
Vaginal Rejuvenation Aesthetic Gynecology and Genital Cosmetic Surgery: A Survey

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Abstract

Vaginal rejuvenation and aesthetic gynecology have gained prominence within women's health, addressing both cosmetic and functional concerns of the female genitalia. This survey explores the multifaceted landscape of surgical and non-surgical treatments, including procedures like labiaplasty and non-invasive methods such as energy-based devices. The rising demand for these interventions is driven by factors such as vaginal laxity and societal pressures, impacting women's genital self-image and sexual health. The survey highlights the psychological and physical outcomes of these procedures, noting improvements in self-esteem and quality of life, while also addressing ethical and regulatory challenges. The lack of robust long-term data and FDA approval for certain non-invasive devices underscores the need for further research. Emphasizing patient-centered care and informed consent, the survey advocates for comprehensive training and culturally sensitive approaches to enhance patient satisfaction and safety. Future directions include developing standardized guidelines and exploring the psychosocial dimensions of genital aesthetics. Ultimately, this survey contributes to the ongoing discourse on aesthetic gynecology, aiming to foster a nuanced understanding of its implications on women's health and societal norms.

1 Introduction

1.1 Overview of Vaginal Rejuvenation and Aesthetic Gynecology

Vaginal rejuvenation and aesthetic gynecology have gained prominence within women's health, focusing on both functional enhancements and cosmetic improvements of the female genitalia. These interventions address a spectrum of concerns, from aesthetic preferences to functional impairments, thereby improving sexual health and alleviating psychological issues such as body image dissatisfaction and low self-esteem [1]. Interventions range from surgical options like labiaplasty and vaginoplasty, which modify genital structures for aesthetic or functional purposes [2], to non-surgical techniques, including energy-based devices and dermal fillers, favored for their minimal recovery times and safety perceptions [3].

The rising interest in these procedures is influenced by factors such as vaginal laxity, often resulting from pelvic floor trauma, adversely affecting sexual function and overall quality of life [4]. Energy-based devices have shown efficacy in managing functional vaginal issues, providing a less invasive means to enhance tissue health and restore genital function, including treatment for genitourinary syndrome of menopause (GSM), characterized by symptoms like vaginal dryness and irritation due to decreased estrogen levels.

Topical therapies for vulvovaginal atrophy, prevalent among menopausal women, are increasingly recognized, expanding the scope of non-invasive treatments [5]. The intersection of traditional practices, such as female genital mutilation/cutting (FGM/C), with contemporary cosmetic procedures like labiaplasty prompts critical discussions about aesthetic norms and their impact on body image [6]. Additionally, the influence of genital self-image on sexual satisfaction and stress, particularly in

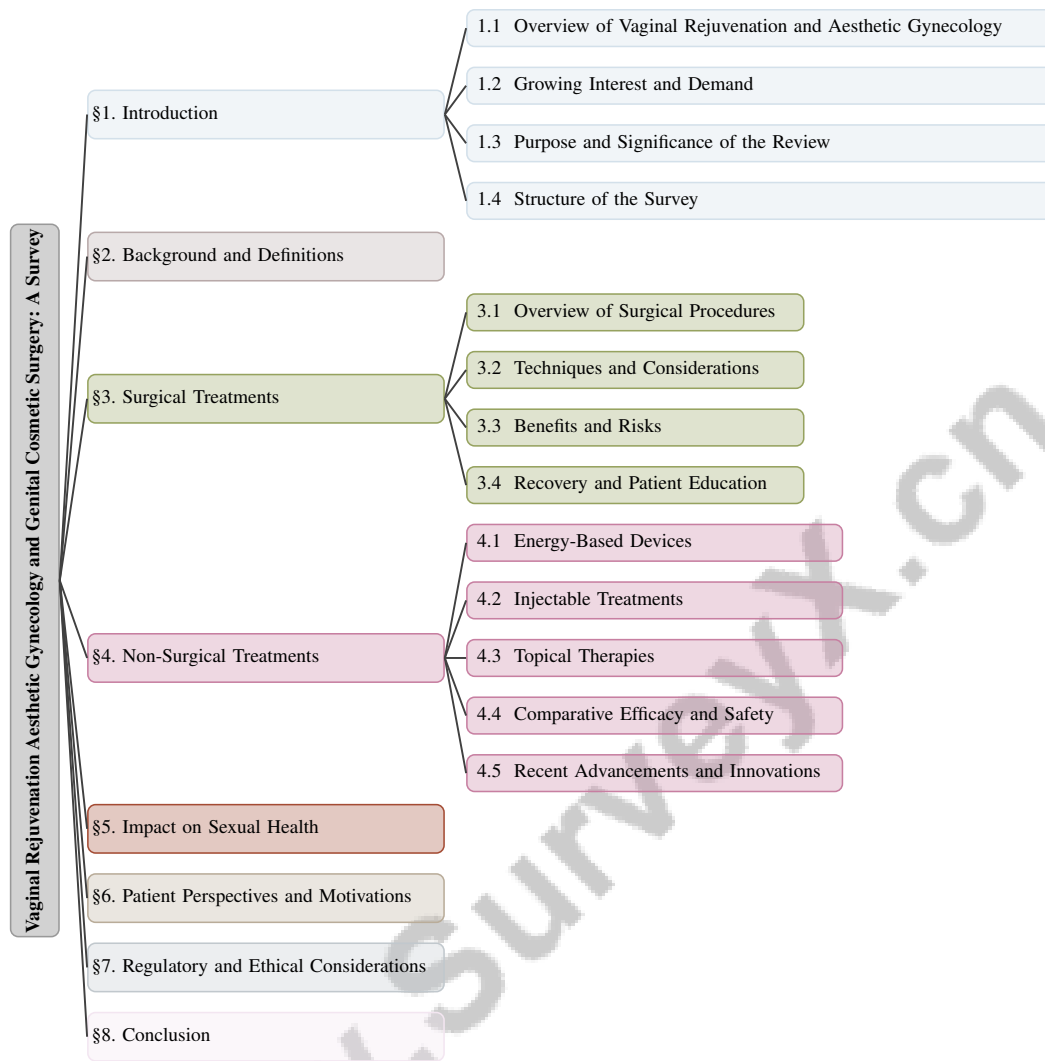


Figure 1: chapter structure

postpartum women, highlights the biological, psychological, and social factors affecting women's sexual health [7]. As the field evolves, addressing regulatory and ethical considerations is vital to ensure patient safety and informed consent practices. This survey aims to provide a comprehensive overview of vaginal rejuvenation and aesthetic gynecology, examining diverse treatment modalities and their potential impacts on women's health and well-being.

1.2 Growing Interest and Demand

The global demand for vaginal rejuvenation, aesthetic gynecology, and genital cosmetic surgery has markedly increased, driven by medical, cultural, and psychological factors. In India, the rising interest in female genital cosmetic surgery (FGCS) reflects broader global trends [8]. Similarly, the UK has experienced a normalization and commercialization of these procedures, supported by various studies and statistical analyses [9]. This trend extends beyond Western countries; in Iran, the growing popularity of FGCS is influenced by psychological factors affecting women's body image within a previously under-researched cultural context [10].

