

Digital visibility, online engagement and evidence-governance of cosmetic gynaecology in Sri Lanka: A descriptive infodemiological study

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Abstract

Background: Cosmetic gynaecology is increasingly visible across search engines, social media and digital advertising. In sensitive health domains, anonymous digital activity may reveal information-seeking that is poorly captured by clinic records.

Objective: To describe online interest, social-media engagement and advertising related to cosmetic gynaecology in Sri Lanka and to interpret these signals against contemporary evidence.

Methods: This descriptive infodemiological study used aggregated data from July 2023 to July 2025 from Google Trends, Google Keyword Planner, SEMrush, Keywordtool.io, TikTok Creative Center and Meta Ad Library. Search domains included labiaplasty, hymenoplasty, vaginal tightening, vaginal rejuvenation, injectable treatments, clitoral hoodplasty and vulvovaginal platelet-rich plasma therapy. Outcomes were relative search indices, estimated monthly search volume, social/video engagement and advertisement visibility. A targeted narrative evidence synthesis was updated to July 2026.

Results: Estimated monthly search volumes were highest for “labiaplasty Sri Lanka” (1,600; 40.46%), “hymenoplasty Colombo” (1,100; 27.81%) and “vaginal tightening Sri Lanka” (950; 24.02%). Western Province showed the highest relative search-interest index (100), followed by Central (72) and Southern (65). TikTok hashtags #VaginalTightening and #LabiaplastySriLanka recorded approximately 850,000 and 420,000 aggregate views, respectively. Meta Ad Library identified approximately 120 related advertisements.

Conclusions: Cosmetic gynaecology has measurable digital visibility in Sri Lanka, especially for labiaplasty, hymenoplasty and vaginal tightening. These findings indicate online attention and commercial visibility, not confirmed clinical demand, procedure uptake or user demographics. They support evidence-based counselling, patient education and ethical advertising standard-setting.

Keywords: cosmetic gynaecology, female genital cosmetic surgery, labiaplasty, hymenoplasty, vaginal rejuvenation, social media analytics, infodemiology, digital epidemiology, Google Trends, Sri Lanka

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Introduction

Cosmetic gynaecology, also described as female genital cosmetic surgery or aesthetic gynaecology, includes elective surgical and non-surgical interventions intended to modify the appearance or perceived function of the female genitalia. Procedures commonly discussed under this umbrella include labiaplasty, clitoral hood reduction, hymenoplasty, laser vaginal tightening, vaginoplasty, perineoplasty, vaginal rejuvenation, injectable therapies and platelet-rich plasma-based interventions. These procedures sit at the intersection of sexual and reproductive health, aesthetic medicine, psychosexual wellbeing, commercial healthcare, body image and clinical ethics.

Professional guidance has consistently adopted a cautious position. The American College of Obstetricians and Gynaecologists (ACOG) states that women should be informed about the lack of high-quality evidence supporting the effectiveness of genital cosmetic surgical procedures and counselled about potential complications such as pain, bleeding, infection, scarring, adhesions, altered sensation, dyspareunia and reoperation¹. The Society of Obstetricians and Gynaecologists of Canada (SOGC) guideline similarly emphasises full medical, sexual and gynaecological history, exclusion of major sexual or psychological dysfunction and assessment for coercion or exploitation². This does not imply dismissal of patient concerns; it requires a structured, evidence-based and non-coercive clinical response³.

The international literature shows that motivations for labiaplasty and related procedures are heterogeneous. Studies and reviews describe aesthetic concerns, physical discomfort, hygiene concerns, distress about perceived abnormality, relationship or partner influence, media exposure and psychosexual factors^{4-8,12-14}. Importantly, dissatisfaction may occur in the absence of anatomical abnormality and counselling on normal variation can be clinically consequential. These issues are particularly relevant when commercial online content presents narrow visual norms or claims broad sexual, psychological or relationship benefits.

The internet is now a dominant environment for health information-seeking and aesthetic service discovery. For sensitive genital and sexual-health concerns, anonymous searching may precede clinical consultation, replace it, or reflect curiosity without

any intention to seek care. Prior research has shown that online advertisements and promotional content may contribute to the normalisation of female genital cosmetic surgery, often with limited discussion of risk, uncertainty, normal anatomical diversity or provider qualification⁹⁻¹¹.

Sri Lanka is a relevant South Asian setting for this question. Sexual and reproductive health topics may remain socially sensitive, while digital connectivity and social media use are substantial but uneven. DataReportal reported 13.9 million internet users in Sri Lanka at the end of 2025, corresponding to 59.7% internet penetration and 9.00 million social-media user identities in October 2025, equivalent to 38.7% of the population²⁵. These figures support the feasibility of digital-health analytics while highlighting a major selection issue: online traces do not represent the whole population.

