

Impact of Unlawful Aesthetic Practices in Brazil: A Multicenter Survey on Complications and the Need for Regulatory Reform

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BACKGROUND The illegal practice of medicine in aesthetic procedures poses significant public health risks because of complications from unqualified individuals. Invasive treatments such as botulinum toxin and fillers are frequently performed by nonmedical professionals without proper medical training, resulting in infections, necrosis, and lasting sequelae.

OBJECTIVE This study aimed to analyze the complications from nonphysicians encountered by Brazilian specialists (dermatologists, plastic surgeons, and other specialists) in their clinical practice.

MATERIALS AND METHODS A multicenter survey involving 1,058 physicians (primarily dermatologists and plastic surgeons) across Brazil assessed complications from aesthetic procedures performed by nonmedical individuals. Descriptive statistics categorized complications by type and severity, identified responsible practitioners, and estimated the health care and economic burdens.

RESULTS Over half of the respondents treat more than 100 patients monthly, and 12.69% of patients had undergone procedures by nonmedical professionals. On average, five complications were treated monthly per physician; 17% led to permanent sequelae. Common issues included scarring (78.68%), inflammation (72.15%), and infection (65.43%). Most cases required up to 3 specialists and 7 to 8 consultations per year, often involving multiple surgeries.

CONCLUSION These findings underscore the urgent need for regulatory enforcement, public education, and legal protection. Brazil's experience may inform other countries confronting similar issues related to the unauthorized practice of aesthetic medicine.

The unlawful medical practice refers to individuals without proper education or certification performing medical procedures reserved exclusively for qualified physicians. This practice violates the law and poses significant risks to public health, and it is not a new issue.^{1,2}

Things have only gotten worse. In the 1950s, there was a study in California published in JAMA examining the performance of medical procedures by nonphysicians.^{1,3}

The scope of practice of various health care professions has been recently revisited, as increasing interest has arisen in the United States regarding the practice of cosmetic procedures.⁴ The situation is particularly concerning in the field of aesthetic procedures, where an increasing number of complications have been reported due to interventions performed by nonmedical professionals, including practitioners from other health care areas, such as dentists, estheticians, and even, in some countries, lay individuals, many times after short weekend-basis courses.⁵ This is a worldwide concern among physicians who have been dedicated to the aesthetic aspects of medicine, involving plastic surgeries, and cosmetic procedures.^{5–8} Feng and Zhai⁵ described the health risks posed by the illegal practice of aesthetic medicine, fostered by misleading media advertisements, targeting especially young people. Previous studies have reported the influence of social media in aesthetic medicine, creating an online exchange of information, connecting health care providers and prospective patients. YouTube, Instagram, Facebook, Twitter,

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TikTok, *WeChat*, *Reddit*, and *Snapchat* are among the main networks used with slight variations according to patient's age and country. According to the American Society for Dermatologic Surgery, social media was among the 3 main factors a patient considers when purchasing skincare products; and it was the sixth factor considered by patients who will have a cosmetic treatment. 41% of patients look for their health care provider on *Instagram*.⁸ There has been a notable rise in the demand for aesthetic procedures often perceived as simple by patients, such as fillers and botulinum toxin; patients are unaware of their considerable risks, including infections, necrosis, embolism, and allergic reactions, which may result in severe and permanent consequences, often frequently managed by dermatologists.^{4,5}

In 2013, a historical milestone occurred in Brazilian legislation concerning the Medical Act.⁷⁻¹⁰ The acting president vetoed the main provisions of the Federal Council of Medicine's (CFM) proposal, which aimed to regulate the medical profession and define the scope of medical practice. The CFM's proposal was aligned with the regulation of the medical profession in most countries worldwide. This veto created a precedent for various professional councils to issue resolutions permitting their members to perform procedures previously restricted to physicians, including aesthetic surgeries, facial and body fillers, chemical peels, and treatments for skin pigmentation disorders. Initially, nonmedical professionals ventured into simpler procedures, such as botulinum toxin injections. Over time, they progressed to more invasive and higher-risk interventions, such as major aesthetic surgeries, liposuctions, and deep chemical peels without proper patient monitoring, often in inadequate environments, leading to severe complications. These procedures are now being performed by individuals lacking the necessary medical training, particularly in dermatology, exacerbating the associated risks. The Federal Council of Medicine and other regulatory authorities face growing challenges in addressing and mitigating this public health issue.⁷⁻¹⁰

The unlawful practice of medicine, particularly in the field of aesthetic procedures, poses a serious threat to public health and frequently results in challenging complications, or even impossible to reverse. From a clinical standpoint, these complications are severe and often require the expertise of dermatologists and plastic surgeons for appropriate management. Legally, there is an urgent need to revise penalties and improve mechanisms to regulate who is qualified to perform these procedures.