Vaginal laxity, often resulting from aging and childbirth, is a significant concern linked to sexual dysfunction, contributing to the demand for effective treatments. This condition, along with urinary incontinence, urogenital prolapse, and vaginal atrophy, underscores the dual cosmetic and functional motivations prompting women to seek these procedures [11]. Distinguishing between purely aesthetic

desires and genuine medical needs remains challenging, as motivations for undergoing FGCS often overlap [12].

The increasing interest in these procedures correlates with a broader awareness of female genital self-image, influenced by various societal factors [1]. The historical and cultural implications of FGCS further emphasize the complex interplay between societal norms and individual choices [13]. As the field evolves, scrutiny of the safety and efficacy of noninvasive procedures, particularly those utilizing laser and radiofrequency technologies, is essential to meet the growing demand without compromising patient safety [14]. This survey aims to explore the increasing interest in genital rejuvenation interventions, addressing both functional and aesthetic aspects in men and women [15].

1.3 Purpose and Significance of the Review

This survey's primary objective is to explore the intricate realm of female genital cosmetic surgery (FGCS) and aesthetic gynecology, illuminating the socio-cultural and medical dynamics influencing current practices and perceptions. This examination is crucial in addressing the escalating concerns regarding women's dissatisfaction with their genital appearance, significantly fueling the surge in FGCS procedures [16]. By focusing on aesthetic gynecology, the survey aims to tackle both aesthetic and functional concerns of the female genitalia, particularly those affected by childbirth, aging, and personal aesthetic aspirations [12].

The survey investigates the normalization of aesthetic surgery and its impact on individual identity and societal perceptions of bodily differences, thus highlighting the broader cultural and psychological dimensions influencing these procedures [17]. By comparing genital self-image and sexual function in women with and without a history of cosmetic procedures, the survey addresses the knowledge gap regarding the long-term effects of such interventions [18]. Furthermore, it discusses noninvasive management options for functional vaginal problems, such as GSM, sexual dysfunction, vaginal laxity, and stress urinary incontinence (SUI), to provide a holistic view of available interventions.

In addition to the psychological and healthcare insights gained from comparing women seeking FGCS with those uninterested in such surgeries, this survey aims to highlight unspoken aesthetic gynecological conditions and their treatment options, emphasizing the need for awareness among women [14]. By offering a consensus-based overview of reconstructive and aesthetic surgeries on female genitalia, this survey aspires to establish evidence-based guidelines that ensure patient safety and informed decision-making [19].

Ultimately, this survey addresses the growing interest and concerns surrounding aesthetic gynecologic procedures, emphasizing the medical and aesthetic issues these interventions aim to resolve, such as dyspareunia and excessive labial skin. Through this comprehensive examination, the survey seeks to contribute to the ongoing discourse on FGCS and aesthetic gynecology, fostering a deeper understanding of their implications for women's health and societal norms. Additionally, it explores the increasing demand for aesthetic gynecology among patients and physicians, assessing the current state of training and techniques available in this field [20]. It also examines the relationship between genital self-image and its impact on sexual satisfaction and stress in postpartum women [7], while considering the growing demand for genital rejuvenation procedures among both men and women and the medical and cosmetic implications of these interventions [15]. The focus on topical treatments for vulvovaginal atrophy, including hormonal and non-hormonal therapies, further enriches the survey's exploration of non-invasive options [5].

1.4 Structure of the Survey

This survey is meticulously organized to provide a comprehensive exploration of vaginal rejuvenation, aesthetic gynecology, and genital cosmetic surgery. The paper begins with an **Introduction**, setting the stage for understanding the growing interest and demand for these procedures and articulating the purpose and significance of this review. Following the introduction, the survey delves into the **Background and Definitions**, offering a historical context and clear definitions of key terms. This section categorizes various procedures into surgical and non-surgical types, providing a foundational understanding of available interventions.

The subsequent section, **Surgical Treatments**, examines in detail surgical options such as labiaplasty, vaginoplasty, and clitoral hood reduction, discussing techniques, benefits, risks, and critical aspects

of patient education and informed consent. Following this, the survey explores **Non-Surgical Treatments**, focusing on energy-based devices, injectables, and topical therapies, while evaluating the comparative efficacy and safety of non-surgical versus surgical methods and highlighting recent advancements.

The analysis then examines the effects of various surgical and non-surgical interventions on , focusing on both psychological and physical outcomes. It includes a comparison of sexual activities and experiences among women who have undergone FGCS versus those who have not, revealing significant differences in sexual satisfaction, genital self-image, and related psychological well-being. Findings indicate that while FGCS may alter perceptions of genital appearance, it does not necessarily lead to improved sexual function or self-image, suggesting a complex interplay between surgical interventions and sexual health outcomes [17, 16, 21]. The survey then shifts to **Patient Perspectives and Motivations**, exploring societal, cultural, and personal factors influencing the decision to undergo aesthetic gynecological procedures, including media's role.

The section on provides an overview of the legal and ethical frameworks governing aesthetic gynecologic procedures. It highlights the necessity of adhering to research-driven and evidence-based guidelines to ensure patient safety and informed consent, while addressing the psychological and social implications of these surgeries on women's self-image and well-being. This discussion underscores the importance of patient education and the need for ethical practices that respect individual autonomy and promote a nuanced understanding of bodily diversity [13, 22, 9, 16]. Finally, the **Conclusion** synthesizes key findings, reflecting on future directions, challenges, and the importance of patient-centered care and ongoing research in this evolving field. The following sections are organized as shown in Figure 1.

2 Background and Definitions

2.1 Historical Context and Development

The development of vaginal rejuvenation and aesthetic gynecology is intertwined with evolving societal views on female genitalia and advancements in medical techniques [13]. The demand for these procedures has risen, necessitating standardized approaches that address both aesthetic and functional concerns [2]. While primarily focused on cosmetic interventions, issues like genital self-image and sexual function remain crucial [21]. A notable challenge is the lack of awareness and treatment options for common gynecological conditions affecting women's quality of life [11]. Historical practices such as female genital mutilation/cutting (FGM/C) offer a framework for understanding contemporary aesthetic procedures and cultural beliefs [6]. This historical perspective is vital for comprehending the interplay between cultural norms, medical innovations, and motivations behind modern cosmetic procedures. The survey also considers a broader spectrum of interventions, including vaginal and scrotal rejuvenation through various techniques [15]. While some studies categorize interventions into educational, exercise, and counseling approaches [18], this survey focuses on the historical evolution and current applications of female genital procedures.

2.2 Definitions and Key Terms

Aesthetic gynecology, or Female Genital Cosmetic Surgery (FGCS), encompasses procedures aimed at enhancing both aesthetic and functional aspects of the female genitalia. These are categorized into surgical and non-surgical treatments addressing cosmetic and functional concerns [15]. Surgical options like labiaplasty and vaginoplasty modify genital structures to improve appearance or alleviate discomfort, whereas non-surgical alternatives, such as laser and radiofrequency therapies, target conditions like vaginal laxity and genitourinary syndrome of menopause (GSM) [14]. GSM, characterized by symptoms such as vaginal dryness and reduced sexual function, significantly impacts women's quality of life, especially post-menopause [5].

