The Hidden Cost of Likes: Appearance-Driven Digital Harm and Adolescent Wellbeing

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Introduction

Social media is not inherently harmful, but when left largely unregulated, it can operate as a systemic public health risk, particularly for adolescents. This article argues that the convergence of cosmetic-surgery advertising, algorithmic content delivery and appearance-based comparison has created a digital environment that shapes young people's wellbeing in ways existing policy has not adequately addressed.

As platforms increasingly blend entertainment with commercial health content, adolescents are exposed to promotional messages - ranging from cosmetic procedures to appearance-enhancing products - in spaces not traditionally governed as health communication. Algorithmic systems further structure these encounters by determining which images, influencers and trends young users see and how often. The result is an ecosystem in which beauty norms, peer comparison and commercial incentives are tightly interwoven, while regulatory responses remain fragmented and reactive.

This article addresses the issue through three steps: first, reviewing evidence on how appearance-focused digital environments affect adolescent wellbeing; second, assessing the strengths and weaknesses of current policy frameworks; and finally, outlining cross-sector strategies to reduce digital harms while protecting the positive social and developmental opportunities that online platforms can offer.

Evidence of Digital Harm in Adolescence

Engagement with appearance-focused social media is consistently associated with increased body dissatisfaction, anxiety, depressive symptoms and poorer mental health among adolescents. These effects persist after accounting for age, gender and baseline wellbeing, operating through a self-reinforcing cycle in which dissatisfaction drives greater exposure to beauty-related content, intensifying psychological distress (Kvardova et al., 2025, pp. 2–3). Because adolescence is marked by heightened sensitivity to peer evaluation and social validation, sustained exposure at scale shifts risk from isolated harm to cumulative population-level impact. Body dissatisfaction and anxiety are established risk factors for depression, eating disorders and self-harm - conditions requiring clinical intervention and placing growing pressure on health services (Health and Social Care Committee, 2023). As algorithmic systems ensure repeated exposure across large cohorts, these harms become predictable and preventable through structural, rather than individual, intervention.

Algorithmic Amplification of Harm

Social-media platforms are designed to maximise engagement rather than protect users, meaning algorithms systematically amplify idealised imagery, cosmetic-surgery promotions and influencer advertising. These processes are structural and commercially driven, not neutral, and UK parliamentary debate notes that algorithms "lure" children into compulsive engagement (UK Parliament, 2025, p.4). Algorithmic feeds shift appearance-focused content from selective consumption (e.g. buying a magazine) to unavoidable exposure. Recommendation systems exploit reward pathways and reinforce repeated use, particularly among adolescents with developing self-regulation, contributing to impaired emotional regulation (De et al., 2025). Adolescents experiencing body dissatisfaction or anxiety are more likely to engage with validation-driven content, which algorithms then amplify, reinforcing cycles of comparison and exposure. Repeated algorithm-driven stimulation is also associated with attention dysregulation and impulsivity, with implications for learning and development (Masri-Zada et al., 2025). At a population level, this transition from occasional to persistent exposure constitutes a systemic public health risk.

A New Comparison Culture

Where comparison once centred on distant celebrities, adolescents now increasingly compare themselves to peers and influencers whose images are edited, filtered and seemingly attainable. Prospective studies show that exposure to appearance-focused content predicts later declines in body satisfaction and self-esteem through social comparison and internalised appearance ideals (Jarman et al., 2021; 2024). Filters and editing tools increase body-dysmorphic concerns and interest in cosmetic procedures, blurring the boundary between "ordinary" and idealised beauty. Increasingly realistic and less detectable image manipulation further intensifies these effects by obscuring artificial standards. Advances in generative AI, now embedded in mainstream platforms, lower barriers to producing hyper-realistic, peer-like images at scale, amplifying existing vulnerabilities; such imagery has been shown to worsen adolescent body image by presenting physically unattainable yet seemingly authentic appearances (Nagata et al., 2025).

Normalisation of Cosmetic Interventions

Social media increasingly normalises cosmetic interventions by presenting invasive procedures - such as dermal fillers and rhinoplasty - as routine, low-risk and easily accessible, often without clear medical warnings. Influencer marketing also promotes unregulated health products, including detox teas and supplements, frequently without full ingredient disclosure, evidence of efficacy or explanation of side effects. These endorsements are typically delivered by influencers without medical training to

large and unknown audiences. While not always explicitly targeted at minors, such promotions disproportionately influence adolescents due to developmental vulnerability and platform design. Exposure to idealised visual content is associated with increased body dissatisfaction and interest in cosmetic interventions (Mironica et al., 2024), reflecting tactics historically used by harmful industries such as tobacco and alcohol.

Regulated Digital Spaces

Despite these risks, well-designed digital environments can support adolescent wellbeing by fostering social connection, reducing loneliness and providing affirming spaces for marginalised groups. Benefits are strongest when engagement promotes emotional regulation and positive interaction (McAlister et al., 2024), underscoring the need for regulation that preserves digital benefits while minimising preventable harms.