This study is grounded in infodemiology and digital epidemiology. Eysenbach defined infodemiology as methods for analysing Internet search and communication behaviour to inform public health¹⁹, while subsequent digital epidemiology and Google Trends methodology literature has emphasised both the utility and limitations of digital traces²⁰⁻²⁴. Google Trends relative search volume, keyword-planner estimates, hashtag views and advertisement counts are not equivalent to diagnoses, procedure demand or healthcare utilisation.

The aim of this article was to provide a scientifically defensible assessment of Sri Lankan cosmetic gynaecology digital analytics. The objectives were: (1) to quantify online search interest, regional relative search indices, social-media engagement and advertising visibility; (2) to compare these patterns with contemporary evidence; and (3) to propose an interpretation framework for clinicians, researchers and policy stakeholders.

Materials and methods

Study design and data sources

This was a descriptive infodemiological study using aggregated digital data. The primary dataset quantified platform-level activity related to cosmetic gynaecology terms in Sri Lanka. No human participants were recruited or contacted and no individual-level records were accessed. The study was explicitly designed to measure online visibility

Table 1. Data sources and constructs

Source	Metric extracted	Construct measured
Google Trends	Relative search volume and regional indices	Public attention/search interest
Google Keyword Planner	Estimated monthly searches	Advertiser-facing keyword volume
SEMrush	Estimated monthly searches	Commercial search-volume estimate
Keywordtool.io/YouTube	Search/video metrics and public views	Video-platform discovery and exposure
TikTok Creative Center	Hashtag views/engagement signals	Short-form algorithmic exposure
Meta Ad Library	Advertisement count and visible geographic/page-location signals	Commercial service visibility

and information-seeking proxies, not clinical demand or procedure uptake (Table 1).

The digital observation window was July 2023 to July 2025. The dataset was compiled in August 2025 using Google Trends, Google Keyword Planner, SEMrush, Keywordtool.io for YouTube-related search and video metrics, TikTok Creative Center and Meta Ad Library. Country or regional filters were applied to Sri Lanka where available. Google Trends regional outputs were extracted as provincial relative search-interest indices. YouTube and TikTok figures were treated as platform-visible public engagement counts. Meta Ad Library advertisements were identified using cosmetic gynaecology-related keywords and screened descriptively for relevance.

Search strategy, evidence synthesis and ethics

Search terms were selected to capture clinical procedure names, lay terms, commercial phrasing and local-language equivalents. Domains included labiaplasty, labia surgery, hymenoplasty, vaginal tightening, laser vaginal tightening, vaginal rejuvenation, vaginal Botox, clitoral hoodplasty and vulvovaginal platelet-rich plasma therapy. English terms were combined with “Sri Lanka” where relevant. Sinhala and Tamil terms and transliterations were entered where supported by platform interfaces; however, unstable language variants and euphemistic searches were expected to be incompletely captured.

Google Trends was interpreted as relative search interest; Google Keyword Planner and SEMrush as rounded commercial search-volume estimates; TikTok and YouTube as platform-visible engagement; and Meta Ad Library as advertising visibility. No cross-platform composite demand score was generated because search, views, hashtag interactions and advertisements are different analytic units and cannot be pooled as equivalent measures.

A targeted narrative literature search was updated to July 2026. Searches used combinations of “female genital cosmetic surgery”, “cosmetic gynaecology”, “labiaplasty”, “hymenoplasty”, “vaginal rejuvenation”, “vaginal tightening”, “online advertising”, “social media”, “Google Trends”, “infodemiology”, “digital epidemiology”, “sexual function” and “body dysmorphic disorder”. This was a contextual evidence synthesis intended to improve interpretation of the original digital analytics, not a formal systematic review.

To improve reproducibility, each platform was treated according to its own output logic. Google Trends values were recorded as relative search-interest indices where 100 denotes the highest proportional interest within the selected geography and period. Commercial keyword tools were treated as rounded estimates rather than exact counts. Hashtag and video views were interpreted as displayed platform values rather than unique users. Advertisement counts

were treated as visible advertisements at the time of searching, not as complete market inventories.

Primary outcomes were: (1) estimated average monthly keyword-search volume; (2) Google Trends provincial relative search-interest indices; (3) TikTok hashtag views and YouTube public video views; and (4) relevant Meta Ad Library advertisement counts with visible geographic signals. Evidence certainty was summarised narratively as high, moderate, low or very low based on study design, consistency, directness and relevance. This was not a formal GRADE assessment and should not be interpreted as one.