A core component of FGCS is female genital self-image, which involves women's perceptions and experiences of their genitalia. Influenced by cultural norms and media portrayals, negative self-image can affect sexual health and satisfaction, underscoring the psychological dimensions of these procedures [18, 7]. The survey categorizes genital rejuvenation interventions based on specific changes to the genitalia, providing a structured understanding of the diverse motivations and outcomes associated with these procedures [15].

Furthermore, the survey examines the ethical and cultural implications of FGCS in the context of traditional practices like FGM/C, advocating for a nuanced understanding that respects cultural traditions while addressing aesthetic desires [6]. By defining these key terms and concepts, the survey offers a comprehensive perspective on the multifaceted nature of aesthetic gynecology and its profound impact on women's health and well-being.

2.3 Types of Procedures: Surgical

Female Genital Cosmetic Surgery (FGCS) includes a range of surgical interventions aimed at enhancing the aesthetic and functional attributes of the female genitalia. Key procedures comprise labiaplasty, clitoral hood reduction, and vaginoplasty, each tailored to specific patient needs [20]. Labiaplasty, a prevalent FGCS procedure, involves reshaping the labia minora or majora to alleviate discomfort or dissatisfaction [20]. Often performed alongside clitoral hood reduction, it aims to enhance aesthetic outcomes and potentially improve sexual satisfaction by increasing clitoral exposure [20].

Vaginoplasty focuses on tightening the vaginal canal, commonly sought post-childbirth or due to aging, with the objective of enhancing sexual function and satisfaction [20]. These surgical techniques demand meticulous planning, considering anatomical variations and patient-specific factors for optimal results. The fractional micro-ablative CO₂ laser exemplifies technological integration, stimulating vaginal tissue regeneration and offering an innovative approach to rejuvenation [23].

Despite advancements, challenges persist, including societal taboos around genital procedures and a lack of awareness about genital anatomy. Motivations for these surgeries are deeply intertwined with psychological and sociocultural factors, reflecting a complex interplay between individual desires and societal influences. Understanding the various surgical options, alongside their techniques and considerations, enables healthcare providers to guide patients in making informed decisions aligned with their aesthetic and functional goals. This comprehensive approach ensures FGCS procedures are conducted with high standards of care and ethical consideration, addressing both psychological and physical dimensions of women's health. Recognizing the growing demand for FGCS, this practice emphasizes women's autonomy in making informed decisions about their bodies, while underscoring the importance of physicians being well-versed in potential risks and benefits [24, 12].

2.4 Types of Procedures: Non-Surgical

Non-surgical options for vaginal rejuvenation have gained prominence due to their minimally invasive nature and reduced recovery times compared to surgical methods. Among these, energy-based devices and injectables are notable modalities. Energy-based treatments, such as CO₂ and Er:YAG lasers, are extensively used for conditions like genitourinary syndrome of menopause (GSM) and urinary incontinence [25]. These devices deliver controlled thermal energy to the vaginal tissue, promoting collagen remodeling and enhancing tissue elasticity [26]. The fractional CO₂ laser technique is particularly noted for stimulating tissue regeneration and healing, offering a promising non-surgical approach to rejuvenation [23].

Injectables, such as dermal fillers, have emerged as viable options for addressing vaginal laxity. These fillers enhance genital appearance and improve sexual function by increasing tissue volume and elasticity [27]. The use of dermal fillers represents a novel, non-invasive strategy aligning with patients' aesthetic and functional goals seeking alternatives to surgery.

Non-surgical procedures in cosmetic gynecology offer numerous advantages, including minimal recovery time, a lower likelihood of complications, and the ability to effectively address a range of aesthetic and functional issues, such as urinary incontinence, vaginal atrophy, and pelvic organ prolapse. Utilizing advanced techniques like energy-based devices and injectables, these treatments rejuvenate the vulvovaginal area, enhancing both physical appearance and quality of life for women experiencing age-related changes or postpartum concerns [22, 11, 3]. As technology continues to evolve, these treatments are expected to play an increasingly pivotal role in aesthetic gynecology, providing patients with safe and effective options for enhancing genital health and appearance.

Category	Feature	Method
Techniques and Considerations	Personalized Medical Strategies	VRS[4]
	Combined Aesthetic Techniques	LPRP[19]
Benefits and Risks	Minimally Invasive Procedures	FMAC2L[23], FGCS[8]
Recovery and Patient Education	Non-Invasive Procedures	DFT-VR[27]

Table 1: This table provides a comprehensive summary of the various methods and techniques employed in aesthetic gynecology, highlighting personalized medical strategies and combined aesthetic techniques. It categorizes the methods based on their techniques and considerations, benefits and risks, and recovery and patient education, thereby offering a structured overview of the current advancements in the field.

3 Surgical Treatments

Advancements in aesthetic gynecology have significantly enhanced surgical treatments aimed at improving both the aesthetic and functional aspects of female genitalia. These procedures address individual concerns about genital appearance and self-image, contributing to sexual satisfaction and psychological well-being, as improved genital self-image is linked to increased sexual satisfaction and reduced sexual distress [17, 18, 7]. A detailed overview of these surgical procedures is crucial, focusing on the techniques and considerations necessary for optimal patient outcomes. Table 2 provides a comprehensive comparison of the surgical methods and considerations in aesthetic gynecology, detailing the purposes, techniques, and considerations associated with labiaplasty, vaginoplasty, and perineoplasty. Additionally, Table 1 presents a detailed categorization of the surgical methods and considerations in aesthetic gynecology, emphasizing their benefits, risks, and patient education aspects.

3.1 Overview of Surgical Procedures

Aesthetic gynecology includes various surgical procedures designed to enhance the female genitalia's aesthetic appearance and functional integrity. Central to these is labiaplasty, which modifies the labia for aesthetic purposes and often includes clitoral hood reduction to improve sexual function and appearance [12]. Vaginoplasty addresses vaginal laxity by tightening the vaginal canal, thus improving sexual function and alleviating laxity symptoms [4]. Perineoplasty, often performed with vaginoplasty, restores the perineal area, enhancing overall vaginal rejuvenation [12]. Innovative approaches like combining lipofilling and platelet-rich plasma (PRP) are emerging for vaginal rejuvenation, potentially alleviating atrophy and conditions such as lichen sclerosus [19]. The use of fractional micro-ablative CO2 laser technology, now adapted in aesthetic gynecology, promotes tissue regeneration and improves vaginal mucosa health [23]. While some positive outcomes from vaginal energy devices are reported, the evidence is limited by study quality [25]. Different surgical techniques, such as linear excision and wedge resection for labiaplasty, are assessed based on effectiveness and patient satisfaction, emphasizing the importance of tailoring interventions to individual needs [20]. By combining various surgical procedures, practitioners aim to address both aesthetic and functional aspects, ensuring comprehensive care and optimal outcomes [8].

