

Labiaplasty in Minors: Medicalizing Mutilation?

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Abstract

Labial hypertrophy, which lacks an accepted definition, is generally understood to refer to morphological and aesthetic characteristics of the labia that deviate from a perceived norm. Such deviation has the potential to affect many domains of a person's well-being, as does its surgical treatment, labiaplasty. Nearly 19,000 labiaplasty procedures were performed in the United States in 2021, representing a greater than three-fold increase since volumes were first reported in 2013. Nearly 20% of these procedures were performed in minors, and cases have been reported in children well before complete pubertal development or the age of personal consent. In this article, we explore the indications that are used to designate labiaplasty as "medically necessary" in minors, a status that, we argue, is required for such procedures to avoid fitting the definition of "medicalized FGM" (i.e., "female genital mutilation") according to the World Health Organization. As a part of this, we consider the particular ways in which outcomes are measured in this population. We shed light on persistent methodological shortcomings in the research of labiaplasty, discuss ethical and legal implications, and make recommendations to improve the relevance, reliability, and generalizability of future investigations into this increasingly common, controversial surgical procedure.

Keywords: adolescents; aesthetics; ethics; labial hypertrophy; labiaplasty; female genital mutilation; FGM

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20 Introduction

21 Labiaplasty, a surgical procedure to change the morphological characteristics of the labia,
22 typically reduces the size and increases the symmetry of the inner labia. Individuals may seek
23 labiaplasty for various reasons: reasons that may in some cases overlap, be causally related to
24 one another, or even be mutually reinforcing. These include physical-functional reasons (e.g., to
25 remove cancerous cells), psychological reasons (e.g., embarrassment due to a perception of
26 abnormality, whether accurate or inaccurate), social or interpersonal reasons (e.g., in response to
27 negative judgments by others; a desire to fit in or to feel accepted, for example by a sexual
28 partner), cosmetic reasons (e.g., subjective aesthetic preferences—albeit, often shaped by
29 cultural norms or exemplars), or a combination of these or other reasons.

30 In this essay, we consider the question of which reason, or set of reasons, is sufficient to
31 justify the performance of labiaplasty on a legal minor (i.e., someone younger than 18, assuming
32 they have parent/guardian support and permission) from a medical, ethical, and legal perspective.
33 Among other potential (ostensibly) medical indications, we are interested in the concept of
34 “labial hypertrophy” and whether this provides a clear and rational basis for performing
35 labiaplasty in minors. We also consider recent proposals for assessing patient suitability for
36 labiaplasty through the use of structured questionnaires. We offer methodological and conceptual
37 critiques of these instruments to hopefully improve such measures going forward.

38 Much is at stake in the questions we investigate here. The World Health Organization
39 (WHO) defines “medicalized FGM” (i.e., “female genital mutilation”) as any cutting or
40 modification of the vulva, including the labia, that (1) is done for “non-medical reasons” (these
41 are not defined) and (2) is carried out by a healthcare provider, whether in a public or private
42 clinic or elsewhere (WHO, 2010, p. 2). Notably, the definition applies irrespective of the
43 provider’s skill, the relative safety of the methods/equipment used, or even the age/majority or

consent status of the individual (i.e., in principle, including fully consenting adults who have requested the procedure for themselves; see Van Eekert et al., 2024, for discussion). This raises the possibility that labiaplasty might qualify as “medicalized FGM” on the WHO definition, depending on how one characterizes the “reasons” for which it is performed (including the reasons mentioned previously in this essay), and whether these are considered to be sufficient(ly) “medical” reasons to justify the procedure (Shahvisi & Earp, 2017; Shavisi, 2023).

Similar questions apply to the legal definition of “FGM” in various countries, including the United States. Likely inspired by the WHO definition, current US federal law criminalizes—without an explicit exemption for cosmetic surgeons¹—“any procedure performed for non-medical reasons that involves partial or total removal of, or other injury to, the external female genitalia,” including the labia—albeit, unlike the WHO definition, only in relation to procedures performed on individuals who are under the age of 18 (STOP FGM Act of 2020). This might suggest that labiaplasty (which involves the partial or total removal of the inner labia, as described in the law) may be considered a crime in the United States or in other countries with similar legal provisions,² at least when performed on a minor, if it is done for “non-medical reasons” (or alternatively, if it is not “necessary for the health of the person,” as described in footnote 1). However, there is a substantial lack of clarity around (1) what counts as a medical

¹ Unless they are performing an operation that is “necessary to the health of the person” and they are “licensed in the place of its performance as a medical practitioner,” or if the procedure is “performed on a person in labor or who has just given birth and is performed for medical purposes connected with that labor or birth by a person licensed in the place it is performed as a medical practitioner, midwife, or person in training to become such a practitioner or midwife” (see subsection [b] of 18 U.S. Code § 116 - Female genital mutilation, available at <https://www.law.cornell.edu/uscode/text/18/116>). However, note that if a procedure were performed for “non-medical reasons” as indicated in the main text (from subsection [e] of the law), it already follows from this that—unless by sheer accident—it would also not be “necessary to the health of the person,” suggesting a degree of redundancy in the law. Then again, the concepts are not exactly equivalent: something might be done “for medical reasons” (a weak standard) without being necessary to the health of the person (a strong standard). This suggests that “non-medical reasons” (in subsection [e], defining “FGM”) should be changed to “medically unnecessary” (reflecting the standard in subsection [b], clarifying when a surgical procedure does not violate the law) to avoid confusion (e.g., someone performing a genital procedure for a “medical reason,” but one which does not rise to the level of being necessary for the health of the person: i.e., an insufficiently strong medical reason).

