

REVIEW ARTICLE OPEN ACCESS

# Cosmeceuticals in the Pediatric Population Part II: Ethical Dilemmas and Patient Talking Points

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## ABSTRACT

The rise in the use of cosmeceutical products amongst the pediatric population raises several ethical dilemmas, as well as new situations and questions that dermatologists must navigate with patients. Ethical concerns discussed in this review include the marketing of cosmeceutical products directly to children, the influence of social media and trends related to skincare, the use of anti-aging ingredients by children (who have not yet manifested any aging signs), and the misuse of cosmeceutical products to lighten one's complexion in childhood. We also discuss several related patient talking points for dermatologists to employ with young patients interested in cosmeceutical products.

## 1 | Introduction

The notable rise in interest and consumption of cosmeceutical products within the pediatric population has presented a challenge for dermatologists, who must balance evidence-based medical recommendations with the newest trending skincare regimens their patients may be eager to adopt. Dermatologists are often asked to advise patients on the risks and potential complications of a large and growing number of products and ingredients that frequently haven't been studied or tested in children or teens. In Part II of this review, we move from a general review of ingredients, efficacy, and safety in cosmeceuticals marketed to and used by the pediatric population to a focus on common dilemmas and ethical concerns surrounding this topic. We also highlight patient talking points regarding specific products and ingredients in cosmeceuticals being marketed to and used by children and adolescents.

## 2 | Dilemmas and Ethical Considerations

### 2.1 | Marketing of Skincare Products Directly to Young Consumers

The interest in skincare products amongst members of Generation-Z (born 1995–2009) and Generation-Alpha (born 2010–2024) [1] continues to increase [2]. These groups are a key target of marketing by cosmeceutical companies, perhaps in response to or as the driving force behind this engagement. The ethics of marketing these products to children who have limited need for them, how these products contribute to unrealistic beauty standards, and the financial strain that the pressure to purchase these products places on children and their parents should all be examined. In the United States, advertising to children is regulated by the Federal Trade Commission and the Better Business Bureau to prevent harmful products such as tobacco and alcohol from being advertised to children,

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as well as to make sure that advertisements are non-deceptive and age-appropriate [3, 4]. It is difficult to know how these regulations are applied and enforced when it comes to skincare products and cosmeceuticals, which are actively marketed to children. Skincare lines geared towards children often have bright colors, bold fonts, and catchy names that appeal to younger consumers. Recently, a skincare line was released in conjunction with a popular Disney/Pixar movie, further driving the market for cosmeceuticals to an increasingly younger age group.

Some of the most popular cosmeceutical brands are owned or advertised by prominent celebrities. A study of marketing of natural skincare products found that consumers were significantly more likely to buy a product and willing to pay more if it was endorsed by a celebrity [5]. Prior research on celebrity influence on children specifically has found that children much prefer products that have been endorsed by a celebrity, and that they are likely to believe that the celebrity advertising the product is an expert [6]. This makes children particularly susceptible to the claims of celebrity-endorsed brands, as they may have an increased level of trust for a celebrity's recommendation of cosmeceutical products.

In addition to children's susceptibility to celebrity marketing, there are other factors that highlight the ethical concerns of marketing cosmeceutical products to children. Extensive prior research has shown that children have increased difficulty distinguishing advertisements from entertainment [7–9]. They are generally less skeptical than adults, making them more likely to be unaware of subtle persuasive techniques used in advertisements and the true intent of an advertisement [7–10]. While this has been demonstrated primarily in the context of television advertisements, it is likely that this also holds true in the context of social media, where product advertisements often appear in the same format as social media posts and intermixed with content from their favorite influencers. Finally, children's identities and social interactions have been shown to be uniquely intertwined with commodities, making their desires to buy the newest product difficult to resist [7]. These factors make children an even more attractive target market segment for cosmeceutical brands, who capitalize on children's still-developing capacity to process advertisements and their fascination with these products.

## 2.2 | Social Media's Influence

Cosmeceutical products are extensively advertised and discussed on social media platforms, underlying their popularity in the internet-savvy pediatric population. A survey of 1044 female consumers in the U.S. found that 83% of Gen-Z females have bought a cosmetic or cosmeceutical product after seeing it promoted on TikTok, as compared to approximately 60% of the general female population [11]. Beyond just the marketing of these products on social media, comparison of one's skin to other users' skin on social media also drives demand for cosmeceutical products. The rampant use of blurring or “perfecting” filters that give users the appearance of flawless, glowing skin only adds to the unattainability of skin seen on social media. Prior qualitative research of adolescent social media

use has found that teens who use social media often negatively compare themselves to people that they see on social media (whose photos may be heavily edited) and also feel significant pressure to achieve “likes” on their photos [12]. This may help explain why a study of 257 college students found that 63.6% of participants had edited a photograph to remove a skin lesion in an Instagram post [13]. Furthermore, another study with 220 college students found that a 50% reduction in social media use was found to significantly improve body image and satisfaction with appearance, suggesting that social media can harm young people's self-confidence [14]. By marketing to children via social media, cosmeceutical companies take advantage of the low self-esteem experienced by many adolescents on social media and offer them products which young consumers may be likely to purchase in the hopes of improving their physical appearance.