3.2 Techniques and Considerations

Surgical procedures in aesthetic gynecology require meticulous attention to detail and a thorough understanding of anatomical and patient-specific considerations. Labiaplasty can be performed using techniques such as the trim method, which excises the labia minora's outer edge for symmetry, and the wedge resection method, which removes a wedge-shaped section while preserving the natural edge, potentially reducing complications like scarring and sensation changes [20]. Clitoral hood reduction requires careful dissection to avoid compromising the clitoris's neurovascular supply, ensuring both aesthetic enhancement and preservation of sexual function [12]. Vaginoplasty involves tightening the vaginal canal through excision of redundant mucosa and reinforcement of pelvic floor muscles, necessitating a thorough preoperative assessment to tailor the surgical approach [4]. Perineoplasty, often performed with vaginoplasty, restores the perineal body and enhances outcomes [12]. Advanced techniques like lipofilling and PRP highlight the evolving landscape of surgical interventions, offering a synergistic approach to aesthetic and functional enhancement [19].

To further elucidate the categorization of these techniques, Figure 2 illustrates the division between surgical and non-surgical procedures in aesthetic gynecology, alongside key patient considerations. This figure emphasizes the importance of personalized care and ongoing education in enhancing patient outcomes. Patient education and informed consent are crucial, ensuring realistic expectations and understanding of potential risks and benefits. Psychological and cultural factors significantly influence satisfaction and perceived success. By examining the technical aspects and considerations, practitioners can improve outcomes and enhance satisfaction. Personalized care that accounts for individual preferences and anatomical variations is essential for minimizing complications and enhancing well-being. As demand grows, ongoing education and training in both surgical and non-surgical techniques are vital [11, 22, 20, 24, 2].

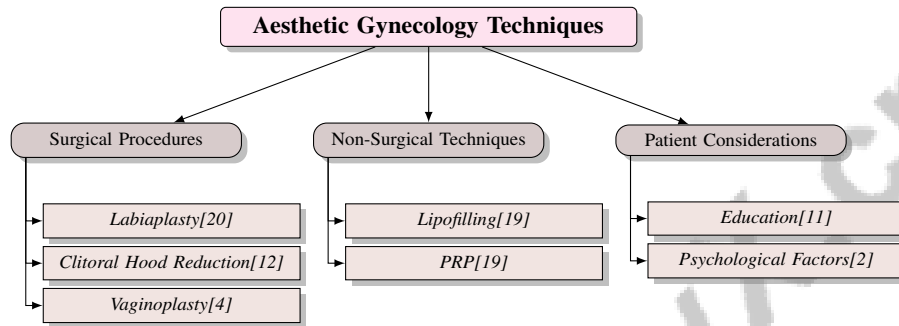


Figure 2: This figure illustrates the categorization of aesthetic gynecology techniques into surgical and non-surgical procedures, along with key patient considerations, emphasizing the importance of personalized care and ongoing education.

3.3 Benefits and Risks

Surgical treatments in aesthetic gynecology offer numerous benefits, primarily enhancing the genitalia's aesthetic appearance and functional integrity. These procedures address both aesthetic and functional needs, enhancing overall satisfaction [8]. Labiaplasty and clitoral hood reduction improve cosmetic appearance and alleviate discomfort, contributing to enhanced sexual satisfaction and self-esteem [20]. Innovative techniques like lipofilling with PRP have shown efficacy in alleviating vaginal atrophy symptoms while achieving satisfactory cosmetic results, offering a minimally invasive alternative to estrogen-based therapies. The fractional micro-ablative CO2 laser exemplifies modern surgical interventions' minimally invasive nature, effectively addressing vaginal atrophy symptoms [23]. Despite these benefits, surgical treatments carry inherent risks. A primary challenge is the lack of extensive clinical data supporting long-term efficacy and safety, leading to outcome uncertainty [15]. Potential complications, such as infection, scarring, sensation changes, and dissatisfaction with results, must be communicated during preoperative counseling [20]. Balancing desired outcomes with risk minimization requires understanding anatomical features, realistic expectations, and thorough preoperative counseling for informed consent and optimal outcomes. By evaluating both advantages and potential drawbacks, providers can empower patients to make informed choices reflecting health needs and aspirations. This approach fosters patient-centered care, acknowledging diverse sociocultural perceptions of beauty and physiological changes. Guidance ensures treatment options—ranging from surgical interventions like labiaplasty and vaginoplasty to non-invasive methods like energy-based therapies—are tailored to enhance satisfaction while minimizing risks [20, 2].

3.4 Recovery and Patient Education

Recovery following surgical treatments in aesthetic gynecology is critical, requiring careful management for optimal healing and satisfaction. Postoperative care involves managing discomfort, monitoring for complications, and providing activity restrictions guidance. Patients are usually advised to avoid strenuous activities and sexual intercourse for several weeks to months, depending on the procedure and healing response [27]. Patient education is integral, empowering patients with knowledge for informed decisions and managing expectations. Comprehensive preoperative counseling should include detailed explanations of procedures, risks, recovery timelines, and care instructions, emphasizing adherence to guidelines for minimizing complications and achieving de-

sired results [27]. Addressing psychological factors and supporting emotional well-being are vital, especially in aesthetic surgery, where self-image, societal standards, and personal health influence decisions and quality of life. Recognizing body image perceptions, including genital self-image, are shaped by cultural norms and psychological influences is essential. Effective education empowers navigation of these complexities, leading to improved psychosexual functioning and emotional health [1, 18, 16, 22, 9]. Patients may experience anxiety about body changes and impacts on health and self-image; providers should offer reassurance and psychological support resources, fostering a holistic care approach. Incorporating evidence-based practices and current research into education materials enhances care quality. For instance, discussing dermal filler therapy benefits for improving muscle tone and reducing distress helps patients understand options and potential impacts on laxity [27]. Prioritizing education and support throughout recovery contributes to improved outcomes and satisfaction in aesthetic gynecology.

In recent years, the field of aesthetic gynecology has witnessed significant advancements, particularly in the realm of non-surgical treatments. These innovations offer patients various options that are less invasive than traditional surgical procedures, thereby enhancing patient experience and outcomes. As illustrated in Figure 3, the hierarchical structure of non-surgical treatments in aesthetic gynecology categorizes key methods, including energy-based devices, injectable treatments, and topical therapies. This figure not only delineates the applications and benefits of these treatments but also compares their efficacy and safety relative to surgical options. Such a comprehensive overview underscores the ongoing trends of innovation within the field, highlighting how these non-surgical alternatives are reshaping patient care and treatment protocols.