Public Health and Systems Responsibility

Social media is not inherently harmful, but without effective regulation, its design can generate systemic public health risks. Framing the issue as a public health concern shifts responsibility from individuals to systems, recognising that young users cannot reasonably self-regulate against profit-driven algorithms. WHO (2025) highlights digital wellbeing as a public health priority, urging governments to establish accountability frameworks to protect adolescent mental health. This challenge is not amenable to simple interventions; it represents a "wicked problem"- complex, evolving and shaped by conflicting interests among platforms, advertisers and regulators, as well as wider forces such as consumer culture and digital capitalism (Rittel & Webber, 1973). Addressing these harms, therefore, requires coordinated action targeting both individual behaviour and the structural conditions through which algorithmic and commercial pressures affect young people's wellbeing.

Current UK Policy and Regulatory Gaps

Online Safety Act: Protections and Limits

The UK's Online Safety Act (2023) represents a significant step towards addressing digital harms among children, yet it leaves major regulatory gaps in relation to appearance-based content,

cosmetic surgery advertising and influencer-driven comparison pressures. The Act requires platforms to undertake "children's access assessments" to determine whether they are "likely to be accessed by children," triggering duties including risk assessments, age assurance and algorithmic adjustments to reduce harmful content (Ofcom, 2025). Under Ofcom's Protection of Children Codes, platforms must complete children's risk assessments and implement 'highly effective' age-verification measures, such as facial-age estimation or secure digital ID checks, by mid-2025 (Ofcom, 2025). In principle, these measures are promising because they aim to reduce adolescents' exposure to harmful social media content at scale.

However, full enforcement is not scheduled until 2026, leaving children exposed to potentially harmful content during the interim. For example, X (formerly Twitter) has introduced a multi-step age-assurance system, including selfie-based AI age estimation and government ID verification. Yet the legal criterion of "services likely to be accessed by children" remains ambiguous, as most platforms are used by both adults and minors, and age-verification mechanisms are easily bypassed, particularly where children use shared or adult accounts. These limitations demonstrate that exposure to appearance-focused and commercialised content is shaped less by individual choice than by platform design and commercial incentives.

Structural and Enforcement Gaps

The Act focuses primarily on illegal or unequivocally harmful content and does not explicitly cover cosmetic-procedure advertising, influencer promotion of medical interventions or algorithmically amplified appearance-based posts, despite evidence linking such material to body dissatisfaction, anxiety and disordered eating. Enforcement depends on how platforms interpret what constitutes "proportionate" action, resulting in inconsistent standards and leaving key systems - such as content recommendations, targeted advertising and ranking algorithms - largely unchanged. This gap is compounded by unintended consequences, including high compliance costs for smaller platforms and privacy risks associated with age-verification under UK data-protection laws. Conflicting interests further complicate regulation: government regulators prioritise child protection, platforms seek to maintain engagement and advertising revenue, and civil liberties advocates raise concerns about overreach and censorship. Together, these tensions make effective and coherent regulation difficult, limiting the Act's ability to address the systemic drivers of appearance-related harm.

Advertising Oversight and International Comparisons

Complementary measures from the Advertising Standards Authority (ASA) and Committee of Advertising Practice (CAP) seek to mitigate appearance-related harms. CAP Code Section 12.25

prohibits cosmetic-procedure promotions in media where more than 25% of the audience is under 18 and restricts advertising directed at under-18s (ASA/CAP, 2021). However, platforms and advertisers often lack accurate data on users' ages, rendering this threshold insufficiently protective. UK law also requires paid influencer promotions to be clearly labelled as advertising, improving transparency (CMA, 2023; ASA, 2025). Enforcement, however, remains largely reactive. For example, in 2025 the ASA banned Brazilian Butt Lift (BBL) advertisements from six UK cosmetic providers for promoting risky procedures with unrealistic body imagery and inadequate health warnings (The Guardian, 2025). Notably, there is no legal requirement to label heavily edited or AI-altered images, allowing idealised and filtered imagery to circulate unchecked and contribute to peer comparison and body dissatisfaction. Overall, ASA and CAP interventions function as reactive safeguards, rather than proactive mechanisms addressing systemic appearance-related risks.

International comparisons further expose the limitations of the UK's approach. Under the EU Digital Services Act (DSA), platforms are prohibited from serving profiling-based advertisements to minors and must maintain transparency regarding ad targeting and financing (European Commission, 2024). Australia's Online Safety Amendment (Social Media Minimum Age) Act 2024 requires platforms to take proactive "reasonable steps" to prevent under-16s from accessing accounts, backed by substantial civil penalties for non-compliance (eSafety Commissioner, 2025). These frameworks offer more systemic protections by regulating algorithmic amplification and access controls directly. By contrast, the UK relies on ad-specific codes, self-regulation and delayed age-verification, leaving structural exposure largely unaddressed and underscoring a persistent policy gap.

This gap is reinforced by recent reporting from the Molly Rose Foundation, supported by 24 charities, which shows that even as Online Safety Act measures are phased in, platform algorithms continue to recommend distressing and high-risk content at industrial scale. This includes commercial appearance-focused material actively targeting young users, reflecting the absence of sufficiently strong safeguards on algorithmic design and risk assessments (Molly Rose Foundation, 2025). As a result, a critical interim protection gap persists until full implementation of the Act in 2026. Even well-intentioned legislation is therefore constrained when digital safety is treated primarily as a technical fix rather than a structurally embedded governance challenge, underscoring the need for proactive and systemic regulatory strategies.