² For the situation in Switzerland, see Bader & Mottier, 2020.

reason for labiaplasty (as opposed to some other type of reason, e.g., a “cultural” or “cosmetic” one), (2) how good a medical reason there must be for a labiaplasty not to count as “FGM,” and (3) whether this is different from its needing to be “necessary for the health of the person” (i.e., medically necessary).³

How might we get more clarity on these issues? One approach might be to look at relevant statements from professional medical associations. The American College of Obstetricians and Gynecologists (ACOG) advises that labiaplasty, particularly in minors, “should be considered only in those with significant congenital malformation, or persistent symptoms that the physician believes are caused directly by labial anatomy, or both” (ACOG, 2024). However, in the absence of widely accepted, objective standards for making such determinations (e.g., what constitutes a “significant” congenital malformation; how “directly” must symptoms be linked to labial anatomy, and by virtue of what causal mechanisms?), legal and ethical questions will remain.

The term “labial hypertrophy” has been used as a diagnosis supporting labiaplasty, but no objective, non-arbitrary criteria have been established to define the term (Colaneri, 2018). Furthermore, some consider the introduction and use of this diagnostic category to involve the needless or inappropriate “medicalization” of the diverse range of human vulval anatomies (Perelmuter, 2024), resulting, in turn, in the “pathologization” of certain labial shapes or sizes. In this context, medicalization refers to bringing something ostensibly non-medical into the sphere of medicine and treating it as a medical issue, while pathologization refers to conceptualizing

³ In other words, if the only medical reason that is considered “good enough” to legally justify performing a labiaplasty on a minor in the United States is the reason that it is necessary for the health of the person (accounting for all relevant alternatives), that would seem to set a very high bar and one that most likely is not met in practice, as we will discuss.

something as a disease state or indicative of disease (usually with the implication that this is mistaken or inapt) (for discussion, see Sholl, 2017).

However, even if one believed it was justified, in principle, to characterize some types of labia as “hypertrophic” (and therefore as potentially legitimate candidates for medical treatment), the lack of standardized, well-supported, and/or widely endorsed criteria for identifying the requisite signs and symptoms for a diagnosis would still be a problem. Accordingly, uncertainty and disagreement around what the precise medical indications for labiaplasty are, or should be, is a persistent issue, as evidenced for example by uneven insurance coverage for the procedure among payers and national health systems (Rowley et al., 2022).

The number of labiaplasty procedures in the United States has increased rapidly during the past decade, from just over 6,000 in 2013 (American Society for Aesthetic Plastic Surgery, 2013) to nearly 24,000 in 2022 (The Aesthetic Society, 2023). Nearly 20% of these cases are estimated to have been performed in minors (Luchristt et al., 2022). Such early requests for labiaplasty are perhaps not surprising given that children as young as three to six years of age express dissatisfaction with various aspects of their bodies (Harriger et al., 2010; Spiel et al., 2012; Tatangelo et al., 2016). In anticipation of such requests continuing, it is important to determine the indications being used in relation to minor individuals/patients to designate labiaplasty as medically necessary, or at least appropriate, and the ways in which outcomes are measured in this population. In the following sections, we summarize recent evidence on both indications and outcomes while identifying persistent methodological shortcomings and unresolved ethical concerns, before offering recommendations to strengthen future studies. First, however, we consider in greater depth the concept of a “medical reason” for labiaplasty, along with the related but stronger standard of “medical necessity.”

105 **Medical Reasons vs. Medical Necessity**

106 As mentioned in the introduction, when performed for “non-medical reasons,” cutting of
 107 the vulva of a minor, including surgery to reduce the labia, is consistent with the definition of
 108 “female genital mutilation” (FGM) according to current US federal legislation (STOP FGM Act
 109 of 2020, H.R. 6100, enacted as Pub. L. 116–309), and corresponds to FGM Type 2a on the WHO
 110 typology (see Shahvisi & Earp, 2019). However, neither source makes clear what constitutes an
 111 adequate “medical reason” for performing labiaplasty, nor how it could be determined that any
 112 stated medical reason was the “real” (or primary, or only) reason for proceeding with the
 113 operation.