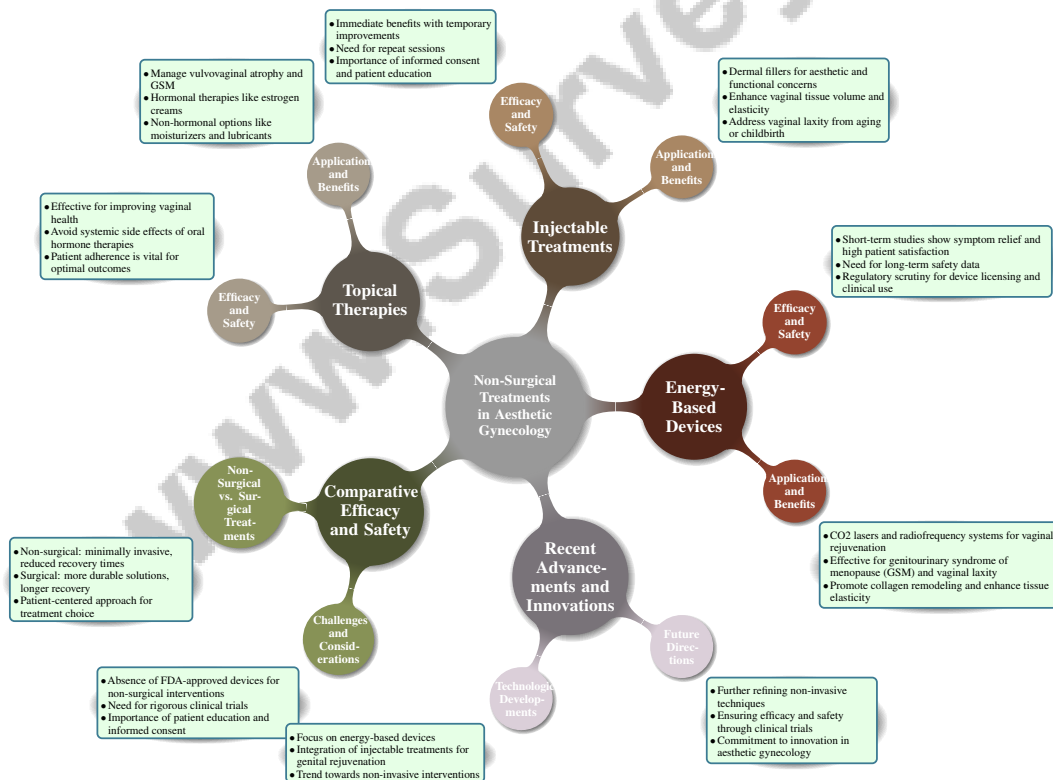


Figure 3: This figure illustrates the hierarchical structure of non-surgical treatments in aesthetic gynecology, categorizing key methods such as energy-based devices, injectable treatments, and topical therapies. It highlights their applications, benefits, and the comparative efficacy and safety with surgical options, emphasizing recent advancements and innovation trends in the field.

Feature	Labiaplasty	Vaginoplasty	Perineoplasty
Purpose	Aesthetic Enhancement	Tightening Vaginal Canal	Perineal Restoration
Techniques	Trim, Wedge Resection	Excision, Reinforcement	Combined With Vaginoplasty
Considerations	Symmetry, Sensation Preservation	Preoperative Assessment	Enhance Rejuvenation

Table 2: This table provides a comparative analysis of three surgical procedures in aesthetic gynecology: labiaplasty, vaginoplasty, and perineoplasty. It outlines the primary purpose, techniques employed, and key considerations for each procedure, highlighting the distinct approaches and factors involved in optimizing patient outcomes. Such a comparison aids in understanding the multifaceted nature of these surgical interventions and their role in enhancing both aesthetic and functional aspects of female genitalia.

4 Non-Surgical Treatments

4.1 Energy-Based Devices

Energy-based devices, such as CO2 lasers and radiofrequency systems, are central to non-surgical vaginal rejuvenation. They provide effective alternatives to traditional surgery for conditions like genitourinary syndrome of menopause (GSM) and vaginal laxity, offering both functional and aesthetic improvements [3]. CO2 lasers, specifically, are noted for addressing mild vaginal laxity by promoting collagen remodeling and enhancing tissue elasticity [4]. These devices are part of a broader array of vulvovaginal rejuvenation techniques, which include both energy-based and injectable treatments [3].

Short-term studies support the efficacy and safety of these devices, showing significant symptom relief in GSM and improved sexual sensation, leading to high patient satisfaction [14]. However, there is a need for more long-term safety data to fully understand their lasting impact [26]. Regulatory scrutiny is crucial, as the distinction between device licensing and clinical use highlights the need for rigorous oversight to ensure efficacy and safety [25].

Energy-based devices represent a significant advancement in non-invasive gynecological treatments, offering viable alternatives to surgery with potential for improved outcomes and reduced recovery times. Continued research and regulatory oversight are essential for harnessing these technologies, including non-invasive vaginal rejuvenation and topical therapies for vulvovaginal atrophy, to enhance women's health and quality of life. Understanding physiological changes from childbirth, aging, and hormonal fluctuations is crucial for addressing women's self-confidence and interpersonal relationships. Evaluating the safety and efficacy of various treatment modalities, including hormonal and non-hormonal topical therapies alongside energy-based devices, enables healthcare providers to better meet diverse patient needs and preferences [22, 20, 14, 2, 5].

4.2 Injectable Treatments

Injectable treatments, particularly dermal fillers, have emerged as a prominent non-invasive solution for addressing aesthetic and functional concerns in gynecology. These treatments offer a minimally invasive alternative to surgery, providing options with less downtime and reduced risks [27]. Dermal fillers enhance vaginal tissue volume and elasticity, improving physical appearance and potentially boosting sexual function [27].

These injectables address issues such as vaginal laxity, often resulting from aging or childbirth, by augmenting tissue volume and restoring the vaginal canal's structural integrity, thus enhancing sexual satisfaction and confidence [27]. This non-surgical approach aligns with trends in aesthetic medicine, where patients seek effective solutions with minimal disruption [3].

While immediate benefits of injectable treatments are apparent, their long-term efficacy and safety require further investigation. Current findings indicate temporary improvements, necessitating repeat sessions to maintain desired outcomes [3]. Emphasizing ongoing research into the durability and potential side effects of dermal fillers underscores the importance of informed consent and patient education in non-invasive procedures [27].

Injectable treatments represent a significant advancement in aesthetic gynecology, offering versatile options for enhancing genital aesthetics and function without surgery. As the field progresses,

integrating evidence-based practices and patient-centered care will be essential to optimize outcomes from these innovative treatments [27].

4.3 Topical Therapies

Topical therapies are integral to non-surgical options in aesthetic gynecology, especially for managing vulvovaginal atrophy and GSM. Treatment typically begins with an assessment followed by hormonal therapies, complemented by non-hormonal options like moisturizers and lubricants [5]. Hormonal therapies, particularly estrogen creams, aim to restore the vaginal environment by enhancing hydration and elasticity, alleviating symptoms such as dryness and discomfort.

Non-hormonal therapies are crucial, especially for patients unsuitable for hormone replacement therapy. These include moisturizers for lasting hydration and lubricants for temporary relief during sexual activity. This combination can significantly enhance quality of life for women with GSM, providing a non-invasive alternative to more aggressive interventions [5].