International cosmeceutical lines, especially Korean beauty or “K-beauty” products, have overtaken the worldwide skincare industry over the past several years, in large part due to social media popularity [15]. These products are set apart from other products in the U.S. cosmeceutical market because of an emphasis on naturally-derived ingredients, as well as an emphasis on a “dewy”, hydrated complexion [15]. Ingredients found in K-beauty products that excite particular interest amongst American teens include snail mucin, salmon seminal fluid, bee venom, and starfish powder [15]. Products that include these ingredients frequently go viral on social media with influencers emphasizing the unusual ingredient lists. Most often, the mechanistic, efficacy and safety claims of these ingredients are based on in vitro studies [16]. Despite the lack of clinical evidence for the safety and efficacy of many of these ingredients, products that contain unconventional ingredients are widely sought after by American youth who may assume that the innovative ingredients make them superior.

Children and teens often turn to social media for skincare advice, which is particularly concerning given the level of misinformation found in content discussing skincare [2]. A study examining the most popular YouTube videos related to acne treatment found that many of these videos had extensive misinformation, sometimes suggesting acne treatments with no evidence such as intensive diets or high-dose supplements [17]. This study also found videos from lay people were rated as more engaging than those from medical professionals, despite these videos having significantly lower accuracy scores [17]. In another study comparing the social media profiles of the most popular “skinfluencers on Instagram,” those with less formal medical training (i.e., aestheticians) tended to post much more frequently than the licensed dermatologists and had a higher rate of sponsored posts [18].

The information on social media that comes from non-verifiable sources may not only be inaccurate, but could potentially lead to skin damage. For example, a popular social media trend known as “glass skin” involves applying numerous exfoliating products and serums over the top of one another to achieve a smooth, shiny surface without the appearance of pores or texture, an impossible goal [19, 20]. Using many products in conjunction with each other in this manner can lead to occlusion, irritation, and even damage to the skin barrier [19]. Being aware of current

**TABLE 1** | Patient talking points.

Topic	Patient talking points
Addressing anti-aging perceptions	<ul style="list-style-type: none"> <li>• The increased interest in cosmeceuticals and “anti-aging” amongst this population provides an opportunity to educate patients that consistent sunscreen use is the most effective and evidence-based approach to achieving goals of healthy skin and preventing the skin changes associated with aging [20, 25].</li> <li>• Educating young patients about skin cancer is critical given that frequent, high doses of UV radiation before the age of 15 years is the major risk factor of melanoma [26]. Children and adolescents spend more time engaged in outdoor sports and other activities than most adults, contributing to their risk for future photo-induced skin damage [25].             <ul style="list-style-type: none"> <li>• Sunscreen use is important for all patients, regardless of skin tone and propensity for sunburns.</li> </ul> </li> <li>• In recent years, false information about the alleged toxicity of sunscreen has become more widespread. It is important to address these concerns and help patients identify what sun protection products are best for them in order to encourage consistent usage. For a patient concerned about chemicals in sunscreen, mineral sunscreens may be the best option, as these are recognized as “generally safe and effective” by the FDA.             <ul style="list-style-type: none"> <li>• Zinc oxide and titanium dioxide (mineral sunscreen active ingredients) provide the most effective coverage against UVA and UVB radiation [27]. However, their white cast may be aesthetically unappealing, especially for patients with skin of color [27]. Tinted mineral sunscreens help eliminate the white cast and also confer protection from visible light, which has been shown to contribute to hyperpigmentation and photoaging [27].</li> <li>• Other concerns of young patients regarding sunscreen may include an unappealing texture, unpleasant smell, or the potential to cause acne. Inquiring about these potential concerns can improve sunscreen recommendations and facilitate consistent use.</li> </ul> </li> </ul>
Caution against products with little to no evidence	<ul style="list-style-type: none"> <li>• Many popular cosmeceutical products have little to no clinical evidence of their efficacy or safety, despite their widespread use and popularity within the pediatric population.</li> <li>• When encountering a young patient who is using cosmeceuticals with ingredients lacking substantial evidence, a non-judgmental discussion of the risks and benefits of such products is important, such as the risks of irritation leading to discoloration, etc.</li> </ul>
Misuse of skin-lightening products	<ul style="list-style-type: none"> <li>• For a young patient who is thought to be engaging in skin-bleaching practices, it is important to approach a conversation about this issue with cultural humility.             <ul style="list-style-type: none"> <li>• The role of the dermatologist is to understand their patient’s motivation behind the use of these products, the source of the products, and the impact that their use has on the patient’s well-being in order to provide an open forum for conversation and guidance [28].                 <ul style="list-style-type: none"> <li>• It is important to explore the source and specific ingredients present in any skin-lightening products used in order to safeguard the patient against potentially harmful ingredients.</li> </ul> </li> </ul> </li> </ul>
Addressing adverse effects from cosmeceutical use	<ul style="list-style-type: none"> <li>• When a young patient presents with skin irritation, it is important to get a thorough understanding of all topical products that they are using. Approaching this conversation in an open and non-judgmental manner may encourage patients, particularly adolescents, to be more forthcoming.</li> <li>• Advice regarding which products and practices to stop or adjust requires a delicate culturally sensitive approach to minimize the risk of antagonizing or alienating the patient and thus optimizing the chance of achieving adherence to a treatment plan [20].</li> <li>• Patients may have seen dramatic “before” and “after” pictures related to a product on social media and be convinced of a product’s efficacy; this may make it more difficult to convince them of the potential harms that the product may be contributing to or causing. It can be helpful to remind patients that most of the content on social media is unregulated and that monetary incentives are often attached to influencers’ posts.             <ul style="list-style-type: none"> <li>• Suggesting alternative skin care products that are safe and non-irritating may help increase the patient’s trust and guide them away from unproven and potentially harmful agents.</li> </ul> </li> </ul>

