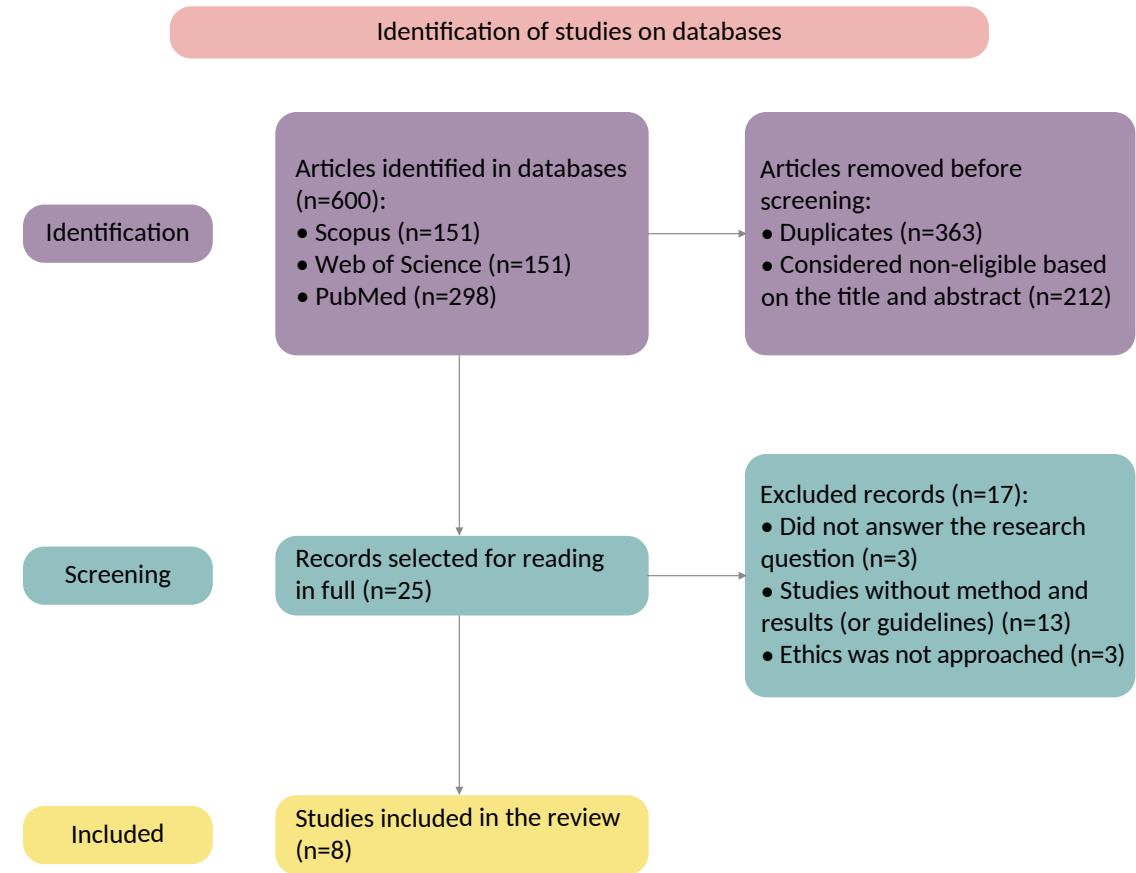


Chart 1 shows the distribution of studies according to study author, year of publication, country, sample, objectives, results and conclusion. Eight articles addressed the subject of the ethical impact associated with publishing surgical

procedures on social media. Of these, most (n=3) focused on plastic surgery as the surgical specialty highlighted. Health care professionals constitute just one example of how the digital age has transformed the global business landscape.

