



Review Article

The socio-epidemiological impact of a growing demand for cosmetic surgery in low- and middle-income countries: The case of Cameroon

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Abstract

Introduction: The global cosmetic surgery industry is expanding, but access to procedures like liposuction and Brazilian Butt Lifts in Cameroon is limited due to socioeconomic disparities. The benefits of cosmetic surgery, such as self-confidence enhancement, are tempered by health risks and ethical concerns. This scoping review explores the socio-epidemiological implications of the increasing demand for cosmetic surgery in Cameroon, emphasizing disparities, health outcomes, and regulatory needs.

Methods: The review adhered to PRISMA guidelines. A systematic search of PubMed and Google Scholar was conducted using keywords such as “cosmetic surgery in Cameroon,” “socioeconomic disparities in cosmetic surgery,” “Brazilian Butt Lift,” “health implications of cosmetic surgery,” and “public health interventions in cosmetic surgery.” Articles published between 2000 and 2024 were reviewed.

Results: No eligible study explicitly addressing the socio-epidemiological aspects of cosmetic surgery in Cameroon was identified. However, anecdotal evidence and global trends indicated a growing demand for cosmetic procedures, influenced by shifting beauty standards and media portrayal. This demand is accompanied by significant health risks, including surgical complications and psychological impacts, and exacerbates existing socioeconomic inequality, particularly income inequality and healthcare infrastructure inequalities.

Conclusion: The growing cosmetic surgery industry in the global south, including Cameroon, highlights pressing public health and regulatory challenges. The lack of culturally sensitive guidelines and equitable access to safe procedures poses patient risks and underscores the need for targeted research. Furthermore, this study reveals that growing socioeconomic disparities affect not only individuals undergoing surgery but also broader healthcare access and economic inequality. To address these issues, policymakers, healthcare providers, and community leaders must work together to promote ethical, informed practices in the cosmetic surgery sector.

Keywords: Cosmetic surgery, Socioeconomic factors, Public health policy, Health care disparities, Ethics

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Introduction

Cosmetic surgery, particularly liposuction and gluteal augmentation, has gained popularity worldwide due to its wide range of technologies.¹⁻⁵ These procedures also contribute significantly to medical tourism and travel abroad for health-related purposes.^{4,6} The demand for cosmetic surgery has increased, making luxury liposuction, mastectomy, mammoplasty, blepharoplasty,

abdominoplasty, rhinoplasty, rhytidectomy, and labiaplasty items.⁶⁻⁹ In 2020, liposuction made up 15.1% of all cosmetic surgical procedures, with 1 525 197 reported worldwide. Breast augmentation was the most common procedure, with over 1 624 281 reported. Eyelid surgery ranked third among popular surgeries, with less than 1.3 million treatments.¹⁰ In 2019, 11.36 million plastic surgery operations were performed globally.⁷ According to



projections, Cameroon's general and plastic surgery device market is expected to develop significantly, reaching an estimated US\$ 3.79 million in 2025. At a projected 6.14% annual growth rate, the market is projected to reach US\$ 4.81 million by 2029.¹¹

The demand for body enhancement operations is increasing globally due to factors such as dysmorphic disorder, dissatisfaction with body mass or shape, and shifting societal standards of beauty.¹²⁻¹⁴ Media-presented notions of the ideal physique have significantly impacted thoughts of cosmetic surgery. Celebrities and social media influencers have promoted slim bodies and big butts, leading to the era of the Big Booty.¹⁴ Liposuction and BBL are becoming more aesthetically pleasing, with the latter reshaping buttocks to create a pear-shaped or hourglass figure.^{1,2} However, Brazilian Butt Lift (BBL) treatments have the highest fatality rate, with fat embolism being the primary cause of death. Despite concerns about potential adverse health effects, liposuction and BBL are the fastest-growing cosmetic procedures globally.^{15,16}