There is a notable lack of comprehensive statistical data regarding complications caused by nonmedical practitioners in Brazil. This study aimed to analyze the complications from nonphysicians encountered by Brazilian specialists (dermatologists, plastic surgeons, and other specialists) in their clinical practice.

Methods

A multicenter survey was approved by the Ethical Committee of the Faculty of Medical Sciences of Minas Gerais

and registered at the Brazil Research Platform (#84212324.1.0000.5134). The principal investigators selected a representative group of 15 dermatologists from different states of the Brazilian Society of Dermatology to oversee the distribution of a standardized questionnaire across all regions of Brazil. After obtaining informed consent, a digital questionnaire (online form) with questions regarding managing complications in patients who had undergone prior medical aesthetic procedures performed by nonmedical professionals was distributed to specialist physicians by a link.

Physicians practicing dermatology, infectious diseases, plastic surgery, and other specialties were invited to participate based on the fact that they manage many complications. The survey comprised 11 questions regarding the performance of aesthetic dermatologic procedures, such as botulinum toxin injections, fillers, biostimulators, medium to deep peels, facial resurfacing, microneedling, hair transplants, liposuction, electrodesiccation using plasma or cautery, endolaser (including different devices that deliver energy to lead to skin tightening presumably), and injection of enzymes to target subcutaneous fat tissue, among others. Participation in the study was limited to physicians with a valid Regional Medical Council number. This study adhered to the guidelines of Declaration of Helsinki for good clinical practices.

Data Analysis

The questionnaire used grouped data. The results were presented using frequency distributions (absolute and relative) and descriptive statistics involving grouped data mean and SD(s) to identify trends and patterns in the reported complications.

Results

The study included responses from 1,058 physicians, predominantly practicing in dermatology, infectious diseases, and plastic surgery, of approximately 14,000 to whom the survey was sent. A comprehensive digital questionnaire provided insights into managing complications arising from medical aesthetic procedures performed by nonmedical professionals. Respondents reported an average number of 108 total monthly consultations ($s = 54$). Approximately 51.6% of the respondents attend to more than 100 patients monthly, with 29.9% managing more than 150 patients per month (considering total patient visits). Participants indicated that, on average, of the total number of patients monthly seen, 14 of those ($s = 11$) were already submitted to aesthetic procedures with nonmedical practitioners, as seen in **Supplemental Digital Content 1**, Table S1, <http://links.lww.com/DSS/B683>. This represents 12.7% of their total patient volume. Notably, 76.2% of physicians manage up to 20 such patients per month who have already received aesthetic procedures delivered by nonmedical professionals.

The survey revealed that dentists (94.6%) and biomedical professionals (91.9%) were the most frequently

identified nonmedical practitioners performing aesthetic procedures, followed by aestheticians (67.7%), physiotherapists (37.82%), pharmacists (36.87%), nurses (37.16%), hairdressers (12.70%), and laypersons (20.19%) were also described as responsible for practicing aesthetic medical procedures. Table 1 summarizes the absolute and relative frequencies for each category, offering a comprehensive view of the landscape of nonmedical providers involved in aesthetic procedures.

These data indicates that 89.42% of the participating physicians manage up to 15 patients per month presenting complications resulting from dermatological procedures performed by nonmedical practitioners. On average, respondents reported treating five cases (see **Supplemental Digital Content 1**, Table S1, <http://links.lww.com/DSS/B683>) of complications per month ($s = 5.1$).

When the physicians were asked about what percentage of their patients with complications would follow with permanent sequela, 21.30% of the physicians responded they would not see such complication, 58.59% of the physicians estimated that between 1% and 20% of their patients would follow with permanent sequela, 7.95% estimated that between 21% and 40% would have permanent sequela, 4.71% of the physicians estimated that permanent sequela would occur between 41% and 60%, and 7.46% estimated that more than 61% will have a permanent sequela.

Complications from treatments by nonmedical professionals resulted in permanent sequela, with a median of 17% (see **Supplemental Digital Content 1**, Table S1, <http://links.lww.com/DSS/B683>). Considering that, on average, physicians handle 5 cases of complications caused by nonmedical practitioners per month, it is estimated that 1 patient per practitioner per month will suffer some form of permanent sequela, considering the total number of participants.