The study used publicly accessible or platform-derived aggregate, non-identifiable secondary digital data. It did not involve human participants, human tissue, clinical records, interventions, private communications, IP addresses, linked comments, or identifiable images or videos. Formal ethics approval and informed consent were therefore not applicable. The analysis avoided demographic inference and did not claim that searches were performed by

women, women of reproductive age or Sri Lankan residents.

Results

Search-engine metrics

Across the retained keyword set, estimated average monthly search volume was 3,955 searches. The highest estimated monthly volume was for “labiaplasty Sri Lanka” (1,600; 40.46% of the listed keyword-search total), followed by “hymenoplasty Colombo” (1,100; 27.81%) and “vaginal tightening Sri Lanka” (950; 24.02%). Together, these three terms accounted for 92.29% of retained keyword-search volume.

Lower-volume terms were “vaginal rejuvenation Sri Lanka” (200; 5.06%), “vaginal Botox injection” (100; 2.53%), “clitoral hoodplasty” (5; 0.13%) and “vulvovaginal PRP therapy” (0; 0.00%). This distribution indicates that online visibility was concentrated in a small number of procedure domains rather than evenly distributed across the cosmetic gynaecology spectrum (Table 2 and Figure 1).

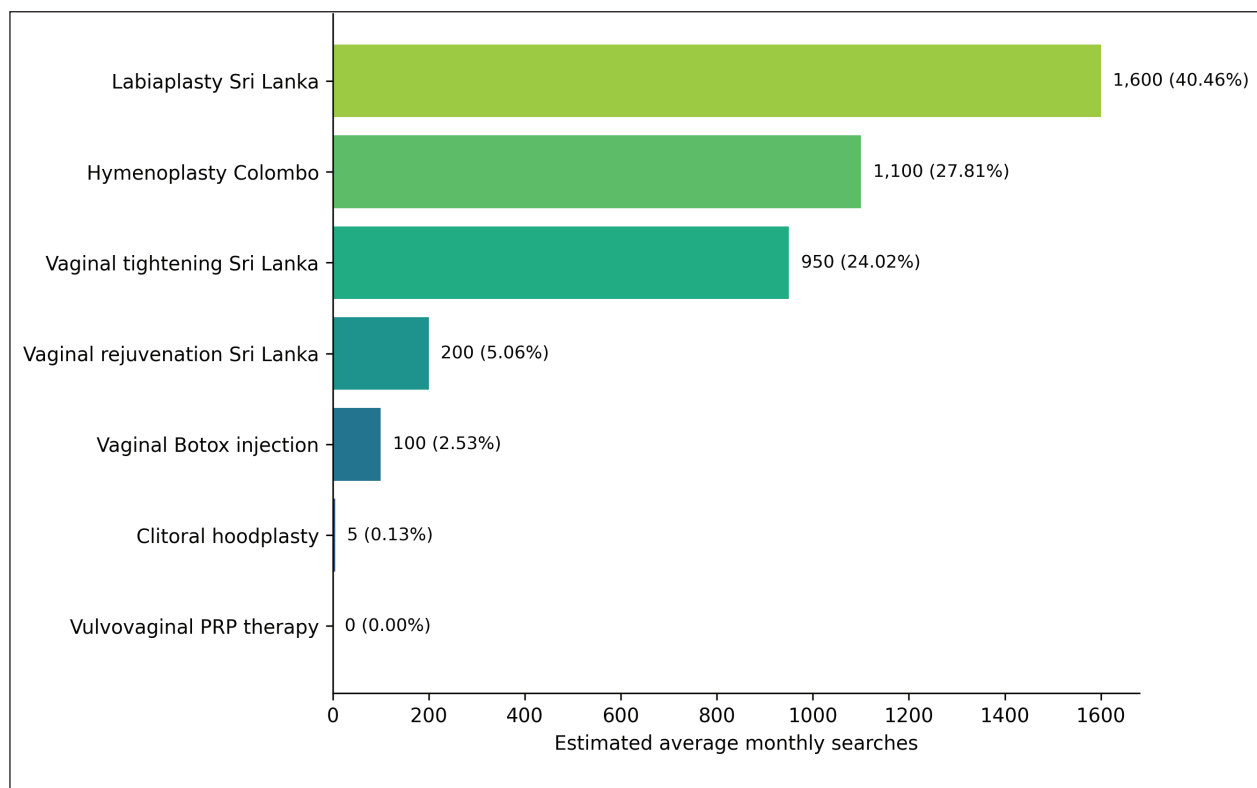
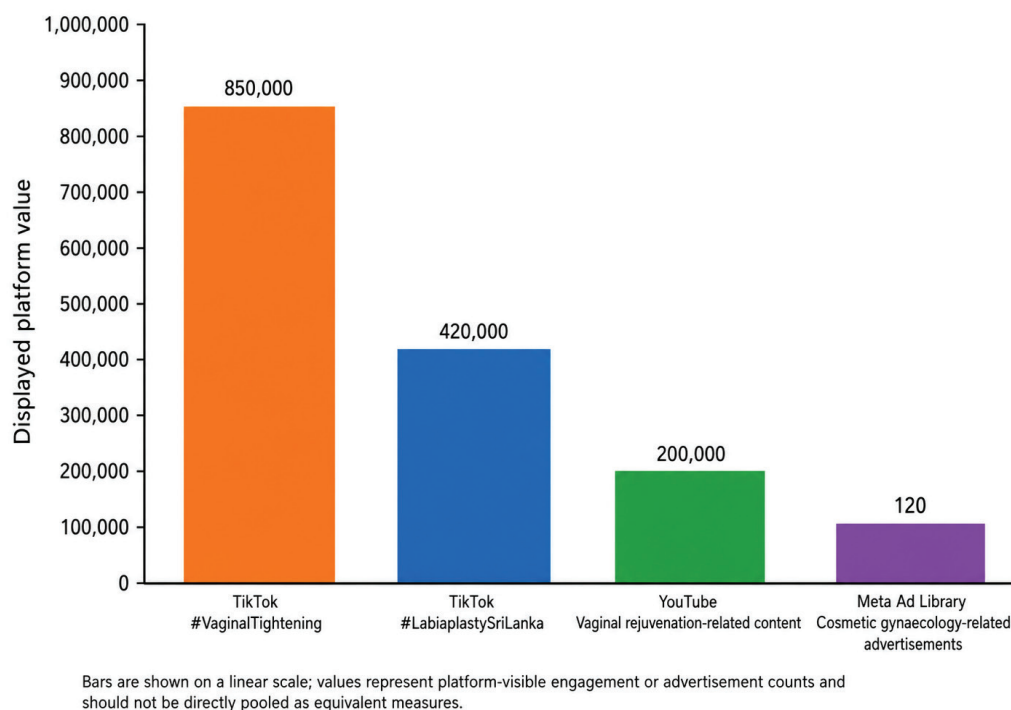