The General & Plastic Surgery Devices market in Cameroon is experiencing significant growth, driven by evolving consumer preferences, socioeconomic changes, and macroeconomic stability.¹¹ Increasing awareness of cosmetic procedures, fueled by Western beauty standards and the rise of social media, has led to a surge in demand for aesthetic enhancements. Individuals are more conscious of their appearance and seek procedures that align with societal beauty norms, contributing to the expansion of this industry.¹¹ A key trend in the market is the growing preference for non-invasive procedures, which offer quicker recovery times and lower risks compared to traditional surgeries. Liposuction, tummy tucks, and breast augmentation are increasingly popular, particularly for body contouring and sculpting. The desire for fast results, combined with the influence of celebrity culture, has further accelerated interest in cosmetic enhancements.¹¹ Several local factors support this growth, including a rising middle class with more disposable income. As economic conditions improve, more individuals can afford cosmetic procedures, increasing overall demand.¹¹ Additionally, urbanization and globalization have enhanced exposure to international beauty trends, making cosmetic surgery more mainstream in Cameroon.¹¹ Macroeconomic stability has also played a crucial role in the market's expansion. Steady economic growth has improved living standards, encouraging spending on non-essential services such as aesthetic procedures. With increasing urbanization, more individuals are gaining access to cosmetic treatments, further propelling market growth.¹¹

This article's primary objective is to examine the socio-epidemiological impact of cosmetic surgery in Cameroon, focusing on disparities in access, cultural perceptions, health risks, and regulatory challenges. It aims to highlight

research gaps and offer policymakers, healthcare providers, and researchers insights to promote safer practices in this growing yet unregulated industry. Emphasizing the need for equitable healthcare frameworks and culturally sensitive public health interventions, the article advocates for a more structured approach to cosmetic surgery in Cameroon.

Methods

Study design

This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The objective was to examine the socio-epidemiological impacts of the increasing demand for cosmetic surgery in Cameroon, focusing on socioeconomic disparities, cultural factors, health implications, and regulatory challenges.

Search strategy

The research question was framed using the PICOS (Population, Intervention, Comparison, Outcomes, Study Design) framework:

- Population: Individuals in Cameroon.
- Intervention: Demand for cosmetic surgery and associated socio-epidemiological impacts.
- Comparison: Socioeconomic disparities and health outcomes in Cameroon.
- Outcomes: Insights into disparities, cultural influences, health risks, and regulatory challenges linked to cosmetic surgery.

Study design

This study employed a systematic review design. A comprehensive search of the literature was conducted using PubMed and Google Scholar, both selected for their accessibility and high-quality academic content. The search strategy included the following keywords: "cosmetic surgery in Cameroon," "socioeconomic disparities in cosmetic surgery," "Brazilian Butt Lift," "health implications of cosmetic surgery," and "public health interventions in cosmetic surgery." Boolean operators were applied to refine the search and enhance the relevance of results.

Inclusion criteria were peer-reviewed studies published between 2000 and 2024 that focused on the socio-epidemiological aspects of cosmetic surgery in Cameroon. Eligible studies addressed themes such as socioeconomic disparities, cultural influences, health outcomes, and regulatory or policy challenges related to cosmetic procedures. Articles that fell outside the scope of these themes were excluded from the review.

Study selection

The study selection process was carried out in three stages:

Title and abstract screening: Two independent reviewers

screened the titles and abstracts of all identified articles to determine their relevance. Articles that did not meet the inclusion criteria were excluded at this stage.

Full-text review: The full texts of articles passing the initial screening were retrieved and thoroughly reviewed. The two reviewers assessed each study independently against the inclusion criteria, which focused on socio-epidemiological aspects of cosmetic surgery in Cameroon or similar low- and middle-income countries. Discrepancies between reviewers were resolved through discussion, and if necessary, a third reviewer was consulted to achieve consensus.

Final inclusion: Only studies that fully satisfied the inclusion criteria after the full-text review were included in the final analysis.

Data extraction and analysis

Given this gap in the literature, this review underscores the need for research specifically examining the socioeconomic aspects of cosmetic surgery in Cameroon. The study primarily focused on socio-economic disparities associated with cosmetic surgery, such as income inequality, accessibility challenges, and financial burdens on different demographic groups. Understanding these socio-economic dimensions is essential for developing equitable public health policies and regulatory measures to ensure safe and ethical cosmetic procedures.