Literature supports the effectiveness of topical therapies in improving vaginal health, particularly for conditions like vulvovaginal atrophy due to hormonal changes from aging, menopause, or childbirth. Studies show both hormonal options (e.g., estradiol, conjugated estrogen) and non-hormonal alternatives (e.g., hyaluronic acid, lubricants) significantly relieve symptoms such as dryness and discomfort during intercourse, avoiding systemic side effects of oral hormone therapies. This positions topical treatments as valuable non-invasive options for enhancing women's quality of life and sexual function [27, 25, 14, 2, 5]. Patient adherence is vital for optimal outcomes, necessitating thorough education on application and benefits. Incorporating topical therapies into the broader spectrum of non-surgical treatments allows healthcare providers to offer comprehensive, patient-centered management of symptoms associated with vulvovaginal atrophy and GSM.

4.4 Comparative Efficacy and Safety

Comparative analysis of non-surgical and surgical treatments in aesthetic gynecology highlights distinct differences in efficacy and safety, offering diverse options tailored to patient needs. Non-surgical treatments, particularly energy-based devices and injectables, have gained popularity due to their minimally invasive nature and reduced recovery times [3]. Energy-based devices, such as CO2 lasers and radiofrequency systems, are favored for significantly improving conditions like GSM and vaginal laxity with minimal downtime [3].

Challenges persist in non-surgical treatments, notably the absence of FDA-approved devices for these interventions, emphasizing the need for rigorous clinical trials to establish long-term safety and efficacy [14]. This regulatory gap underscores the importance of ongoing research to ensure patient safety and optimize treatment outcomes.

Surgical options, such as labiaplasty and vaginoplasty, provide more durable solutions for aesthetic and functional issues related to women's genitalia, addressing concerns from childbirth, aging, or personal preference. These interventions can significantly enhance self-confidence and quality of life by alleviating conditions like urinary incontinence and vaginal atrophy. However, they typically involve longer recovery times and inherent risks of invasive procedures, necessitating careful consideration and individualized evaluation to optimize outcomes and minimize complications [2, 11]. Surgical interventions are often sought for addressing severe laxity and achieving substantial anatomical modifications not fully replicable by non-surgical methods.

Ultimately, the choice between non-surgical and surgical treatments should be guided by a thorough assessment of the patient's specific needs, anatomical considerations, and personal preferences. Healthcare providers must weigh the benefits and risks of each approach, ensuring patients are well-informed and empowered to make decisions aligning with their goals. This patient-centered approach is crucial in the rapidly advancing field of aesthetic gynecology, which encompasses a range of interventions aimed at addressing women's reproductive health and aesthetic concerns. As demand for these procedures grows, tailoring treatments to individual preferences and anatomical considerations enhances overall health, self-esteem, and quality of life for women facing issues such as urinary incontinence, vaginal atrophy, and changes due to childbirth or aging [20, 2, 22, 11].

4.5 Recent Advancements and Innovations

Recent advancements in aesthetic gynecology are marked by the development and integration of non-invasive technologies, enhancing treatment safety and efficacy. The field has seen a growing emphasis on refining techniques and expanding awareness of non-surgical options, which provide significant benefits, including reduced recovery times and minimized risks compared to traditional surgical methods [8]. These innovations respond to the demand for less invasive procedures that deliver effective results, addressing both aesthetic and functional concerns of the female genitalia.

A key trend is the focus on energy-based devices, such as lasers and radiofrequency systems, which have shown promising outcomes in managing conditions like GSM and vaginal laxity. These technologies stimulate collagen production and enhance tissue elasticity, offering a non-surgical alternative that aligns with patient preferences for minimal downtime [2]. The integration of these technologies into clinical practice reflects a broader shift towards patient-centered care, emphasizing tailored solutions that meet individual needs.

The expanding field of injectable treatments, including dermal fillers, now features options specifically designed for genital rejuvenation, allowing patients to enhance both aesthetic appearance and functional integrity without surgical procedures. This trend reflects increasing interest among physicians and patients in non-invasive interventions addressing conditions like vaginal laxity, hormonal changes, and aesthetic concerns related to childbirth and aging. As awareness of these treatment options rises, demand for minimally invasive procedures is anticipated to grow, positioning genital rejuvenation as a significant focus in cosmetic and medical dermatology [14, 2, 15, 27]. These advancements underscore the importance of ongoing research and innovation in the field, as healthcare providers strive to offer a comprehensive range of treatments catering to diverse patient populations.

Future research should focus on further refining these non-invasive techniques, ensuring their efficacy and safety through rigorous clinical trials. This ongoing commitment to innovation is essential for advancing the field and enhancing the quality of care provided to women seeking aesthetic and functional improvements in their genital health [8].

5 Impact on Sexual Health

The intersection of aesthetic procedures and women's sexual health involves diverse psychological and physical outcomes associated with female genital cosmetic procedures (FGCS). These outcomes provide insights into individual experiences and their broader implications for women's health and well-being. Examining the psychological and physical effects of FGCS deepens our understanding of their impact on women's body image and sexual health, particularly regarding self-esteem, body image, and sexual satisfaction.

5.1 Psychological and Physical Outcomes

FGCS significantly impacts women's health by enhancing their autonomy over their bodies, reflecting societal shifts in body image perceptions [6]. This empowerment often correlates with improved self-esteem and quality of life, addressing both physical and psychological needs [22]. Physicians play a crucial role, as their confidence in discussing FGCS influences patients' decision-making [24]. A positive genital self-image is critical for sexual satisfaction and overall well-being, with FGCS often addressing dissatisfaction with appearance and motivations for seeking these procedures [17]. Effective interventions have been identified that enhance genital self-image and sexual satisfaction, underscoring FGCS's importance in improving psychological outcomes [18].

Physically, FGCS offers benefits such as restoring volume and contour to the labia majora, alleviating symptoms, and boosting self-esteem [19]. Personalized treatment approaches based on vaginal laxity severity lead to improved patient satisfaction [4]. However, challenges include insufficient high-quality evidence for some devices and potentially misleading marketing claims. Noninvasive treatments, while promising, are constrained by limited long-term data and lack of FDA approval, necessitating caution [14]. Topical therapies, including estrogen and hyaluronic acid, have shown improvements in vaginal dryness, itching, and sexual function, enhancing quality of life. FGCS can significantly improve self-esteem and reduce physical discomfort, but ongoing research is essential to fully understand their long-term psychological impacts [12].

5.2 Comparative Analysis of Sexual Health

Comparative analysis of surgical and non-surgical treatments in aesthetic gynecology reveals nuanced insights into their impacts on sexual health. FGCS is generally safe and effective, enhancing quality of life for many women [12]. However, its specific effects on sexual self-image and function are complex. Studies comparing women with and without cosmetic procedures show no significant differences in sexual self-image and function, suggesting FGCS may not enhance these aspects as anticipated [21]. While FGCS addresses aesthetic and functional concerns, its influence on sexual health may be less pronounced.

Non-surgical treatments, including energy-based devices and injectables, present additional considerations. Despite their popularity due to minimal invasiveness, these treatments face limitations, such as the absence of FDA-approved devices and concerns regarding the robustness of clinical trials. Potential placebo effects further complicate efficacy assessments [14]. These factors emphasize caution in interpreting the benefits of non-surgical options for sexual health.