The most common complications included scarring (78.7%), inflammatory processes (72.2%), followed by infections (65.4%) and necrosis (28.9%). Delayed diagnosis (45.8%) was also a concern when patients were treated by nonphysicians.

On average, 2 specialists were required to resolve each case of complication ($s = 1$), considering the total number of respondents (1058) of this survey. 93.2% of those respondents, however, reported that up to 3 specialists were needed to resolve these complications. Annually, 7 to 8 patient visits ($s = 5$) were necessary for follow-up, with 87.12% noting that up to 12 patient visits per year were required to solve the problems. In addition, 96.1% of respondents stated that up to 10 surgical procedures were needed for management, and the weighted average was 4 surgical procedures ($s = 3$). Treatments using laser and other devices were required in a median of 7 sessions per case of complication ($s = 5$), and 92.2% of the physicians responded that up to 15 sessions were needed (see **Supplemental Digital Content 1**, Table S1, <http://links.lww.com/DSS/B683>).

Only 15.9% of physicians believed legally supported when addressing complications caused by nonmedical practitioners. Many expressed concerns regarding the lack of regulatory oversight and its impact on patient safety. The responses from 316 medical doctors in the last question of the survey (30%) highlighted several important and concerning issues related to complications resulting from procedures performed by nonmedical professionals (see **Supplemental Digital Content 1**, Table S2, <http://links.lww.com/DSS/B683>).

Discussion

This study represents the first extensive investigation into the issue of inadequately regulated medical practice in Brazil. It unveils a concerning situation regarding the prevalence of insufficiently regulated medical practices, their victims, and the substantial economic burden they impose. More than 12% of patients who consult with medical specialists in Brazil have undergone invasive cosmetic procedures performed by nonphysicians. These procedures include botulinum toxin injections, fillers or biostimulators, deep peels or resurfacing, facial and nasal aesthetic surgeries, liposuction, endolaser treatments, and the injection of unregulated products such as enzymes

TABLE 1. Health care Professionals' Categories Responsible for Performing the Procedures on the Physician's Patients		
Professionals' Categories	Absolute Frequency	Relative Frequency
Dentists	998	94.60%
Biomedical professionals	969	91.85%
Aestheticians	714	67.68%
Physiotherapists	399	37.82%
Nurse	392	37.16%
Pharmacist	389	36.87%
No technical or graduate course or unknown	213	20.19%
Hairdresser	134	12.70%
Some patients had those procedures performed by more than one provider.		

targeting subcutaneous fat, which are not permitted in Brazil. Dentists and biophysicians (biomedical professionals) are the professionals most frequently performing these procedures.

Dentists in Brazil complete a five-year program,¹¹ without proper training to treat complex skin and appendage disorders involved in the complications reported in this study. According to the Michaelis dictionary, a dentist is defined as a “professional who treats dental diseases and restores or replaces damaged or lost teeth.”¹² Recently, however, many dentists have begun performing a wide range of aesthetic procedures¹³ and even plastic surgeries, such as blepharoplasty and rhinoplasty.¹² It is also common to see advertisements on social media featuring dentists treating conditions such as melasma, hair loss, and even performing hair transplants or complex aesthetic facial surgeries (Figure 1).

The title “biophysician” or “biomedical professional” is currently used to designate a professional graduate in a 4,000-hour course. According to the Brazilian Council of Education (2007, Res. 2), their degree enables their students to do activities related to laboratory analysis and bio-engineering.¹¹ A significant issue arises because many patients mistakenly believe that this title places these professionals within the medical field, as it includes the term “physician = medico” (in Portuguese).

The Brazilian Federal Council of Medicine (CFM) unequivocally asserts that only licensed physicians are authorized to perform invasive procedures involving injections or other methods of introducing substances into the human body.^{8,9} However, inadequate regulatory oversight permits unqualified professionals, or even laypersons, to offer such services. Serious complications, including blindness caused by improper use of facial fillers, meningitis due to infections after nasal procedures, mycobacterial infections, and permanent scarring, have been shown to occur in a significant number of patients. This survey highlights that these complications often require medical interventions, multiple appointments, surgeries, and the use of advanced technologies for their management.

From a legal standpoint, the unlawful practice of medicine is considered a criminal offense under Article 282 of the Brazilian Penal Code.¹⁴ However, the

enforcement of these penalties remains lax, undermining efforts to effectively combat such practices.