Figure 1. Estimated average monthly search volume by retained keyword.

Table 2. Estimated average monthly search volume for retained cosmetic gynaecology-related keywords

Keyword	Procedure domain	Estimated monthly searches	Share of listed search-volume total (%)
Labiaplasty Sri Lanka	Labiaplasty	1,600	40.46
Hymenoplasty Colombo	Hymenoplasty	1,100	27.81
Vaginal tightening Sri Lanka	Vaginal tightening/rejuvenation	950	24.02
Vaginal rejuvenation Sri Lanka	Vaginal tightening/rejuvenation	200	5.06
Vaginal Botox injection	Injectable/neuromodulator	100	2.53
Clitoral hoodplasty	Clitoral hood reduction	5	0.13
Vulvovaginal PRP therapy	Regenerative/PRP	0	0.00

**Figure 2. Platform-visible engagement and advertising signals.**

Regional search-interest pattern

Google Trends regional indices showed the highest relative search-interest index in Western Province (100), followed by Central (72), Southern (65), Uva (48), North Western (40), Eastern (38), North Central (35), Sabaragamuwa (18) and Northern (10). The

pattern is plausibly consistent with urbanisation, digital access, concentration of private services and commercial targeting. However, this interpretation is ecological and cannot establish individual residence, local clinical need or procedure utilisation (Table 3 and Figure 2).

Table 3. Google Trends provincial relative search-interest indices

Province	Relative search-interest index
Western	100
Central	72
Southern	65
Uva	48
North Western	40
Eastern	38
North Central	35
Sabaragamuwa	18
Northern	10

Note: Google Trends values are relative indices; 100 indicates the highest proportional search interest in the selected setting and period. Values are not absolute search counts.

Social-media, video-platform and advertisement signals

TikTok showed high platform-visible engagement for cosmetic gynaecology-related hashtags. #VaginalTightening recorded approximately 850,000 aggregate views and #LabiaplastySriLanka approximately 420,000 aggregate views. Selected YouTube content related to vaginal rejuvenation exceeded 200,000 public views. These metrics indicate exposure and visibility, but may include repeated views, algorithmic amplification, paid promotion, international traffic and curiosity-driven consumption.