Choosing between surgical and non-surgical interventions should be guided by a comprehensive understanding of their potential impacts on sexual health, realistic expectations, and individual circumstances. As aesthetic gynecology evolves, ongoing research and thorough clinical evaluations are essential to investigate diverse outcomes associated with various treatments. Understanding hormonal and non-hormonal therapies, such as topical treatments for vulvovaginal atrophy, is also vital for improving quality of life, self-esteem, and sexual satisfaction [5, 20, 22, 9].

5.3 Non-Invasive Treatments and Sexual Health

Non-invasive treatments in aesthetic gynecology, particularly energy-based devices and injectables, have gained traction for enhancing sexual health by addressing conditions like vaginal laxity and genitourinary syndrome of menopause (GSM). These treatments offer a less invasive alternative to surgery, with reduced recovery times and minimal risks [3]. Energy-based devices, such as CO2 and Er:YAG lasers, deliver controlled thermal energy to vaginal tissue, promoting collagen remodeling and enhancing tissue elasticity, thus alleviating GSM symptoms like vaginal dryness and discomfort.

These devices have shown improvements in sexual sensation and satisfaction, positively impacting women's sexual health and quality of life [25]. Studies indicate significant enhancements in sexual function, with reports of improved lubrication and reduced pain during intercourse [26]. However, while short-term outcomes are promising, long-term efficacy and safety remain under investigation [25].

Injectable treatments, such as dermal fillers, contribute to enhancing sexual health by increasing tissue volume and elasticity, alleviating vaginal laxity, and improving sexual satisfaction [27]. This approach to non-invasive vaginal rejuvenation offers additional options for addressing aesthetic and functional concerns without surgery [27].

Despite potential benefits, healthcare providers must ensure patients maintain realistic expectations and are informed about non-invasive treatments' limitations and risks. This includes discussing the necessity for repeat sessions to sustain outcomes and the current lack of FDA approval for some devices, emphasizing ongoing research and evidence-based practice [14]. By prioritizing patient education and informed consent, providers can enable patients to make well-informed decisions aligned with their sexual health goals and overall well-being.

6 Patient Perspectives and Motivations

6.1 Societal and Cultural Influences

Societal and cultural dynamics significantly shape the decision to undergo female genital cosmetic surgery (FGCS), influencing perceptions of body image and aesthetic ideals. Cultural stigma often portrays FGCS as taboo, deterring individuals despite potential benefits for self-esteem and quality of life [24]. Limited FGCS knowledge among healthcare providers further complicates access, as they may not adequately address patient inquiries or provide informed guidance [24]. Societal norms and media representations amplify pressures to conform to specific aesthetic standards, motivating surgical interventions to meet perceived expectations. This underscores the importance of pre-

treatment consultations that ensure decisions are based on informed consent rather than external pressures [11].

The interplay of cultural beliefs and societal expectations reveals the complexity of motivations behind FGCS. Healthcare providers must engage in culturally sensitive discussions, addressing both psychological and social dimensions. By fostering a supportive environment, practitioners can assist patients in navigating these influences and empower them to make decisions aligned with their values and health goals. Integrating educational, exercise, and counseling interventions can enhance self-perception and sexual health, promoting a more inclusive understanding of bodily diversity and individual expression [18, 9].

6.2 Personal Motivations and Psychological Factors

Personal motivations for FGCS are complex, often linked to dissatisfaction with genital appearance and the desire for improved body image [16]. Motivations extend beyond aesthetics to include functional concerns such as discomfort during intercourse and aspirations to enhance sexual function [7]. Societal pressures and ambiguous definitions of "normal" genitalia significantly influence these decisions [16]. Women frequently feel compelled to conform to idealized media images, resulting in body image dissatisfaction and a quest for surgical solutions [9]. Childbirth can alter body perception, leading to psychological distress and a desire for corrective procedures, exacerbated by societal stigma [7].

Addressing body image dissatisfaction is crucial for developing effective counseling and healthcare strategies for women considering FGCS [10]. Healthcare professionals, notably nurses and midwives, play a vital role in discussing genital self-image issues [1]. A comprehensive approach should encompass physical, psychological, and emotional dimensions [13]. Future research should explore women's experiences and motivations, examining societal influences and psychological well-being [17]. Challenges persist in understanding FGCS's long-term effects and societal pressures on women's decisions [21]. The variability in surgical techniques and potential psychological consequences also pose significant challenges [28]. Prioritizing women's voices and experiences is essential in addressing the interplay of personal motivations and psychological factors driving FGCS demand.

6.3 Media Influence on Genital Aesthetics

Media portrayals significantly shape perceptions of genital aesthetics, influencing societal standards and individual expectations. Often, media promotes a narrow definition of beauty, leading to unrealistic expectations and body image dissatisfaction among women [9]. This influence is pronounced in FGCS, where media-driven ideals normalize cosmetic procedures as a path to perceived perfection [8]. The impact of media is evident in the rising demand for FGCS, as women strive to conform to standards depicted in advertisements, films, and social media, which often lack diversity and overlook natural genital variation [10].

Digital media disseminates information about FGCS, providing platforms for discourse that shape public perception and individual decision-making. While some outlets promote educational content and body positivity, others perpetuate stigmatization and unrealistic standards, exacerbating feelings of inadequacy [13]. The influence of media on genital aesthetics highlights the necessity for critical media literacy and awareness among consumers and healthcare providers. By fostering inclusive and realistic representations, media can enhance societal understanding of genital diversity, vital for improving women's genital self-image and sexual health, affecting satisfaction and well-being. This shift can mitigate negative impacts of beauty standards, fostering a healthier understanding of normal genitalia and reducing stigma surrounding aesthetic surgery [18, 16, 7, 1]. Healthcare professionals should engage in dialogues with patients, addressing media influences and encouraging informed, autonomous decision-making regarding FGCS.

7 Regulatory and Ethical Considerations

7.1 Regulatory Landscape and Challenges

The regulatory framework for aesthetic gynecology and genital cosmetic surgery is complex, with evolving standards impacting practitioners and patients. A significant concern involves energy-based

devices for vaginal rejuvenation. In 2018, the FDA warned about these devices due to insufficient clinical evidence on their safety and efficacy [26]. This underscores the need for stringent regulatory oversight and clear guidelines to ensure patient safety and device effectiveness. Health Canada has similarly called for mandatory reporting of serious incidents related to medical devices and improved standards for clinical evidence [25], aiming to enhance transparency and accountability in patient treatments.

Currently, energy-based devices lack FDA approval for vulvovaginal rejuvenation, creating ethical challenges for physicians who must inform patients about the risks, benefits, and regulatory status of these devices [3]. Ethical considerations are compounded by inconsistent training in aesthetic gynecology, leading to varied practices and cultural perceptions of ideal genitalia [20]. Comprehensive education and training for healthcare providers are crucial for delivering culturally sensitive, high-quality care that respects diverse patient preferences.