Chart 1. Characterization of articles according to author, year of publication, country, sample, objectives and results and conclusion

Author; year	Country	Sample	Objectives	Results	Conclusion
Call T, Hillock R.; 2017 ¹²	USA	1,021 orthopedic surgeons	Review online posts by orthopedic surgeons	<p>Among the surgeons, 82% had professional websites, 4% had professional blogs, 21% had professional Facebook accounts, 14% had professional Twitter accounts, 26% had professional LinkedIn accounts, and 14% had professional YouTube accounts. Non-professional content was found in 3.5% of all surgeons in the sample who had some type of content on the internet.</p>	Surgeons using Facebook, Twitter, and YouTube accounts should take responsibility for content posted on personal and professional social media accounts. Making these accounts private and accessible only to those the surgeon designates is a means of protecting the surgeon from the posting of unwanted content on their social media pages. If a surgeon has inappropriate content displayed and available currently, that surgeon should remove that content from their social media accounts immediately. The recommendation is for each surgeon to monitor their personal and professional social media posts. If the surgeon is not monitoring their online content, a designated team member should have the responsibility of routinely accessing social media to monitor the content. It is imperative that publicly available content is adequate so as not to violate the social contract that exists between surgeons and their patients.
Koo K, Ficko Z, Gormley EA. 2017 ¹³	USA	281 urologist profiles on Facebook	Characterize non-professional content on public Facebook accounts of urology residents	<p>Among the accounts analyzed, 40% had potential non-professional content and 23% had explicit non-professional content.</p>	Most of the recent graduates in residency had a public profile on Facebook and most of the profiles contained self-authored non-professional content. Of those who identified themselves on Facebook as urologists, approximately half violated published professionalism directives. Higher awareness of the residents' online identities is needed.
Chandawarkar AA, Gould DJ, Stevens WG.; 2018 ¹⁴	USA	67 integrated plastic surgery programs registered with the American Board of Academic Website of Plastic Surgeons	Characterize the use of residency-sponsored social media via Instagram, provide general guidelines for appropriate use, and explore opportunities for use of social media by residents and residency programs for plastic surgery.	<p>Among plastic surgery residency programs, 21% have an active account on Instagram, which total 806 posts; practically 4% contained intraoperative photos; 0.12% had an image of the patient.</p>	<p>Social media guidelines were proposed for plastic surgery residents and continued and appropriate use and self-regulation by plastic surgery residents was advocated.</p>

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Chart 1. Continuation

Author; year	Country	Sample	Objectives	Results	Conclusion
Fanti Silva DA, Colleoni R.; 2018 ¹⁵	Brazil	156 individuals: 52 medical graduates, 51 residents and 53 assistant surgeons	Identify, among graduates, residents and assistant surgeons, the group most likely to share on social media confidential data of the patient in the surgical setting, as well as their knowledge of confidentiality rules and laws.	<p>Patient information was shared on social media by 53% of the graduates, 86% of the residents and 32% of the assistant surgeons. Confidentiality preservation policies were unknown to 69% of the graduates, 80% of the residents and 62% of the assistant surgeons. Awareness of protocols to guide health care professionals on safer use of social media was 15% for residents and 22% for assistant surgeons.</p>	Residents were the most likely to share patient information on social media compared to graduates and assistant surgeons. Knowledge of confidentiality laws, rules and protocols was low for all groups. Health care institutions should promote medical ethics education, with a focus on residents. Patient data should be processed only for academic and/or scientific purposes, in protected software, with informed consent.
O'Sullivan J, McCarrick C, Tierney P, O'Connor DB, Collins J, Franklin R.; 2020 ¹⁶	Not applicable (English only videos)	143 random instructional videos from YouTube	Determining whether a random selection of instructional videos on YouTube containing images of central venous catheter insertion in real patients would mention the presence of informed consent to post the video on social media.	<p>This study examined 41 videos that contained real images of patients with "indeterminate" consent status. Of these, 56% (23/41) showed potentially identifiable patient images. Only three physicians responded to the email intended to clarify the consent status of the published video.</p>	Social media have physician-oriented instructional videos that contain images of patients undergoing medical procedures and have no verification of informed consent.
Başar V, Öztürk F, Kubat E, Hañçer H, Çiçekcioğlu F, Yanartaş M.; 2021 ¹⁷	Turkey	173 cardiovascular surgeons	Assess social media use among cardiovascular surgery specialists and their corresponding perspectives.	<p>Of the participants, 73.4% think that social media facilitate patient communication with the physician, 87.9% think that social media increase physician publicity, 80.9% of the participants believe that informing through social media generates information pollution; 9.7% said they had been exposed to verbal violence on social media at least once; 51.4% of the participants did not comply with ethical rules; and 16.8% of them saw violation of the principles of personal data protection and privacy.</p>	Social media use rates for cardiovascular surgeons were high. Half of the cardiovascular surgeons who participated in the study believe that their colleagues do not fully comply with the ethical rules in medical sharing.