114 To see why this is a problem, suppose a clinician agrees to cut or modify the labia of a
 115 12-year-old girl, at the request of her parents and with her agreement (or acquiescence)⁴ because
 116 the clinician, parents, and child are all members of a community that regards the modification, or
 117 some similar procedure, as being culturally or religiously mandated. Depending on local
 118 attitudes, this might be seen as reason enough for the clinician to perform the procedure (if only
 119 on intended harm-reduction grounds; see Kimani et al., 2018); but suppose the wider society
 120 and/or legal authorities would regard such an act as “medicalized FGM.” It stands to reason that,
 121 if “non-medical reasons” are all that technically separates “FGM” from a physically similar, or
 122 even identical, procedure that is not considered “FGM,” then an incentive is created for the
 123 clinician (and/or parents or other community members, or the community writ large) to identify a
 124 “medical reason” for the desired modification: i.e., a reason (or rationale) that can be offered by

⁴ Note that the appropriate criteria for determining whether a minor’s agreement constitutes morally valid consent, or whether, instead, parental “proxy” permission is sufficient to authorize certain procedures, is a longstanding issue we will not be able to address here. For an overview of some of the related bioethical concerns around minors’ agreement to undergo labiaplasty specifically, see, e.g., Boraei et al., 2008; Spriggs & Gillam, 2016; for a broader analysis of children’s decision-making in relation to the right to bodily integrity, see Earp, 2019).

125 way of justification, but without it necessarily needing to be a good medical reason, since this is
 126 not explicitly stated in the WHO definition (see Earp, 2021).

127 As an analogy, one might think of the example of non-therapeutic infant penile
 128 circumcision, a medicalized genital practice that is customary in the United States, and which is
 129 primarily performed, in that context, for non-medical reasons, but with “medical reasons”
 130 sometimes cited also. According to Andrew Freedman (2016), co-author of the (now expired)
 131 2012 American Academy of Pediatrics policy on circumcision (which stated that parents should
 132 be able to choose circumcision for their sons due to the possibility that this could reduce the risk
 133 of future treatable infections, or other problems that do not typically require surgery to
 134 adequately address or prevent them),

135 Most circumcisions are done due to religious and cultural tradition. In the West, although
 136 parents may use the conflicting medical literature to buttress their own beliefs and
 137 desires, for the most part parents choose what they want for a wide variety of nonmedical
 138 reasons. There can be no doubt that religion, culture, aesthetic preference, familial
 139 identity, and personal experience all factor into their decision. Few parents when really
 140 questioned are doing it solely to lower the risk of urinary tract infections or ulcerative
 141 sexually transmitted infections. (p. 1)

142
 143 In other words, a medicalized genital practice might sometimes be performed for a mix of
 144 medical and non-medical reasons, without it necessarily being clear, in any particular case,
 145 which reason or set of reasons predominates (Hellsten, 2004).⁵ However, this is not only true for
 146

⁵ It might be argued that, in the case of cutting or modification of the vulva, as long as at least one of the reasons is “non-medical” in nature, this should be enough to fulfill the criteria for being “FGM” as opposed to “non-FGM” on the WHO definition. This is because, strictly speaking, “FGM” is defined as something done for “non-medical reasons”—rather than as something that is not done for “medical reasons.” Logically, this is compatible with the idea that it is really the presence of a non-medical reason, rather than the absence of a medical reason, that is definitive of “FGM.” However, in practice, it may not be so easy to draw clear distinctions here. For example,

newborn penile circumcision as practiced in the United States. It is also true of various practices affecting the pediatric vulva, particularly in countries where both male and female “circumcision” are practiced together within the same families and communities: for example, in parts of South and Southeast Asia, where both practices have been largely medicalized and where “health benefits” (and/or harm-reduction—which is also a “medical reason,” though not necessarily a good or sufficient one) are often cited as justifications for clinician involvement (Earp et al., 2024; Hidayana, 2024; Iguchi et al., 2023; Rashid et al., 2020).

Nevertheless, it seems likely that opponents of “FGM”—like opponents of non-therapeutic penile circumcision in small children, and like opponents of so-called “normalizing” surgeries on infants born with intersex traits (e.g., Carpenter, 2018), would disagree with the proposition that any mere “medical reason” is, in fact, sufficient to justify genital surgery in a minor, at least if the minor is too young to consent (Brussels Collaboration on Bodily Integrity, 2019; Svoboda, 2017). Instead, they are likely to insist on a stronger standard: namely, that of medical necessity.

In fact, as discussed in footnote 1, this standard does appear elsewhere in the US federal law prohibiting “FGM”—not in the section defining the term itself (where “non-medical reasons” is used), but in the section clarifying when a surgical procedure, as carried out by a healthcare provider who is licensed to perform it in the relevant setting, does not actually violate the law. There, it is said that the procedure must be “necessary for the health of the person” (or at least performed “for medical purposes” in relation to birth or labor). So, there is some indication that the stronger standard of “medical necessity” is a relevant legal criterion.

imagine a surgery that is done for reasons that are clearly medical in nature (e.g., removing malignant skin cells), but that also has foreseeable and desired consequences that are, on some views, non-medical (e.g., anticipated cosmetic improvements). In such a case, it might be a stretch to assert that the only intended aim of the surgery (i.e., allegedly, the true or ultimate motivating reason) is the “purely” medical one, whereas the foreseeable desired consequence is “merely” a side-effect, and thus not (among) the actual reason(s) for which the procedure was done. Although this is theoretically possible, in actual decision-making, such neat divisions are likely rare or non-existent.