Meta Ad Library identified approximately 120 cosmetic gynaecology-related advertisements in the preceding year. Around 70% were associated with Western or Southern visible geographic location signals. Promotional content predominantly emphasised aesthetic, confidence, sexual or restorative themes. The study did not formally rate advertisement accuracy, risk disclosure, provider credentials or regulatory compliance; those remain priority areas for subsequent content-quality research (Table 4 and Figures 3,4).

Evidence synthesis and conceptual interpretation

The targeted evidence synthesis identified five high-impact interpretive domains: professional guidance,

motivations, online promotional influence, outcome certainty and digital-methodology limitations. The procedure hierarchy in the Sri Lankan digital dataset was consistent with international literature in which labiaplasty is the most visible and frequently discussed female genital cosmetic procedure. The high hymenoplasty signal may indicate local sociocultural salience that is less visible in Western outcome literature. Vaginal tightening and rejuvenation appeared highly visible on social media, consistent with commercial messaging around sexual confidence and postpartum restoration, but the evidence base for durable benefit remains limited.

Current systematic reviews and meta-analyses suggest possible short-term improvements in sexual function, genital self-image and satisfaction after labiaplasty or other female genital cosmetic procedures^{15,16}. Long-term evidence is weaker, with limited comparative follow-up and variable complication reporting¹⁷. This evidence context is crucial because the Sri Lankan data show high public visibility precisely in domains where commercial claims may exceed the certainty of clinical evidence.

The narrative evidence-certainty assessment rated professional guidance and digital-proxy methodology as higher-certainty domains, motivations and online promotion as moderate-certainty domains and patient-reported short-term outcomes, long-term

Table 4. Validity threats and mitigation strategies

Validity threat	Mechanism	Mitigation
Selection bias	Online platforms under-represent offline, older, lower-literacy and less-connected populations.	Interpreted findings as connected-population digital traces, not national prevalence.
Construct validity	Searches, views and advertisements measure different constructs.	Data not pooled into a single demand score; constructs kept separate.
Demographic ambiguity	Platform data do not verify gender, age, reproductive status or residence.	Avoided claims about women of reproductive age unless externally validated.
Algorithmic distortion	TikTok/YouTube metrics reflect recommendation systems, repeated views and possible paid promotion.	Reported as platform-visible engagement only.
Commercial-estimate instability	Keyword Planner and SEMrush outputs depend on settings, date, language and proprietary algorithms.	Treated as rounded estimates and reported platform limitations.
Geographic artefact	Provincial RSV is relative to total search activity and digital access.	Used regional findings as spatial signals only, not absolute local demand.
Language under-capture	Sinhala/Tamil euphemisms, spelling variants and transliterations may not return stable metrics.	Reported language under-ascertainment and avoided assuming English queries capture all interest.
Content-quality unknown	The study did not audit accuracy, risk disclosure or provider credentials.	Framed as next research priority.

Evidence domain	Indicative certainty	Interpretation	Basis for rating
1. Professional guidance and ethics	High	Consistent professional guidance supports counselling on normal anatomy, risks, alternatives, consent and expectation management.	Multiple professional guidance documents and narrative reviews; message is consistent across sources.
2. Digital-proxy methodology	High	Google Trends and related digital metrics are useful for measuring relative public attention, but not direct clinical demand or procedure uptake.	Strong methodological literature in infodemiology and digital epidemiology; limitations are well established.
3. Motivations for seeking procedures	Moderate	Motivations are multifactorial, commonly combining aesthetic, functional, body-image and relationship-related factors.	Systematic reviews and observational studies show broadly consistent patterns, but evidence is mostly non-randomised and context-specific.
4. Online promotion and content normalisation	Moderate	Online content may promote or normalise cosmetic gynaecology and may underemphasise uncertainty, normal variation or risk.	Systematic review plus content analyses; findings are relevant but based on limited samples and evolving platforms.
5. Psychological and partner influences	Moderate	Partner comments, self-image concerns and psychosocial factors may influence decision-making, but are not uniformly measured.	Systematic review and observational evidence suggest relevance, but heterogeneity and measurement limitations remain.
6. Short-term patient-reported outcomes	Low	Some studies report short-term improvement in satisfaction or sexual-function scores after procedures.	Mostly uncontrolled observational studies and pre-post analyses; risk of bias and short follow-up limit confidence.
7. Long-term outcomes and durability	Low	Long-term benefit and complication durability remain uncertain despite some favourable observational reports.	Limited long-term follow-up data, heterogeneous techniques and outcomes, and no strong comparative evidence.
8. Sri Lankan empirical evidence	Very low	There is minimal direct empirical evidence on patient motivations, service utilisation, outcomes or content quality in Sri Lanka.	Evidence is largely indirect or absent; current conclusions rely mainly on digital-trace data and international literature.