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Chart 1.. Continuation

Author; year	Country	Sample	Objectives	Results	Conclusion
Montemurro P, Tay VKS, Hedén P.; 2021 ¹⁸	Sweden	462 plastic surgeons	Present the five- year evolution of the perspectives of plastic surgeons recruited in a private clinic.	<p>The percentage of respondents who opined that the internet and social media lead to better information for patients declined from 61.7% in 2014 to 42.0% in 2017 and 35.4% in 2019 ($p<0.001$). The percentage of respondents who opined that the internet and social media resulted in unrealistic expectations increased from 38.3% in 2014 to 56.5% in 2017 and finally to 65.3% in 2019 ($p<0.001$). The number of respondents who would support the removal of plastic surgery material from the internet and social media decreased from 21.9% in 2014 to 13.0% in 2017 and eventually to 9.7% in 2019 ($p<0.01$); 67% posted photos related to surgery or postoperative outcomes on social media; 82.7% opined that internet and social media use had a good impact on their practice, 11.2% perceived no impact, and 6.1% reported negative impact.</p>	The use and influence of the internet and social media on surgeons has increased. Aesthetic plastic surgeons must equip themselves to deal with the risks and leverage the opportunity for patient engagement and public education.
Bouhadana G, Chocron Y, Zammit D, Gilardino MS.; 2022 ¹⁹	Canada	Academic and aesthetic plastic surgeons	Determine current trends in social media use among Canadian plastic surgeons.	<p>The response rate was 14.2%. Of the participants, 37% had a single social media account for both personal and professional uses. Instagram was the preferred platform (37%). Only 10% of the content published on the networks is academically inclined. Surgeons who have no professional account seemed more likely to believe that it is not ethical to discuss procedures with patients through social media (75% vs. 29%) and to believe that it is not ethical to post procedure/intraoperative videos (75% vs. 21%).</p>	This research highlights divergent views on ethics around social media use, which can be influenced by the type of accounts managed by surgeons. The authors expect that this will help elucidate more ethical, safe, and effective practices on social media.

Chart 1 shows a complex variety of results, since the studies were conducted in different countries. A critical analysis notes the lack of knowledge of confidentiality preservation policies in Brazil¹⁵ and the fusion between professional and personal profiles in social networks¹⁹. This can result both in an inadequate evaluation of the professional by the patient and improper posting without considering the patient's image rights. In addition, patient photo sharing on profiles proves a common practice, as demonstrated by the result that 67% of the plastic surgeons posted surgery-related photos on social media¹⁸.

However, the results of this research showed that, even with the attempted regulation by the Health Insurance Portability and Accountability Act (HIPAA) or the individual directives of surgery associations, ethical rules are not always respected¹²⁻¹⁴.

Consistently with these recommendations, a recent study in Canada concluded that only 10% of the content published by plastic surgeons on social networks was academically inclined, and 37% of them had a single account for personal and professional use¹⁹.

Discussion

The findings of this research show the complexity inherent in the management of digital presence in the surgical setting, emphasizing the crucial importance of constant ethical education, the implementation of precise guidelines, and effective self-regulation as strategies to face the ethical dilemmas associated with the use of social networks in medicine.

Although 2016 was marked by the approval of the General Regulation on Data Protection in Europe¹¹, the principle of respect for privacy and confidentiality predates this framework, as it is addressed in the *Universal Declaration on Bioethics and Human Rights* of the United Nations Educational, Scientific and Cultural Organization (UNESCO), emphasizing the protection and confidentiality of information and privacy of individuals²⁰.