Unfortunately, however, the same lack of clarity that surrounds the concept (or the application of the concept) of “non-medical reasons” extends to the concept of “medical necessity” (Earp et al., 2023; Godwin & Earp, 2023). In practice, what actually counts as medically necessary for the purposes of health insurance reimbursement may come down to whatever happens to be covered under individual health insurance policies (NAIC, 2023). However, this may make the concept seem arbitrary, lacking a principled justification. Seeking to address this problem, the physician-ethicist Dominic Wilkinson (2023, p. 285) has recently proposed the following substantive definition:

Medical Necessity: treatment X is ‘medically necessary’ just if, in the absence of X, patient P will suffer from, or has a high chance of suffering from, a significant deterioration in health-related wellbeing, or continuation of a significantly lower than normal state of health-related wellbeing.

According to Wilkinson (2023), an advantage of this definition is that it distinguishes “medical effects or benefits” from genuine “medical need” and is thus more stringent than saying an intervention is merely medically “appropriate” or “reasonable.” Using again the analogous case of penile circumcision to illustrate these distinctions, Wilkinson writes that it “might be regarded as medically necessary in cases of severe phimosis with recurrent balanitis (narrowing of the foreskin and repeated inflammation/infection) that is unlikely to resolve without surgery. However, circumcision would not be medically necessary in order to reduce the risk of future acquisition of HIV (since this may be prevented in other ways)” (p. 285). This caveat suggests that whether a given procedure is truly necessary depends on whether there are “other ways” of addressing the problem that would be more appropriate—for example, due to being less invasive or risky, or more respectful of autonomy (Van Howe & Svoboda, 2008). If there are such “other ways,” the procedure would not, on Wilkinson’s view, be strictly necessary to preserve or restore

192 “normal” health-related well-being, because those other ways could—and should—be used first
 193 or instead.

194 Another key aspect of Wilkinson’s definition is the qualification about “health-related”
 195 well-being. After all, there might be many things that could negatively affect a person’s well-
 196 being, and even drive them below some normative threshold of well-being, without necessarily
 197 being sufficiently or relevantly “health-related” so as to warrant a medical intervention in
 198 response, i.e., as opposed to some other type of intervention, such as a social or political one (cf.
 199 Davies, 2023).

200 Consider, for example, someone who has few or no close, loving relationships—a highly
 201 regrettable situation. In many cases, this will correspond to, or result in, lowered levels of health
 202 (e.g., due to a lack of support when one is dealing with an illness); however, according to some
 203 theories of well-being, a lack of close, loving relationships is objectively bad for one (i.e.,
 204 contrary to well-being), even if it does not happen to result in specific health-related problems
 205 (Rice, 2013). Thus, it is possible to distinguish between threats to health-related well-being (as in
 206 Wilkinson’s definition) and threats to well-being full stop: in short, at least plausibly, there is
 207 more to well-being than simply being in good health (on various plausible definitions of
 208 “health,” whether physical or mental; see Leonardi, 2018).

209 This distinction is important because medical professionals have specialized training in,
 210 and knowledge about, health-related well-being (paradigmatically, in relation to diseases of the
 211 body or mental disorders), whereas they are not necessarily well-equipped, qua medical
 212 professionals, to deal with overall well-being: for example, in relation to one’s social life.
 213 Moreover, even if a given issue (e.g., a lack of close relationships) turns out to have
 214 paradigmatically health-related consequences (e.g., depression due to loneliness), it does not
 215 necessarily follow that a medical treatment, especially one that targets biology (e.g.,

antidepressant pills), is the most appropriate response, at least when compared to potential alternatives, such as psychosocial or behavioral interventions (e.g., trying to make friends by attending local community events).⁶

What does all this imply for the appropriateness of performing a labiaplasty based on claims of medical necessity? According to a recent international consensus statement on the ethics of genital modification (albeit focusing on non-voluntary procedures in prepubescent minors), for a genital surgery to be truly medically necessary, there must (1) be a problem or condition that poses a significant threat health-related well-being, where (2) the proposed surgery is “among the least risky, invasive, or harmful of the available treatment options for which there is reasonable evidence of similar effectiveness” (The Brussels Collaboration on Bodily Integrity, 2024).

As we will discuss, cosmetic or aesthetic concerns are often reported as motivations for labiaplasty. Do these suffice for medical necessity? Based on the above analysis, there are two steps to answering this question: first, it must be determined whether such concerns represent a medical problem (i.e., do they pose a substantial threat to health-related well-being, as opposed to “general” well-being, which is outside the professional competence of healthcare providers); and second, is the proposed surgery truly necessary for solving the problem (i.e., considering all relevant alternatives, including approaches that might be less invasive or risky).

With respect to (1), it must first be acknowledged that, in some cases, a person might pursue labiaplasty for cosmetic reasons that have more to do with personal aesthetic preferences, or perhaps as a means to avoid unpleasant, but not debilitating (nor clearly “health-related”) psychological experiences, such as occasional embarrassment. And yet, for the concept of

⁶ Of course, it need not be “one or the other”—in some cases, a biological intervention may help a person make necessary changes psychologically or behaviorally; see Gupta (2013).