Results

A total of 6159 records were identified through database searches, with 5159 from PubMed and 1000 from Google Scholar. After the initial screening process, 6153 records were excluded due to failure to meet the inclusion criteria. The full-text review assessed six articles for eligibility, but all were excluded as they were conducted outside Cameroon. Additionally, seven records identified through citation searches were excluded for similar reasons (Figure 1). This highlights a significant gap in the literature regarding the socio-epidemiological aspects of cosmetic surgery in Cameroon.

Key findings

Absence of Cameroon-specific studies

There are no studies specifically about Cameroon. The socio-epidemiological effects of cosmetic surgery in Cameroon were not explicitly covered in any study. Previous studies have mainly concentrated on other regions, incredibly wealthy nations with well-established industries.

Increasing demand for cosmetic surgery

Anecdotal evidence points to a rising demand for cosmetic procedures in Cameroon despite the lack of direct studies. Social media, medical tourism, and international beauty standards all impact this trend.

Health risks and medical infrastructure challenges

The healthcare system in Cameroon is insufficient

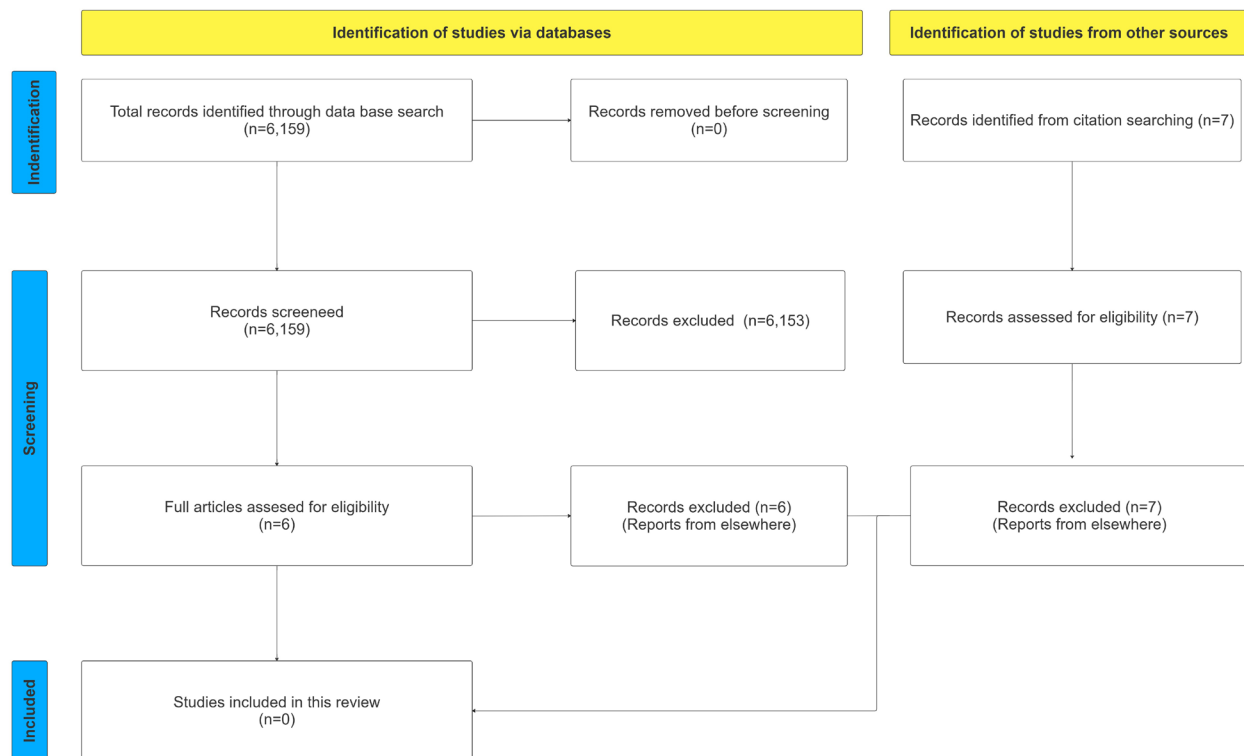


Figure 1. Prisma flow diagram

to guarantee the safe practice of cosmetic surgery. Post-operative care facilities, anesthesiologists, and skilled plastic surgeons are in short supply. As a result, many people might turn to unlicensed or uncertified professionals, which raises the possibility of mistakes, infections, and potentially fatal consequences.