However, social networks still have several cases that violate the bioethical principle of

non-maleficence, as reported in a study in Brazil that aimed at examining the Facebook exposure of patient images by physicians and dental surgeons. The study found confidentiality and/or privacy breach situations and, in addition, several photos exposed vulnerable people unable to autonomously decide on the use of their images, as in the cases of children being exposed²¹. In addition to the breach of basic ethical rights, this situation conflicts with the Brazilian Guidelines of the Code of Medical Ethics, whose chapter IX emphasizes that physicians are prohibited from referring to identifiable clinical cases^{22,23}.

Moreover, recently, the Federal Council of Medicine (CFM) Resolution No. 2,336/2023, which regulates medical publicity, has been updated. The standard maintains as its main objectives the prevention of sensationalism, self-promotion and commodification of the medical practice, avoiding abuses in advertising messages that may lead to ethical-disciplinary and judicial processes²³. At the same time, the changes introduced provide greater flexibility and detailed guidelines, aligning the regulation with contemporary practices and promoting a balance between professional ethics and transparency in medical communication. For example, while the previous regulation expressly prohibited the use of patient images, the new text allows their use for educational purposes, provided they are supplemented with information on therapeutic indications, possible complications and factors that may negatively influence the outcomes, always respecting patient anonymity and privacy²³. Despite the existing updates and legislation, it is noted that the factors for ethical abuse and non-compliance situations still occurring include insufficient inspection and deficient application of appropriate punishments to professionals who violate the rules in force.

It is noted that the ethical duty in relation to social media is not restricted to medical professionals. The Code of Dental Ethics, in its article 44, items I and XII, establishes that publicity and misleading, abusive advertising, including with expressions or images of

before and after, and exposing advertising devices to the lay public in order to obtain customers, especially the use of images and/or expressions before, during and after, related to dental procedures, is an ethical infraction²⁴. Unfortunately, cases that transgress these rules are common on social media. A 2018 study that analyzed 102 pages of the social network Facebook reported that 76.5% had no mandatory items in communication and publication, such as name and registration number of the technician in charge. In addition, 31.4% of the pages displayed “before and after” images²⁵. A similar article that analyzed 50 dental surgeon profiles/pages on the same platform found 82% of imprudence in relation to the Code of Ethics²⁶. These situations are concerning and constitute a major challenge for the Regional Councils of Dentistry and for the field of health as a whole.

The misuse of social networks by health professionals is not an exclusive problem of Brazil. Despite different legislations, the use of patient images and interaction with patients on social media in the US requires full adherence to HIPAA, with suggestions to maintain private and personal accounts separate on social media, minimal online interactions with patients, and familiarity with hospital policies for social media^{27,28}. The American College of Surgeons emphasizes the importance of not blurring the boundaries between professional and personal relationships with patients, discouraging acceptance of “friend” requests on Facebook®, for example. To this end, it recommends the use of separate professional and personal accounts and profiles²⁹.

In Canada, the Canadian Medical Protective Association, a mutual medical defense organization for Canadian physicians that also promotes patient safety and compensates patients harmed by neglectful care, notes that physicians should remember that social media are not appropriate for private conversations; in addition, it advises physicians to establish clear boundaries between professional and personal social media use³⁰.

In European Union (EU) countries, the European Ethical Principles for Digital Health are organized

around four principles that go beyond safety and interoperability requirements. These principles notably include the need to base digital health on humanistic values, always prioritizing quality information for individuals³¹. These principles provide guidelines for ethical and responsible development, implementation and use of digital health technologies, ensuring that such technologies are beneficial to patients, health care professionals and society as a whole. They reflect the European Union’s core values in relation to human dignity, freedom, democracy, equality, the rule of law, and respect for human rights.

In addition, the right to privacy or private life in Europe is guaranteed in the *Universal Declaration of Human Rights*, the *European Convention on Human Rights*, and the *Charter of Fundamental Rights of the European Union*, in addition to the General Data Protection Regulation, which provides for protection of any information related to persons, including names, dates of birth, photographs, videos, email addresses, and telephone numbers, which was created in 2016 and put into force throughout the EU in 2018³². Despite being the birthplace of the Brazilian Data Protection Law (LGPD), the laws are still violated, as shown by Montemurro, Tay and Heden¹⁸ in a Swedish study that sought to present the five-year evolution of the perspectives of plastic surgeons recruited in a private clinic. The results showed that 67% of the 462 plastic surgeons posted photos related to surgery or postoperative outcomes on social media.