“medical necessity” to serve any real purpose in this context (e.g., distinguishing “FGM” from physically similar procedures that are not considered to be “FGM”) it must not be taken to include simply any type or degree of dissatisfaction with one’s body, or a mere preference for how it might look if surgically altered. On the other hand, clinical experience suggests that, in different sorts of cases, a person might well be so distressed about their unmodified labia (i.e., on account of perceiving them to be aesthetically displeasing, regardless of whether their labia are physiologically atypical) that this could constitute a problem for which medical treatment of some sort might be justified, particularly if the distress was severe and persistent, or interfered with work or relationships, etc. To borrow Wilkinson’s formulation, such an individual might be said to have a “lower than normal state of health related wellbeing,” where this referred to their mental health or psychological well-being, possibly even taking the form of (i.e., meeting the diagnostic criteria for) a recognized mental disorder, such as body dysmorphic disorder (Müllerová & Weiss, 2020).

However, even if that were the case, the second step in the analysis would still need to be taken: namely, determining whether there are other, more appropriate means of addressing the stated concerns apart from surgery (e.g., psychological counseling). Current evidence suggests that many individuals seeking labiaplasty, when offered psychological counseling to address the underlying issues that may be driving them to seek the procedure, ultimately decide against it (McQuillan et al., 2018; Sharp et al., 2016, 2023).

In the following section, we will review common reasons patients report for seeking labiaplasty and show how physical-functional, psychological, and “cosmetic” reasons are often, in practice, intertwined.

Motivations and Indications for Labiaplasty in Minors

It is crucial to evaluate both the minor's and guardian's motivations when an adolescent requests labiaplasty. The initial reasons given may be influenced by the criteria they believe the surgeon will use to determine eligibility. For example, individuals whose labial size or appearance causes both physical symptoms and psychological distress might focus on the physical symptoms if they think the surgeon will consider them to be a more "legitimate" reason to perform surgery than the psychological issues. Guardians might also focus on what they think the surgeon "needs to hear" to justify surgery.

Anatomical Basis

Labial hypertrophy has been variously described as protrusion of the inner labia beyond the outer labia (Lynch et al., 2008); inner labia that are more than 5 cm wide (Radman, 1976); or when there is an "excess" of inner labia tissue near the vaginal introitus (Cunha et al., 2001). However, a recent review of normative datasets for vulvas reported wide ranges for adult labial length (5–100 mm) and width (1–60 mm), and that it is more common than not for inner labia to protrude beyond the outer labia (Hayes & Temple-Smith, 2021). Such variation may be even more pronounced among adolescents, given the wide range of onset and pace of pubertal development.

Given the subjectivity and variability of an anatomical diagnosis of labial hypertrophy, it is a weak basis on which to determine the medical necessity of labiaplasty. Although few data are available to determine physiologic measurements of genital anatomy in children and adolescents with labia, we might expect the anatomy to vary as much as, or even more than, it does in adults. The most recent work to quantify "normal" labial size in adolescents was performed by Brodie et al. (2019), who examined 44 individuals ages 10–19 years and found that the inner labia differed in length (asymmetry) in 43% of cases and differed in width in more than half, with that

difference ranging from 1 to 22 mm. The authors found no correlations between labial measurements and patient age, height, weight, or race (method for determining race was not reported).

Earlier work included younger children and did not use consistently defined measurements. Chalmers et al. (2014) measured the external genitalia in 56 prepubescent girls (Tanner stage 1) who ranged in age from <2 years to >11 years (exact ages not reported). However, the anatomical measures they evaluated were different from those of Brodie et al., with only one measure in common—clitoral width. An earlier study by Akbiyik & Kutlu (2010) used similar measurements to those of Brodie et al., but they studied children younger than 11 years, again precluding comparison.

Non-pathological anatomical variations of the inner labia, particularly in individuals who are still developing, may be perceived as problematic by those individuals or their parents, leading to requests for labiaplasty. These variations have the potential to cause insecurity and dissatisfaction with genital appearance. In addition to citing functional impairment (Qiang et al., 2022), many individuals who request labiaplasty do so for explicitly aesthetic reasons (Liao et al., 2010).

Functional and Aesthetic Concerns

Although functional and aesthetic concerns are, in principle, two distinct potential indications for labiaplasty, they are often reported together. Functional symptoms may include irritation from rubbing against clothing and uncomfortable sexual intercourse. Social pressures may also lead girls and other persons with a vulva to seek aesthetic alterations of their genitals (Creighton, 2014). Aesthetic dissatisfaction can lead to embarrassment, avoidance of certain social and sexual situations, and psychological distress (Fang & Hofmann, 2010; Schick et al.,

2010). Indeed, a person's psychological health, in terms of low self-confidence and anxiety, may be used as a justification for labiaplasty (Braun, 2010). However, as mentioned previously, psychological distress related to labial anatomy may be amenable to nonsurgical treatment, rendering labiaplasty medically unnecessary.

Bucknor et al. (2018) reported on 451 patients who underwent labiaplasty, including ten patients younger than 18 years (range: 14–17 years). The indication for labiaplasty was overwhelmingly aesthetic (82%), with other indications including discomfort (61%), nonsexual function (54%), and sexual function (12%). The authors performed a separate analysis of the ten minor patients, nine of whom reported “discomfort” and “appearance” as their surgical indications. No details were provided as to whether any minor patient reported only aesthetic concerns in the absence of functional symptoms.