High
 Moderate
 Low
 Very low

Indicative certainty is based on study design, consistency, directness and recency. This is a narrative synthesis, not a formal GRADE assessment.

Figure 3. Narrative evidence-certainty heat map across key evidence domains.

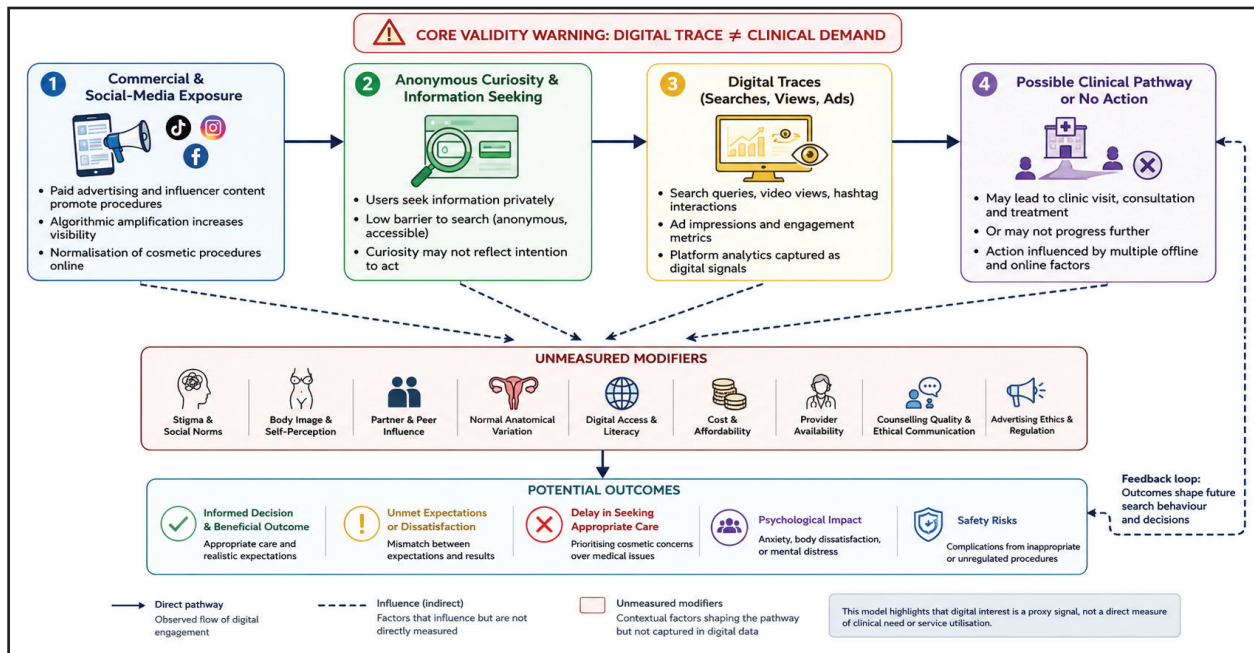


Figure 4. Conceptual diagram for interpreting digital cosmetic-gynaecology interest.

outcomes and Sri Lankan empirical clinical evidence as lower-certainty domains. This hierarchy shaped the interpretation: ethical principles and methodological cautions are relatively secure, whereas claims about procedural benefit, durability, complication rates and local patient motivations remain uncertain.

The conceptual framework developed for this article separates four stages: commercial and social-media exposure; anonymous curiosity and information-seeking; observable digital traces such as searches, views and advertisements; and possible downstream clinical pathways or no further action. Between these stages lie unmeasured modifiers such as stigma, body image, partner or peer influence, normal anatomical variation, digital access, cost, provider availability, counselling quality and advertising ethics.

The validity-threat plan identified eight recurrent threats: selection bias, construct validity problems, demographic ambiguity, algorithmic distortion, commercial-estimate instability, geographic artefact, language under-capture and unknown content quality. Mitigation centred on conservative wording, construct separation, avoidance of demographic attribution, separate reporting of platform metrics and explicit recognition that digital traces are proxy indicators rather than direct measures of clinical need.