The regulatory landscape must adapt to address the complexities of emerging technologies and cultural nuances. By prioritizing patient safety and ethical standards, regulatory bodies can support the responsible advancement of aesthetic gynecological practices, addressing conditions such as urinary incontinence, vaginal atrophy, and the effects of childbirth and aging. As global training programs and certification opportunities expand, effective regulatory oversight will be essential in maintaining high-quality care and meeting the unique needs of patients seeking aesthetic interventions [11, 22, 20, 13, 2].

7.2 Ethical Standards and Informed Consent

Upholding rigorous ethical standards and ensuring informed consent are crucial in aesthetic gynecology to safeguard patient autonomy and well-being. The field faces ethical challenges, including societal stigma surrounding Female Genital Cosmetic Surgery (FGCS), potential patient exploitation, and the need for adequate training among healthcare providers [12]. Motivations for these procedures often intersect with societal pressures and standards [16].

Informed consent requires thorough dialogue to educate patients about natural genital variations and the potential risks and outcomes of procedures [18]. This dialogue combats societal stigma and fosters informed decision-making [11]. Understanding the psychological dimensions of genital self-image is essential, as it significantly affects patient satisfaction and perceived success [7].

Healthcare providers should focus on initiatives that enhance women's body satisfaction and sexual health, ensuring patients are informed about alternative treatments and the implications of their decisions. Ethical practice demands empathetic, culturally sensitive engagement, especially given coercive social pressures and idealized beauty standards influencing aesthetic surgery choices. This approach acknowledges the interplay between societal norms, personal body image, and cosmetic modifications, empowering individuals while addressing bodily difference stigmatization [1, 16, 9, 24, 13].

The ethical discourse in aesthetic gynecology is further complicated by the small sample size of women who have undergone FGCS, limiting the generalizability of findings and causal conclusions [17]. This highlights the need for comprehensive research and data collection to inform ethical guidelines and improve patient care. By maintaining stringent ethical standards and prioritizing informed consent, aesthetic gynecology can better address women's needs, fostering a practice that is both ethically sound and patient-centered.

7.3 Research and Evidence-Based Guidelines

Establishing research and evidence-based guidelines is critical for ensuring the safety and efficacy of procedures in aesthetic gynecology, particularly FGCS and noninvasive vaginal rejuvenation. A comparative analysis of surgical methods highlights the need for tailored interventions that cater to individual patient needs, emphasizing personalized care plans [28]. Standardizing training for healthcare providers is essential, equipping practitioners with the skills and knowledge to deliver high-quality care while addressing the psychological impacts associated with FGCS [12].

The current landscape of noninvasive treatments is marked by a lack of robust clinical data, underscoring the need for well-designed, controlled studies to clarify long-term effects and safety profiles [14]. Such research is vital for developing comprehensive guidelines that inform clinical practice and

ensure patient safety. By prioritizing rigorous scientific inquiry and evidence-based practices, the field of aesthetic gynecology can advance toward more effective and safe interventions, ultimately enhancing patient outcomes and satisfaction.

8 Conclusion

8.1 Patient-Centered Care and Realistic Expectations

This survey underscores the importance of adopting a patient-centered approach in aesthetic gynecology, emphasizing the need for comprehensive patient involvement in the decision-making process. By ensuring that patients are thoroughly informed about the potential risks, benefits, and realistic outcomes of their procedures, healthcare providers can empower women to make decisions that align with their personal goals and expectations. This approach not only enhances patient satisfaction but also improves the overall quality of care.

Critical to achieving successful outcomes is the establishment of realistic expectations. Patients must be educated about the natural variability in genital appearance and the inherent limitations of cosmetic procedures. Understanding these factors is crucial in mitigating the impact of societal pressures and idealized body images that can skew perceptions and lead to dissatisfaction. Enhancing awareness and education around gynecological conditions can significantly improve treatment options and, consequently, women's quality of life.

Innovations in non-invasive treatments, such as fractional micro-ablative CO2 laser therapy, offer promising alternatives to traditional surgical methods. These advancements provide effective solutions for symptoms like vaginal atrophy, demonstrating sustained improvements and offering patients less invasive options. Future research should continue to focus on interventions that enhance genital self-image and address the psychological impacts of societal standards on women's perceptions of their bodies. By prioritizing patient-centered care and fostering realistic expectations, the field of aesthetic gynecology can better cater to the diverse needs of women, ensuring outcomes that are both safe and satisfying.

8.2 Challenges and Barriers

Aesthetic gynecology faces numerous challenges, primarily due to the limited availability of comprehensive longitudinal studies and the biases present in self-reported data regarding sexual function and self-image. These limitations hinder the ability to draw conclusive insights into the psychological and physical benefits of these procedures, highlighting a significant gap in understanding their long-term impacts on women's health and well-being.

The methodological shortcomings of existing studies, such as inadequate designs and the lack of long-term follow-up data, complicate the evaluation of both surgical and non-surgical interventions. Addressing this gap necessitates high-quality randomized controlled trials to accurately assess the efficacy of treatments like vaginal energy devices and explore alternative therapies for conditions such as genitourinary syndrome of menopause (GSM) and urinary incontinence.

Furthermore, the inconsistent reporting of efficacy and safety across various treatment modalities poses challenges in establishing standardized guidelines and best practices. Ethical considerations, particularly around informed consent and patient autonomy, underscore the need for a rigorous and ethically sound approach to practice. Future research should prioritize the development of methodologically robust studies with long-term follow-up and standardized outcome measures, enhancing our understanding of the benefits and risks associated with aesthetic gynecological procedures. Improving training opportunities for healthcare providers and fostering open, culturally sensitive dialogues with patients are also essential to overcoming the ethical and societal barriers currently faced in the field.

8.3 Future Directions and Training

Advancements in research, training, and clinical practice are set to shape the future of aesthetic gynecology, necessitating a comprehensive approach that addresses both the technical and psychosocial aspects of female genital cosmetic surgery (FGCS). A key area for future research is the establishment of robust clinical data to refine techniques and explore the psychological and social dimensions of

genital rejuvenation. Conducting longitudinal studies to track changes in genital self-image and sexual satisfaction will provide deeper insights into the long-term effects of these procedures.

Training healthcare providers is crucial to ensure the delivery of high-quality, patient-centered care. Comprehensive training programs should focus on standardized protocols and techniques, enhancing practitioners' confidence and competence in performing FGCS. Additionally, training must encompass the psychosocial aspects of these surgeries, equipping practitioners to effectively address the emotional and psychological needs of their patients.

Exploring cultural attitudes towards FGCS and their impact on women's choices remains a critical area for investigation. Future research should challenge prevailing beauty standards and celebrate bodily diversity, fostering a more inclusive understanding of genital aesthetics. Investigating the intersectionality of race, class, and gender in shaping perceptions of genital aesthetics is vital, as these factors significantly influence individual experiences and decisions.

Improving patient education and developing standardized assessment tools are essential for empowering patients to make informed decisions. This effort must address the implications of rising trends in adolescent and gender nonconforming patients seeking surgery, ensuring that all individuals receive appropriate and sensitive care. Furthermore, multicenter studies and additional cases are necessary to validate proposed vaginal rejuvenation strategies and explore the effectiveness of other treatment modalities, contributing to a more robust evidence base.

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