More recently, Qin et al. (2023) reported on 12 minors aged 9–17 years who underwent labiaplasty at their institution. All 12 patients reportedly sought labiaplasty for functional reasons, which were discomfort while playing sports, performing daily activities, or wearing tight clothing. However, the authors also indicate that aesthetic, psychological, and “quality-of-life” concerns were paramount. This discrepancy points to the intertwined and poorly defined nature of reported indications for labiaplasty. Moreover, functional impairment and discomfort are not well studied in this population, nor are standardized measures available to quantify these symptoms.

In a study of patients referred to the Royal Children's Hospital (Melbourne, Australia) for concerns about labial appearance, McQuillan et al. (2018) documented several indications. Of 41 patients, who ranged in age from 5 to 21 years, 70% reported friction or pain attributed to labial size. However, labial size was measured in only five patients. Labial appearance was deemed “normal” in all patients, presumably on visual examination. When offered reassurance that their

labia were “normal,” 88% of patients were reassured. Only four patients underwent labiaplasty. Notably, many of the requests for labiaplasty (24%) stemmed from mothers’ concerns.

Outcomes of Labiaplasty in Minors

The long-term physical, functional, and psychosexual effects of labiaplasty are unknown or poorly estimated, particularly when performed in minors (Kalampalikis & Michala, 2023). Qualitative research to explore these effects is scant (Bramwell et al., 2007), and the reports that form the basis of our scientific knowledge about labiaplasty outcomes have shortcomings that make their results difficult to interpret.

Complications and Revisions

Many studies of labiaplasty in adults emphasize complication rates as low as 1% to 3% (Goodman et al., 2010; Hunter, 2016; Sorice-Virk et al., 2020; Xia et al., 2021). Interestingly, Goodman et al. (2010) reported two different complication rates for their sample of 177 adults who underwent labiaplasty and/or clitoral hood reduction. The treating physicians in that study reported a complication rate of 6%, whereas the patient-reported complication rate was 9% when derived from responses to the question, “Do you feel you had a complication from surgery?” This discrepancy suggests that not all patient-perceived complications are being captured during clinical assessment, and that a more comprehensive and standardized outcome measure, such as the classification proposed by Garcia et al. (2020), is needed.

Limited evidence exists regarding complications after labiaplasty in adolescents. Jodoin and Dubuc (2021) reported a complication rate of 20% after labiaplasty in 44 adolescents, raising the question of whether complications might be more common in younger patients. The complications reported in that study were wound dehiscence (14%), bleeding (9%), and one case

of wound infection (2%). Similarly, of the ten minors included in the study by Bucknor et al. (2018), two underwent revision surgery, for a 20% revision rate, which contrasts with the overall complication rate of 4% for the 441 adults in that study.

In the study by Qin et al. (2023), hematoma occurred in two of 12 (17%) adolescent patients. The authors report that hematoma was treated successfully and efficiently in both patients. However, reopening the surgical wound, evacuating the hematoma, and re-suturing the wound less than 24 hours after the initial surgery is likely to be perceived as a substantial complication by an adolescent. These concerns point to the need for a standardized classification system for complications of labiaplasty, as well as assessment tools that capture not just clinically apparent complications, but all sequelae that are considered relevant by patients.

Patient Satisfaction

Measurement of long-term patient satisfaction with a sensitive procedure like labiaplasty presents inherent challenges, and as a result, major gaps exist in our understanding. Patients, particularly minors, may be reluctant to participate in studies, and they may be prone to answering questions in ways they think investigators want to hear. Their beliefs about the procedure may evolve over time, particularly in the case of patients who have not completed pubertal development and/or were not sexually active before the time of surgery.

In the recent study by Qin et al. (2023), the duration of follow-up was highly variable, ranging from 14–67 months, and no patients agreed to return to the clinic for long-term follow-up. Length of follow-up was not reported at the individual level, so it is unknown how old a given patient was at assessment. For example, if the youngest patient (9 years) were followed for the minimum period (14 months), her assessment would occur at age 10 or 11, well before pubertal development ends, and in many children, before it begins. In a child of this age, it would

be difficult to meaningfully gauge satisfaction with a genital surgery. Moreover, none of the 12 patients reported being sexually active. It is plausible that satisfaction with labiaplasty might change with psychosexual development and relationships.

Qin et al. (2023) assessed patient satisfaction over the telephone or via an instant messaging application with two questions. The first was, “How satisfied or dissatisfied are you with labiaplasty surgery?” Possible answers were “very satisfied,” “satisfied,” or “dissatisfied.” Two of these three options indicate satisfaction, creating a measure skewed in favor of satisfaction. The second question, “Did the labiaplasty improve your preoperative symptoms of discomfort?”, offered five options: resolved, significantly improved, moderately or slightly improved, not improved, or worse. Similarly, three of the five options indicate improvement, resulting in a measure biased in favor of improvement. A future survey question might instead ask, “Have your preoperative symptoms changed? If so, how?” This phrasing might encourage patients to think of change in neutral terms, rather than favoring improvement or decline.

Qualitative assessment of long-term outcomes of labiaplasty will be critical to our understanding of the risks, benefits, and perceived necessity of this procedure. Many studies that report high patient satisfaction provide incomplete assessments. For example, Goodman et al. (2010) reported that 92% of 258 adults were satisfied after undergoing female genital plastic surgery, which included 104 cases of labiaplasty. Their survey asked about the “effect(s) of the procedure on...sexual enjoyment” with two of four possible answers indicating enhancement, one indicating little or no effect, and only one indicating a negative effect. The survey question about “overall satisfaction” allowed only a yes/no response, and participants were not asked whether they would choose to undergo the same procedure again for the same result. These factors, as well as short duration of follow-up, do not enable evidence-based conclusions about true patient satisfaction with the many aspects of quality-of-life that labiaplasty may affect.