Finally, it is imperative to recognize that, although social networks have been deeply integrated into the fabric of modern life, being consolidated as pillars of communication in the current era, the State—through specific legislation—and professional associations—through codes of ethics and regulations—are responsible for safeguarding individuals against the dissemination of images that infringe the fundamental right to privacy²¹. In this context, it is essential that there is rigorous oversight, enhanced scrutiny by the competent authorities, and the imposition of precise sanctions to prevent violations of the Brazilian Data Protection Law,

ensuring that the ethical principles governing citizens' rights are fully observed and that offenders are properly held accountable.

Final considerations

In this study, the ethical challenges posed by the publishing of surgical procedures on social media were thoroughly explored, noting plastic surgery as a concern. The data show a concerning practice of sharing patient images, often without due respect for privacy and confidentiality; this practice not only compromises fundamental patient rights, but also challenges the ethical principles of medicine. The prevalence of such behaviors—even despite strict regulations such as the General Data Protection Regulation in Europe and the Code of Medical Ethics in Brazil—indicates a significant gap between existing legislation and actual practice in social network use by health care professionals. The fusion of personal and professional profiles and the inadequate comprehension of

confidentiality policies are issues that require immediate attention, both for protection of the individuals involved and for maintenance of professional integrity.

Therefore, it is necessary to establish a stronger commitment to continuing ethical education, the development of clear and specific guidelines, and the implementation of effective self-regulation and oversight measures. These strategies should be prioritized to ensure that social media use by health care professionals is conducted in an ethical manner, respecting patient rights and preserving trust in the physician-patient relationship. In addition, collaboration between professional associations, regulatory agencies and the wider community is necessary to foster a culture of digital responsibility, in which patient dignity and privacy are uncompromisingly protected. This study reinforces the need for a multidisciplinary approach to the ethical complexities of digital health care, fostering continuing dialog among all stakeholders to develop practical and sustainable solutions that align medical practice with core ethical values.

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Renata Savian Colvero de Oliveira – Master – renata.deoliveira@oulu.fi

 0000-0002-3042-2621

Jordana Soares Iankoski – Master's student – jordana.iankoski@posgrad.ufsc.br

 0009-0004-5389-7533

Conrado Araujo Limeira de Niemeyer – Master – conrado.raizen@gmail.com

 0009-0006-8965-3172

Márcio Pacheco de Andrade – Graduate (specialist) – marciopachecolab@gmail.com

 0000-0001-9779-211X

Grace Teresinha Marcon Dal Sasso – PhD – gracetmds@gmail.com

 0000-0001-7702-1190

Gabriela Marcellino de Melo Lanzoni – PhD – gabimrc@gmail.com

 0000-0001-5935-8849

Carlise Rigon Dalla Nora – PhD – carlise.nora@ufrgs.br

 0000-0001-5501-2146

Correspondence

Renata Savian Colvero de Oliveira – Tapiontie, 4 A 6, 90570. Oulu, Finlândia.

Participation of the authors

Renata Savian Colvero de Oliveira suggested the theme of the work, prepared keywords, advised on the use of the Rayyan platform, participated in the process of inclusion and exclusion of articles, wrote the manuscript and assisted in the final review. Jordana Soares Iankoski participated in the process of inclusion and exclusion of articles, wrote the manuscript and assisted in the final review. Conrado Araujo Limeira de Niemeyer participated in the process of inclusion and exclusion of articles, wrote the manuscript and assisted in the final review. Márcio Pacheco de Andrade participated in the process of inclusion and exclusion of articles, wrote the manuscript and assisted in the final review. Grace Teresinha Marcon Dal Sasso supervised the work, suggested the type of study and contributed to all stages of review of the article. Gabriela Marcellino de Melo Lanzoni supervised the work, suggested the type of study and contributed to all stages of review of the article. Carlise Rigon Dalla Nora carried out the final review and suggested improvements to the article.

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