Social and economic inequalities

Cosmetic surgery remains inaccessible primarily to lower-income populations due to high costs. Additionally, people in rural areas have limited access because qualified professionals are mainly concentrated in urban areas like Douala and Yaoundé. Additionally, because wealthier people can afford procedures that uphold the beauty standards promoted by Western media, socioeconomic disparities make body image dissatisfaction worse.

Ethical issues and regulatory gaps

Cameroon lacks a clear regulatory framework for cosmetic surgery, which could result in uneven safety requirements and moral dilemmas about patient education and informed consent. Furthermore, there are risks to patient's health due to the commercialization of beauty and the growing demand for procedures without sufficient legal oversight.

Media impact and cultural influences

Due to social media and Western influences, Cameroon's traditional beauty standards are changing, which is driving up demand for body modification procedures. More people, especially young women, may consider cosmetic enhancements despite the risks because of the pressure to fit in with predetermined body shapes and features.

Discussion

This study aimed to investigate the socio-epidemiological effects of Cameroon's rising demand for cosmetic surgery, paying special attention to socioeconomic inequality, cultural factors, safety concerns, and regulatory obstacles. The main conclusion of this review was that, despite anecdotal reports of comparable trends in Cameroon and evidence of rising demand for cosmetic treatments worldwide, there were no studies explicitly addressing these elements in the Cameroonian context. A more significant problem of little focus on the socio-epidemiological aspects of cosmetic surgery in low- and middle-income nations is brought to light by this notable research gap. Several factors could be responsible for this area's lack of relevant research. Firstly, Cameroon's research infrastructure issues, including restricted access to databases, a lack of technology resources, and a lack of researchers with expertise in cosmetic surgery, may make it more difficult to research this subject. Secondly, priority for infectious diseases and other pressing public health

issues are frequently redirected by developing countries' limited research resources for non-communicable diseases and elective surgeries. Furthermore, the worldwide academic community has traditionally focused on high-income nations where the business is more established and well-documented, paying less attention to developments in cosmetic surgery in low- and middle-income countries.

Sociocultural dynamics of beauty standards

Like many other civilizations, Cameroonian beauty standards have their roots in sociocultural factors that have changed over time.¹⁷ These norms are dynamic and shaped by the intricate interactions between indigenous customs, historical legacies, and modern global influences.¹⁸ Historically, pre-colonial customs that defined beauty and identity via body ornamentation, scarification, and ceremonial rites have influenced Cameroonian beauty standards. Every ethnic group had different traditions, and every society had its standards of beauty, which were frequently connected to social standing and cultural customs.

However, the colonial encounter brought new beauty standards against Indigenous norms. During colonial rule, Cameroonian culture was subjected to European beauty standards, including characteristics like light complexion, slim bodies, and Eurocentric facial features. The marginalization of Indigenous beauty rituals and the maintenance of ideas of racial hierarchy and superiority were both caused by this imposition. Many indigenous beauty traditions survived these colonial impacts, showing how resilient traditional cultural values are to outside forces. Modernization and globalization have had fresh effects on beauty standards today, including in Cameroon. Western media, social media sites, and celebrity culture widely spread idealized representations of beauty. These representations frequently give priority to slimness and Eurocentric traits.^{17,19-21} To meet Western beauty standards, young Cameroonian people are increasingly turning to cosmetic surgery, skin bleaching, and hair straightening. This pattern draws attention to how globalized media shapes beauty standards and the threats it presents to cultural authenticity and self-worth.

Cameroonian culture exhibits persistence in honoring cultural variety and conserving traditional beauty rituals, even in the face of globalization. Movements that support Afrocentric beauty, natural hair, and traditional clothing subvert Eurocentric standards and encourage people to value their cultural background. Initiatives that support diversity and self-expression while advancing body positivity, inclusion, and self-acceptance also aim to redefine beauty beyond constrictive norms.