Policy Recommendations

To mitigate appearance-driven digital harms among adolescents, a multi-layered regulatory approach is required. The following recommendations target both structural drivers of exposure and individual protective factors.

1. Expand the Definition of Harmful Content

The Online Safety Act should explicitly classify cosmetic-procedure promotions, paid influencer endorsements of supplements or health products and other appearance-focused marketing as harmful content. This would ensure that platforms' duty-of-care obligations extend to these materials. Such reform directly targets structural exposure drivers and creates clearer legal grounds for enforcement. However, its effectiveness would depend on platform compliance and may raise debates regarding freedom of expression.

Complementing content regulation, only licensed medical professionals should be permitted to provide or promote cosmetic or health-related advice online. This measure would reduce misinformation and protect minors from unsafe recommendations. It would, however, require robust verification systems and may face resistance from influencers or companies whose business models rely on unregulated promotion.

2. Regulate Algorithmic Amplification and Exposure

To address algorithmic amplification, platforms should be required to limit recommendation systems targeting minors and implement age-verification mechanisms - such as secure digital IDs or facial-age estimation - to gate harmful content. Together, these measures act on systemic drivers of exposure rather than individual behaviour, offering strong potential to reduce repeated encounters with appearance-focused content.

Limitations include technical complexity, privacy concerns and the risk of circumvention by motivated users. Advertising caps by age group, restricting the frequency and volume of paid promotions under-18s can see, could further reduce cumulative exposure and reinforce algorithmic regulation. Monitoring compliance may be challenging, particularly for platforms operating across multiple jurisdictions.

3. Improve Transparency and Media Literacy

Transparency measures, including mandatory labelling of AI or Photoshop-altered images and clear disclosure of paid influencer content, can help adolescents critically interpret what they encounter online. While these interventions support media literacy and informed engagement, enforcement would rely heavily on platforms and may not fully prevent exposure to harmful imagery.

Educational interventions delivered through schools - focusing on online safety, body image resilience, AI literacy and the risks associated with cosmetic procedures - can strengthen individual

protective factors. Their value lies in fostering long-term resilience, though they cannot eliminate exposure and depend on consistent curriculum adoption and teacher training.

4. Strengthen Supportive and Technical Safeguards

Mental health support, including helplines and online peer communities addressing body image and appearance-related distress, provides essential reactive support. Outcomes, however, depend on sustained funding and accessibility. Technical measures, such as automatic sign-outs and restrictions on saved passwords, can reduce access via shared accounts and reinforce age-assurance policies, though they may inconvenience users and be partially circumvented.

5. Apply Public Health and Fiscal Measures

Fiscal measures, such as modest taxes on cosmetic-industry advertising or influencer promotions, could both disincentivise harmful marketing practices and fund youth mental health programmes. Political feasibility and risks of circumvention remain key challenges. More broadly, public health approaches used in regulated industries such as tobacco or alcohol could be adapted to digital harms. These include warning labels, advertising restrictions, taxation and public education campaigns. Such measures address the persuasive, normalising and peer-pressure dynamics of appearance-focused content and have strong potential for systemic impact when coordinated with algorithmic and content regulation.

As a more restrictive option, access limits for under-16s, similar to Australia's social media minimum-age policy, could sharply reduce exposure to high-risk content. However, such measures would significantly limit autonomy and require substantial enforcement capacity and political support.

Integrated Policy Response

Taken together, these interventions illustrate a layered and adaptive approach to reducing systemic harms. While individual laws may offer technical fixes, the evidence indicates that digital safety must be treated as a complex structural challenge. Effective policy therefore requires balancing protection with autonomy to achieve meaningful long-term impact.

Conclusion

Cosmetic-surgery advertising, influencer marketing, algorithmic amplification and appearance-focused social media content together create a digital environment that can profoundly affect adolescent wellbeing. Exposure to idealised imagery and promotional content fosters body dissatisfaction and anxiety, while normalising procedures that adolescents are ill-equipped to evaluate safely. Algorithms and peer comparison intensify these effects, reinforcing unrealistic standards and cumulative digital harm.

Current UK policies offer some protection but remain fragmented and largely reactive. Age-verification measures are delayed, paid promotions are inconsistently regulated, and heavily edited images continue to circulate unchecked. Compared with international approaches in the EU and Australia, UK regulation falls short in addressing the systemic drivers of harm, leaving adolescents vulnerable within a commercialised, algorithmically curated ecosystem.

Addressing these harms requires multi-layered strategies that expand what counts as harmful content, regulate algorithmic amplification, improve transparency, and strengthen education and mental health support. Because digital wellbeing is shaped by complex and rapidly evolving forces, no single policy intervention will suffice. Only coordinated, adaptable and public-health-oriented regulation can meaningfully curb appearance-driven harms while supporting positive online experiences for adolescents.

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