A particular concern when performing labiaplasty in patients who have not reached sexual maturity is how the surgery will affect future sexual health and satisfaction. Placik and Arkins (2015) studied genital sensitivity to pressure after labiaplasty and concomitant clitoral hood reduction in adults. They concluded that “labiaplasty, as performed by the described trim/edge resection method, does not result in diminished sensitivity.” However, only 28 patients were followed for a full 12 months, and it is plausible that sensitivity could change over time. It is also unknown how clinical measures of sensitivity relate to sexual response and satisfaction, and how sensitivity in this group would compare with age-matched controls. Future work should explore both quantitative and qualitative aspects of sexual health and satisfaction of individuals who have undergone labiaplasty compared with those who have not.

Recommendations for Future Research

Many questions must be answered before the healthcare community can stand on solid ethical and evidence-based ground when counseling minor patients who request labiaplasty. Education of medical professionals will also be needed to enable them to counsel patients and their families according to the evidence—as well as ethical and legal standards that apply in their jurisdiction. In the following section we describe the context of these questions and propose approaches to their study.

Development of Surgical Eligibility Standards

An objective tool for measuring eligibility for labiaplasty is needed given that determinations are currently based on subjective clinical judgment. Official guidelines of several professional gynecological organizations, including those of ACOG (2017), are too broad to be useful. For example, they include vague considerations such as “psychological concerns” and do

not clarify the scope, severity, or persistence of these concerns—or whether they could be addressed nonsurgically. There remains abundant room for individual surgeons and health insurers and systems to decide, according to a subjective interpretation of these guidelines, when labiaplasty is medically warranted.

To address this problem, Qin et al. (2023) recently proposed a new instrument for determining eligibility for labiaplasty in minors. The “Surgical Indication Scale for Assessment of Adolescent’s Labia Hypertrophy” is intended to determine eligibility on the basis of six criteria: (1) symptoms, (2) motivation for surgery (whether patient, guardian, or both initiated the surgical consultation), (3) understanding of risks and benefits, (4) acceptance of potential risks, (5) intention of the patient, and (6) intention of the guardian. The score for each item ranges from 0 to 3 points, with a maximum total score of 18. The authors set a minimum score of 14 as the threshold for surgical eligibility. In addition, a score of 0 for any item would render the patient ineligible.

The indication scale proposed by Qin et al. raises several questions that should be considered in refining such an instrument. First, it assigns equal weight to the “surgical intention” of the guardian and of the patient. However, the patient alone assumes all risks of the procedure. Patients also may be too young to meaningfully weigh the potential risks and benefits, and their values (e.g., regarding bodily integrity and aesthetics) may differ from those of their guardians. Second, patients may be influenced by their guardians, as shown by McQuillan et al. (2018). Even adults report being influenced by others when deciding to pursue labiaplasty, and we can imagine a similar influence of a parent or guardian on a minor patient.

Qiang et al. (2023) recently reported on 48 adults in China seeking labiaplasty solely for cosmetic reasons. Three adults (6%) said they were influenced by their sexual partners; and of nine patients seeking labiaplasty for psychological reasons, six (33%) said they were influenced

by their husbands. Beyond personal influences, many authors have raised concerns about the role of the media and pornography in influencing genital dissatisfaction and the decision to pursue labiaplasty (Braun, 2010; Clerico et al., 2017; Crouch et al., 2011; Hayes & Temple-Smith, 2021; Liao & Creighton, 2007). Therefore, a valid eligibility tool should enable assessment of the patient's own feelings about labiaplasty, apart from those of a partner or guardian, and should weight the patient's feelings more heavily than those of any other person.

Creating Formal Guidance on Counseling and Referral

Robust evidence is lacking to guide clinicians when counseling minors who express "genital dissatisfaction" (Michala, 2020). In the study by Qin et al. (2023), the authors did not report discussing nonsurgical treatments, such as wearing looser clothing, participating in psychological counseling, or obtaining advice on appropriate gynecologic care and hygiene. For some patients, these noninvasive measures suffice. In fact, education on the wide range of normal genital anatomy has been shown to provide reassurance for many young children and their parents who then decide against pursuing surgery (McQuillan et al., 2018). It may be important to include parents and guardians in counseling to help determine whether and how their views are contributing to the minor patient's dissatisfaction and to educate the involved family members about normal labial variation. A standardized, detailed approach to such counseling that considers patient concerns and the patient's physical and emotional maturity is needed.