Socioeconomic disparities and access to cosmetic surgery

Similar to many other low- or middle-income countries, access to cosmetic surgery in Cameroon is not equally

distributed, which reflects socioeconomic gaps that restrict the price and accessibility of these operations for many people.^{11,22} Even though many people consider cosmetic surgery a luxury only available to the wealthy, its rising popularity in Cameroon has brought attention to problems with fairness and access in the healthcare system.

The high cost of cosmetic surgeries is one of the main obstacles to receiving such care in Cameroon. Most Cameroonians, especially those from lower socioeconomic strata, may find it financially unfeasible to have cosmetic procedures like liposuction, rhinoplasty, and breast augmentation. Many people's disposable income may not cover the costs of consultation, surgery, anesthesia, and post-operative care, making cosmetic surgery unaffordable for a sizeable section of the population.^{22,23}

In addition, the distribution of skilled practitioners and facilities for cosmetic surgery in Cameroon is heavily concentrated in metropolitan areas, exacerbating disparities in access to care. Significant cities like Douala and Yaoundé are more likely to have skilled surgeons and specialized cosmetic surgery centers, while rural areas often lack such facilities. This regional imbalance, inadequate healthcare infrastructure, and transportation challenges make it difficult for individuals in remote or underserved areas to access cosmetic surgery.

Furthermore, the shortage of surgeons and anesthesiologists, especially in low- and middle-income countries like Cameroon, further exacerbates these challenges. This shortage affects the timely, safe, and affordable delivery of essential and life-saving surgical procedures. As highlighted by Holmer et al., there is a significant global disparity in the distribution of surgeons, anesthesiologists, and obstetricians, which is evident in Cameroon's healthcare system.²⁴ Cameroon has approximately 11 qualified health workers for every 10 000 people, significantly below the World Health Organisation's (WHO's) minimum threshold of 22.3 per 10 000. According to the Africa Health Workforce Observatory, Cameroon has around 1.1 physicians per 10 000 people, far below the WHO's recommended standard of 10 per 10 000. This ratio is even worse in rural areas, with fewer than one physician per 10 000 people.²⁵

Cultural standards and beliefs about attractiveness also impact socioeconomic disparities regarding the availability of cosmetic surgery. Even though everyone wants to look better, views regarding cosmetic surgery and willingness to pursue such operations might be influenced by sociocultural variables. Cosmetic surgery may have a stigma in some cultures, especially among conservative or traditionalist groups that consider it frivolous or vapid. Furthermore, persistent socioeconomic gaps may exacerbate feelings of inferiority and inadequacy in those unable to afford cosmetic operations, hence exacerbating

differences in body image and self-esteem.

Health implications and ethical considerations

Cosmetic surgery has inherent health hazards and raises significant ethical questions, even though it is frequently seen to improve one's physical appearance and self-esteem. It is critical to look at the possible health effects and moral dilemmas related to cosmetic treatments in Cameroon, where their popularity is growing.^{26,27}

One of the primary health implications of cosmetic surgery is the risk of surgical complications and adverse outcomes. The possibility of surgical complications and unfavorable results is one of the leading health effects of cosmetic surgery. Adverse effects such as infection, bleeding, anesthesia complications, and scarring are inherent risks associated with procedures like liposuction, rhinoplasty, and breast augmentation.⁸ The chance of problems can also be increased using non-sterile equipment or providing inadequate post-operative care, especially with weak regulatory control. Additionally, if some cosmetic operations are not carried out by experienced practitioners in recognized institutions, there is an increased risk of fat embolism and even death.^{28,29}

Moreover, people may endure psychological fallout from pursuing cosmetic surgery, especially if their expectations are not fulfilled or if they feel unsatisfied after the procedure. Psychological hazards connected with cosmetic surgery include body dysmorphia, melancholy, and anxiety, especially when people have several surgeries to meet an unachievable standard of beauty. Furthermore, those who have cosmetic treatments may have psychological anguish and worsening body image problems because of social pressure to meet idealized beauty standards.^{30,31}