Discussion

This study demonstrates measurable online visibility of cosmetic gynaecology in Sri Lanka. The largest search-volume signals were for labiaplasty, hymenoplasty and vaginal tightening. Regional relative search interest was highest in Western, Central and Southern Provinces. Social-media and video-platform engagement were substantial, particularly around vaginal tightening and labiaplasty-related content. Meta Ad Library review showed visible commercial promotion, concentrated mainly around Western and Southern geographic signals.

The structured evidence synthesis strengthened interpretation by preventing the data from being presented as isolated digital counts. The findings were interpreted against existing literature. The central inference is therefore calibrated: the Sri Lankan online environment shows substantial visibility and commercial engagement around cosmetic gynaecology, but these metrics do not establish clinical demand, procedure uptake or patient demographics.

The dominance of labiaplasty-related search activity is consistent with international literature, where labiaplasty is the most frequently discussed and evaluated female genital cosmetic procedure. Clinical studies report that women may seek labiaplasty for discomfort, appearance-related distress, hygiene

concerns, sexual activity-related issues or perceived abnormality^{4,8}. Recent systematic reviews continue to show mixed motivations, indicating that the field cannot be reduced to either purely aesthetic or purely functional demand^{12,13}.

The high Sri Lankan signal for hymenoplasty is notable. Hymenoplasty is less extensively studied in international literature but may carry cultural and relational implications in South Asian settings. However, the present study cannot determine whether searches reflect personal interest, stigma-driven information-seeking, commercial monitoring, academic curiosity or concerns about sexual relationships.

Hymenoplasty requires separate clinical and ethical attention because it may be linked to secrecy, fear, partner pressure or family expectations. A purely procedural or commercial response is inadequate. Clinicians should assess voluntariness, coercion, psychological distress, sexual violence history when clinically relevant, confidentiality needs and legal concerns. The digital signal in this study is not enough to define the social meaning of hymenoplasty in Sri Lanka, but it is enough to justify careful research and guidance rather than silence.

The large TikTok signal for vaginal tightening is also important. Procedures marketed as vaginal tightening or rejuvenation are heterogeneous and can include surgical, energy-based, injectable or nonspecific commercial interventions. Professional guidance warns that some marketed genital cosmetic procedures lack high-quality evidence and require careful counselling^{1,2}. High digital engagement in this domain should therefore trigger scrutiny of content quality and claims, not automatic interpretation as evidence of benefit.

Energy-based vaginal tightening and rejuvenation also require sharper terminology. Online promotion often merges surgical tightening, lasers, radiofrequency, injectables and general wellness claims into one market category. For patients, this creates a single promise of restoration; for clinicians, these are distinct interventions with different indications, mechanisms, evidence standards and risks. Future Sri Lankan guidance should require procedure-specific terminology rather than generic marketing labels and should distinguish treatment of recognised symptoms from elective aesthetic enhancement.

The findings align with prior evidence that the internet is not a neutral information environment for female genital cosmetic surgery. Liao et al. analysed online advertisements and highlighted clinical implications of promotional content⁹. Mowat et al. concluded that online content may contribute to the promotion and normalisation of female genital cosmetic surgery¹⁰. Learner et al. showed that revision-labiaplasty advertising could use loaded terminology, identify primary surgery as “botched” and provide limited risk or outcome information¹¹.

Against that background, the Sri Lankan data are operationally significant. High TikTok and YouTube engagement means users may encounter simplified, commercial, sexualised or algorithmically amplified messaging before encountering balanced medical information. The advertisement findings indicate that cosmetic gynaecology is not only being searched but also actively marketed. The governance question is whether online claims are accurate, balanced, credential-transparent, culturally appropriate and risk-disclosing.

Recent systematic reviews provide a nuanced picture. Nahidi et al. reported that labiaplasty appeared to improve female sexual function at least in the short term, but the conclusion was limited by inconsistencies in procedures, study design and measurement scales¹⁵. Zulfikaroglu and Kurban similarly concluded that observational pre-post data suggest short-term improvements in sexual function and genital self-image after female genital cosmetic surgery, but that these findings are vulnerable to regression to the mean, expectancy effects and lack of controls¹⁶. McGrattan et al. reviewed long-term outcomes and complications, identifying issues such as asymmetry, scarring and revision surgery while noting that many patients in published series report no complications¹⁷.

This evidence profile may shape Sri Lankan counselling. Patients should not be told that all concerns are trivial; physical symptoms, psychological distress and autonomy are still relevant. Equally, they should not be exposed to exaggerated claims of sexual, psychological or relationship transformation. A balanced consultation should assess symptoms, expectations, normal anatomical variation, alternatives, sexual function, relationship context, body-image concerns, confidentiality and provider qualification. Screening for body dysmorphic disorder or unrealistic expectations is particularly important in cosmetic-surgery settings¹⁸.