Guidelines from ACOG recommend that clinicians "have a good working knowledge of nonsurgical alternatives...as well as knowledge of indications and timing of surgical intervention and referral" (American College of Obstetricians and Gynecologists, 2017). However, this recommendation is difficult to follow when little is known about the implications of timing on

the outcomes of labiaplasty in minors. The guidelines also recommend “appropriate patient counseling and assessment of the adolescent’s physical maturity and emotional readiness” for surgery. However, these recommendations do not suggest the steps and scope of such counseling, nor do they provide an objective means of assessment. Moreover, no validated tools exist to quantify the nature and severity of symptoms leading to the request for surgery with associated possible conservative treatments to be proposed, making it difficult to predict when and how nonsurgical interventions can provide sufficient relief. Importantly, the ACOG guidelines acknowledge the potential influence of “parental concerns for body perfection” but do not provide guidance on how to address these concerns with parents.

Strengthening Research Methods

Several sources of potential bias exist in studies of labiaplasty, particularly when assessing the youngest patients. Such studies typically have small sample sizes and short follow-up times, producing results that may not be representative of adolescents who undergo labiaplasty in other settings, those who undergo it for other indications, and those whose eligibility is determined differently (Jodoin & Dubuc, 2021; McQuillan et al., 2018; Qin et al., 2023). These impediments to generalizability prevent evidence-based conclusions about the reasons patients seek surgery and the outcomes they experience.

One of the few examples of a multicenter study of female genital plastic surgery was performed by Goodman et al. (2010); however, that study, while including more than 250 adults, was retrospective and surveyed participants by mail. The time between surgery and completion of the questionnaire varied and was not reported or taken into account during analysis. Current needs demand multicenter collaboration to design and conduct prospective, longitudinal studies

that collect both quantitative and qualitative data from larger, diverse samples of patients, particularly focusing on the adolescent population.

Another source of bias is socially desirable responding, in which respondents answer in ways they believe will please other parties (van de Mortel, 2008). In the context of labiaplasty in minors, it is plausible that adolescents would want to please their parents, the researchers, or the surgeon. In the study by Qin et al. (2023), the follow-up questionnaire was distributed by the surgeon team, which raises concern that patients might be prone to emphasizing their satisfaction with the care they received from that team. This limitation points to the need for independent evaluators when assessing patient satisfaction with labiaplasty (for related arguments about patient surveys in relation to other genital surgeries, see Carpenter et al., 2024).

Another important challenge is to uncover the complex dynamics involved in seeking treatment and choosing a particular intervention for dissatisfaction with labial appearance. The ethnographic technique of semi-structured interviews is well-suited to this task. Spriggs and Gillam (2018) have initiated such work, and further in-depth interviews of patients could build on their findings and provide insight into cultural, social, and familial influences, suggesting communication strategies to help support patients in their body satisfaction and treatment choices.

Finally, when designing surveys, reporting results, and communicating with patients, the language used to describe labiaplasty is important. Many factors may influence minors' satisfaction with their sexual organs (and research is needed to identify those factors), and their self-perceptions can change over time. A study of more than 500 Chinese children as young as 8 years old found that nontransgender girls became more satisfied with their sexual organs after reaching Tanner stage II breast development (Zhang et al., 2020). When clinicians and study authors use language describing procedures as being "required" with the intention to "improve"

genital appearance, or when they describe labial “enlargement,” they risk pathologizing normal variations in anatomy or projecting their own aesthetic preferences onto patients. Some minor patients may not have reached a stage of maturity that enables them to meaningfully consent to permanent surgical alterations of their bodies (see Spriggs & Gillam, 2018, for discussion).

Conclusion

A recommendation for labiaplasty to treat functional symptoms related to the size and appearance of the labia in adolescents requires robust evidence. In addition to the empirical data that are needed to support such a recommendation, the ethical and legal implications of offering labiaplasty to minors deserve careful exploration, particularly in light of growing calls in the literature clarify how the procedure differs, if at all, from “medicalized FGM” (Type 2a on the WHO classification), or indeed from FGM as defined by US federal law, which turns on the question of whether there is (sufficient) “medical reason” for the procedure, which may simply amount to its being “medically necessary” (Earp et al., 2023). Quantitative and qualitative data are needed to assess quality of life, mental health, and physical functions using validated instruments before and after treatment. Large case-control studies comparing minors who undergo labiaplasty versus those who are treated nonsurgically would enable comparisons of multi-dimensional outcomes. In patients who undergo labiaplasty before adulthood, longitudinal studies with follow-up until early adulthood or beyond would provide valuable information on the durability of outcomes.

Through qualitative, in-depth interviews, it will be important to characterize adolescents’ concerns with labial aesthetics, their overall body image, and the cultural and social influences on their views. Interviews of parents, and eventually partners, could help assess family dynamics and values contributing to treatment preferences. Finally, interviews of healthcare providers

549 could determine their understanding of the practical and ethical implications of the treatments
550 they recommend.

551 Labial size and appearance have the potential to affect many domains of adolescent well-
552 being, as does labiaplasty. We have a poor understanding of variations of labial morphology in
553 adolescents and of the multifaceted patient experiences that determine whether such variations
554 (1) do not pose a significant threat to health-related well-being, (2) do pose such a threat, but this
555 threat is better or more appropriately managed by nonsurgical means, or (3) require surgery to
556 address associated problems. Until we answer these questions with thoughtful analysis of
557 empirical data and careful interpretation of qualitative findings—along with robust conceptual,
558 ethical, and legal analysis—any general treatment recommendations, particularly those
559 motivated fully or in part by aesthetic concerns, are unsupported.

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