Ethical concerns around cosmetic surgery include patient autonomy, informed consent, and cultural sensitivity.³² In addition to receiving their permission willingly and free from pressure, patients must be thoroughly educated about the adverse effects, advantages, and alternatives associated with cosmetic surgery. A culturally sensitive communication strategy is necessary to ensure informed consent, which can be difficult when limited literacy or cultural beliefs may affect decision-making. Additionally, while proposing or carrying out cosmetic operations, healthcare providers must respect the ethical precepts of beneficence (acting in the patient's best interest) and non-maleficence (not harm).^{33,34}

Lastly, more general ethical concerns regarding justice, injustice, and societal values are brought up by the medicalization of beauty and the commercialization of cosmetic surgery. The use of funds for cosmetic surgery may be viewed as unethical in a nation where many people still have limited access to essential healthcare services. Particularly when resources are limited, policymakers, healthcare professionals, and society must consider the moral ramifications of placing cosmetic operations ahead

of critical medical requirements.

Public health interventions and regulatory measures

Regulations and public health initiatives are vital to guarantee cosmetic surgical procedures' safety, efficacy, and ethical practice,³⁵ as they become increasingly common in Cameroon. The promotion of body positivity, education on the advantages and disadvantages of cosmetic surgery, and the ability for people to make educated decisions about their looks and health are all possible through public health intervention. Nevertheless, regulatory actions can also improve supervision, assist in setting standards of care, and shield patients from dishonest medical professionals (Figure 2).

Public health interventions

Education and awareness campaigns: Besides promoting body positivity and self-acceptance, public health campaigns may spread knowledge about the advantages, disadvantages, and alternatives to cosmetic surgery. These campaigns may reach various populations throughout Cameroon by utilizing a range of venues, including radio, television, social media, and community engagement initiatives.

Cultural sensitivity training: Public health interventions should be culturally sensitive and customized to reflect the unique beliefs, values, and customs of various populations, considering Cameroon's diverse cultural landscape. Educating healthcare professionals in cultural competency can assist in fostering an understanding of multiple viewpoints on appearance and attractiveness, as well as open and courteous conversation with patients.

Prevention of unlicensed practice: Public health authorities can try to stop unlicensed practitioners from doing cosmetic surgery by enforcing rules and licensing

requirements. Shielding patients from unfit persons who might not follow safety procedures or have the necessary training can lower the chance of surgical problems and unfavorable results.

Promoting a healthy body image: Public health initiatives may help people develop a positive body image and self-esteem by questioning arbitrary beauty standards and embracing variety. Individuals can be empowered to accept their distinctive looks and fight cultural pressures to conform to restricted beauty norms through school-based initiatives, community seminars, and media literacy campaigns.

Regulatory measures

Licensing and accreditation: It is possible to guarantee that only competent people with the proper education and qualifications carry out cosmetic surgery treatments by establishing licensing criteria and accreditation standards for clinics and practitioners. Regulatory bodies can regularly audit and inspect to monitor quality and safety requirements adherence.

Informed consent guidelines: Regulatory organizations can provide criteria for getting patients' informed consent for cosmetic surgery, ensuring that the patients are entirely aware of the procedure's adverse effects, advantages, and alternatives. The significance of free decision-making and respect for patient autonomy must be emphasized in these guidelines.

Reporting and surveillance systems: Putting in place reporting and surveillance systems can make it easier to keep track of unfavorable incidents and observe patterns in the results of cosmetic surgery. To allow for timely investigation and action, healthcare institutions and practitioners should be mandated to report problems,