Normal-anatomy education is a low-risk, high-value intervention. A substantial part of genital appearance concern may arise from restricted visual norms, pornography-influenced expectations, social-media imagery or lack of exposure to normal anatomical diversity²⁸⁻³⁰. Patient education should not function as a barrier to care, but as an evidence-based first step before irreversible procedures. This is particularly relevant for young women, postpartum women and women presenting with distress disproportionate to clinical findings.

The study's strongest methodological contribution is its disciplined separation of digital visibility from clinical demand. Google Trends normalises search data by time and location, producing relative values rather than absolute counts²². Health-care research using Google Trends has been methodologically heterogeneous and reproducibility depends on careful documentation of search terms, geography, timeframe and interpretation^{23,24}.

This distinction is especially important in cosmetic gynaecology, where stigma, curiosity, partner concerns, commercial exposure, provider monitoring and academic searching can all generate digital traces. A high keyword volume may reflect concern, desire, fear, misinformation, commercial targeting or simple curiosity. A low volume may reflect absence of interest, but may also reflect language under-capture, stigma or poor digital access.

The marketing concentration in Western and Southern visible geographic signals may reflect service concentration, advertiser location, urban digital access or platform classification rather than true regional demand. The provincial Google Trends map (Figure 2) should therefore be used to identify where online visibility is strongest, not where procedures are necessarily being performed.

The appropriate response to these findings is neither promotion nor suppression of cosmetic gynaecology services. The evidence-based response is governance of information, counselling and advertising. Sri Lanka requires patient-facing resources in Sinhala, Tamil and English that explain normal vulval diversity, common symptoms, what is and is not known about procedures, possible complications, alternatives and the importance of qualified assessment. Such material should be non-shaming, clinically accurate and accessible to women who may not be ready to disclose concerns in a face-to-face setting.

Professional bodies should consider ethical communication standards for cosmetic gynaecology advertising. Minimum standards should address provider credentials, risk disclosure, management of before-and-after imagery, avoidance of coercive or shame-based language, consent, privacy and prohibition of unrealistic guarantees. Clinical education should include how to respond to requests without stigma while avoiding commercial overreach. These standards are particularly important where digital advertising reaches users before any clinical gatekeeping occurs.

For policy stakeholders, the practical value of the study lies in early signal detection. Digital analytics can identify topics that are becoming visible before robust clinical datasets exist. In sensitive fields, this is useful because patients may search online long before they consult clinicians. The limitation is equally important: if digital data are overinterpreted, they can legitimise commercial demand narratives that have not been clinically verified. The operational position should therefore be surveillance with safeguards. This balance is the core governance message.

The study addresses an under-researched South Asian women's health communication topic and avoids the common methodological error of equating search metrics with clinical demand. It also provides a pragmatic framework that can be reused for other sensitive sexual and reproductive health topics.

Substantial limitations are inherent to platform-derived digital data. These include demographic ambiguity, proprietary algorithms, language under-capture and inability to infer individual health-care behaviour. Sinhala, Tamil, mixed-language, misspelt and euphemistic queries may be under-captured. The study did not evaluate actual websites, videos or advertisements for content quality. The evidence review was targeted and narrative rather than systematic. Finally, platform metrics are dynamic; results should be interpreted as a time-bound snapshot rather than a stable epidemiological estimate.

Future research should progress from visibility measurement to content quality, patient motivation, provider mapping and clinical linkage. Priority work includes auditing websites, TikTok/YouTube videos and Meta advertisements for accuracy, risk disclosure

and provider credentials; qualitative research with women seeking information or consultations; anonymised service-utilisation studies; and evaluation of Sinhala, Tamil and English educational interventions. The end point should be safer decision-making and better governance, not simply more service promotion.

Conclusion

Cosmetic gynaecology has measurable digital visibility in Sri Lanka, particularly for labiaplasty, hymenoplasty and vaginal tightening. These signals reflect online attention and commercial activity, not confirmed clinical demand, procedure uptake or user demographics. Current evidence supports cautious, patient-centred counselling and recognises multifactorial motivations, but long-term outcome and safety data remain limited. The findings support evidence-based public education, ethical advertising standards, psychological screening where indicated and further clinical research linking digital information ecosystems with patient concerns, content quality and real-world service utilisation.

Ethics statement

This study used publicly accessible or platform-derived aggregate, non-identifiable secondary digital data. No human participants were recruited or contacted and no individual-level clinical or private data were accessed. Formal ethics approval and informed consent were therefore not applicable.

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