(Continues)

TABLE 1 | (Continued)

Topic	Patient talking points
Awareness of financial impact	<ul style="list-style-type: none"> <li>The financial toll of continuously purchasing trendy skincare products can be significant, and many patients use skincare products only for a short time before moving onto the next trending product.</li> <li>Young patients and their parents may be open to education that can help them avoid spending money on products with questionable safety and efficacy [2].</li> </ul>
Providing recommendations	<ul style="list-style-type: none"> <li>Some young patients may enjoy having a skincare routine and would appreciate being directed towards products that have proven benefits and an established safety profile. This may strengthen the doctor-patient relationship and increase the patient's level of trust.</li> </ul>

skincare trends or misinformation on social media can help dermatologists ask their patients insightful questions and know what risks to look out for.

### 2.3 | Anti-Aging Products and the Pediatric Population

Society places great value on maintaining a youthful, attractive appearance. Cosmeceutical companies use this to their advantage and advertise in ways that pathologize the natural aging process to drive demand for anti-aging products [21]. The pediatric population is not immune from the pressure to remain young, despite being far from displaying signs of aging. Skincare companies play into the societal fear of aging by marketing anti-aging products to children even though they are not able to see real benefits from products that target age-related changes that are as yet non-existent. This ethically questionable marketing practice demonizes the natural aging process, promotes excessive spending on skincare, and encourages the use of ingredients without clear benefits that may cause harm to pediatric skin.

### 2.4 | Skin Bleaching and Children

Skin bleaching is the practice of using a product that can reduce melanin in the skin with the goal of lightening one's overall complexion. Skin bleaching stems from the problematic idea of colorism, or the belief that lighter complexions are more attractive. As a result, individuals with skin of color are more likely to pursue skin bleaching [22, 23]. This effort may involve the misuse of cosmeceuticals intended to treat hyperpigmentation or melasma, or the purchase of products specifically for the purpose of complexion lightening, often purchased online from unregulated sources. Some of these products contain ingredients such as mercury, hydroquinone, and corticosteroids; these ingredients carry risks of toxicity, exogenous ochronosis, contact dermatitis, skin thinning or ulceration, and steroid-induced acne [22, 23]. While skin bleaching practices are less common in the U.S. than in Asia, Africa, and the Middle East, it is still a concern [24]. However, there are little to no data on the prevalence of skin bleaching amongst adolescents in the United States. Multiple studies have found that skin bleaching amongst young people in other countries is correlated with mental health problems and poor body image [24].

## 3 | Patient Talking Points

The patient talking points discussed below (Table 1) correspond with the ethical issues previously examined, providing suggestions of how to discuss these issues with pediatric patients.

## 4 | Conclusion

Perhaps more so than any generation before them, children today are under immense pressure to maintain a polished, flawless aesthetic. Their appearance is shared constantly online for others to see and comparisons to others are inevitable. The explosion in use of cosmeceutical products amongst this population is largely fueled by social media and represents a daunting challenge for dermatologists who must be sources of unbiased knowledge and advice for parents and children and help them navigate vast amounts of misinformation surrounding this topic.

### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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