Moreover, professional councils representing other health care practitioners, such as Dentists, Nurses, Physiotherapists, and “Biomedicals,” or Biophysicians, have been involved in ongoing legal and regulatory disputes with medical councils over expanding their scope of practice in aesthetic procedures.¹⁵ These professionals argue that technical expertise alone qualifies them to perform such interventions, disregarding the critical role of comprehensive medical education in ensuring patient safety.

As revealed by this survey, the consequences are alarming: Many complications resulted in patients seeking treatment either through the Public Health System (SUS), placing a significant financial strain on public health care, or through the Supplementary Health System, which led to substantial costs. This study is the first attempt to estimate the economic impact of these complications, although it has limitations, including the lack of data on state-specific costs, which are known to vary, and differing expenses across health insurance providers (see **Supplemental Digital Content 1**, Table S3, <http://links.lww.com/DSS/B683>).

A 2020 survey conducted by the Federal Council of Medicine (CFM) revealed a 30% increase in complaints related to the illegal practice of medicine, reflecting the expansion of the informal aesthetic market.¹⁶ Although the CFM estimated only 10,000 cases of unregulated medical practice, this study suggests that this number was likely underestimated. Even in other countries, such as the United Kingdom, complications arising from aesthetic procedures are more frequently reported in the media.

Among the main issues reported by the medical specialists who responded to the study were: “lack of patient awareness and patients prioritizing treatment costs over their health or the quality of care;” “patient reluctance to pursue legal action against nonmedical professionals responsible for complications;” “the lack of responsibility among nonmedical practitioners, often leaving patients without guidance;” “lack of follow-up care from the provider who performed the procedure;” and “delays in diagnosing complications.” Physicians also expressed concerns about their legal protection when treating such complications, feeling vulnerable to potential legal repercussions.



Figure 1. Example of unlawful practice of medicine. These 3 patients sought medical care after aesthetic surgery performed by 2 dentists. They mentioned that the dentists advertised themselves as “facial surgeons,” and patients were unaware they were not physicians. The advertisements were on social media, and the dentists operated in small clinics, rather than hospitals. The 3 patients had acute complications, with chronic infection, abscesses, and dehiscence. Now they present with lifelong sequelae—permanent scarring.

A particularly significant aspect of the study is the substantial economic impact of these complications on health care providers, including both public and private insurance systems, as well as on patients, who ultimately bear the costs of medications and lasers. Although the costs presented in **Supplemental Digital Content 1**, Table S3, <http://links.lww.com/DSS/B683> may vary across different countries, they provide a useful estimate of the average number of appointments, specialists, and procedures required to manage these complications. Ultimately, these expenses are often covered by taxpayers, as the burden of health care costs falls on citizens who contribute through taxes.

Although the study was conducted in a single country, it illustrates a problem of growing global concern. Recent media reports have highlighted similar issues elsewhere. In the United Kingdom, a tattooist caused severe injuries by attempting to perform aesthetic procedures (January 9, 2025).¹⁶ In the United States, 4 people associated with a Florida medical spa were taken into custody as some of the procedures were performed by a physician's assistant, rather than a licensed surgeon (March 22, 2025).¹⁷ Similarly, in Portugal, an unlicensed individual performed several aesthetic treatments with potential victims (January 9, 2025).¹⁸

Limitations of the Study

This was the first large-scale investigation to characterize the landscape of complications resulting from cosmetic procedures performed by nonphysicians in Brazil. Although it included a substantial number of respondents, the limitations that must be acknowledged include the potential incomplete distribution of the questionnaire to all physicians, the inability to determine the exact number of cases treated by nonphysicians, as well as the number of physicians of each specialty, and challenges in verifying the precise figures reported in the survey responses. Larger, prospective, multicenter studies conducted across multiple countries are now essential to more accurately quantify these complications and to compare their impact on health care systems globally.

Conclusion

More than 12% of patients who consult with medical specialists in Brazil have already undergone invasive aesthetic procedures with nonmedical providers, leading to complications that require each physician to manage an average of 5 complication cases per month, frequently requiring a multispecialist approach, and resulting in permanent scarring in a considerable number of patients.

This survey underscores the pressing need for improved regulation, clearer communication, and more comprehensive

patient education regarding aesthetic procedures and the professionals performing them. The current investigation may serve as a valuable reference for other countries facing similar challenges. Multicenter studies investigating the unauthorized practice of medicine and its role in complications arising from aesthetic procedures are warranted to assess their impact on public health.

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