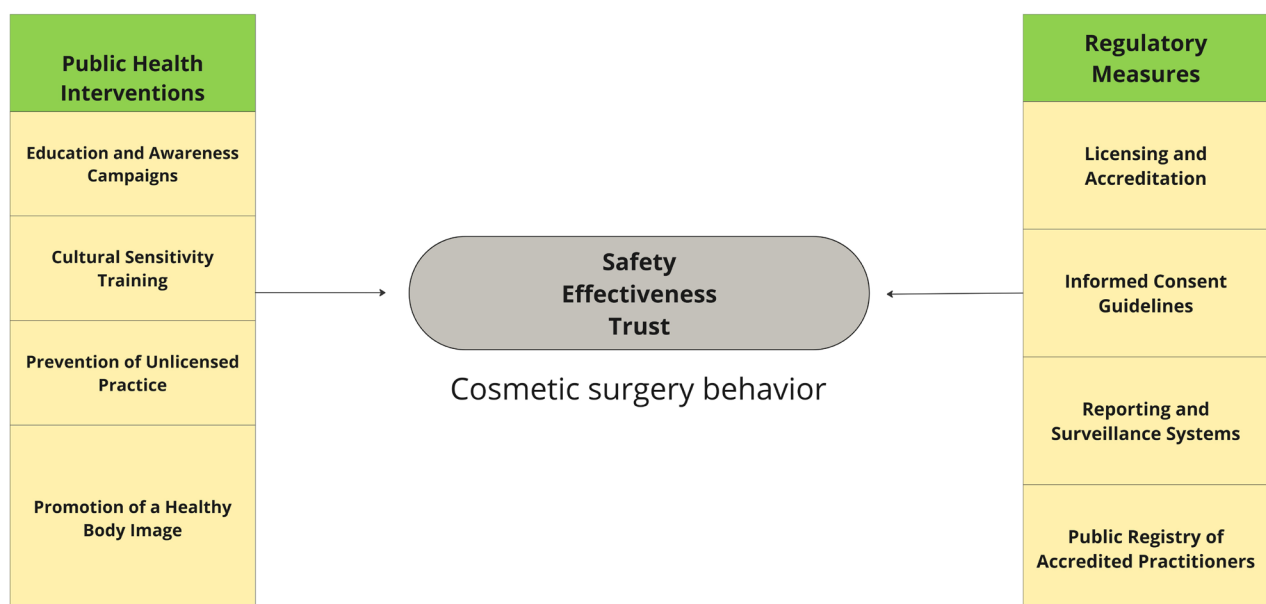


Figure 2. Recommended public health interventions and regulatory measures in cosmetic surgical procedures in Cameroon. These measures collectively will contribute to a safer, more effective, and more trusted cosmetic surgery landscape in Cameroon.

infections, and other unfavorable results to regulatory authorities when necessary.

Public registry of accredited practitioners: Patients pursuing cosmetic operations can benefit from accountability and openness by creating a public registry of accredited cosmetic surgery clinics and practitioners. Before having surgery, people can use this register as a reference to confirm the credentials and training of their healthcare practitioners.

Strengths and limitations

One of this review's many strong points is using a methodical approach guided by PRISMA to guarantee transparency and thoroughness. The emphasis on Cameroon offers insightful information on a setting frequently overlooked in writing on global health. Furthermore, a more sophisticated assessment of the trends in cosmetic surgery in low- and middle-income nations is made possible by the review's emphasis on socio-epidemiological aspects. This review has some limitations. The reliance on only two databases, PubMed and Google Scholar, may have excluded relevant studies, affecting the comprehensiveness of the findings. Additionally, the scarcity of research on cosmetic surgery in Cameroon limits the generalizability of the results and highlights the need for further studies in this context.

Conclusion, implications, and future directions

The growing demand for cosmetic surgery in Cameroon highlights the necessity of extensive regulatory and public health initiatives. This trend's underlying health dangers and social inequalities demand immediate attention, even though it is driven by globalization and changing beauty standards. The lack of focused studies draws attention to a crucial research void that must be filled to guide practice and policy.

Future research should prioritize the socio-epidemiological dynamics of cosmetic surgery in Cameroon, emphasizing aspects linked to culture, economy, and health. A deeper understanding of the reasons behind, results from, and consequences of cosmetic treatments can be gained through longitudinal studies and qualitative research. Stakeholders and policymakers must work together to create fair healthcare frameworks and culturally relevant rules that guarantee the ethical and safe practice of cosmetic surgery. Encouraging body acceptance and educating the public about the advantages and disadvantages of these treatments are also crucial steps in improving public health outcomes and promoting informed decision-making.

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Competing Interests

The authors declare that they have no competing interests.

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