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Review Paper

Review Article of Eye Cosmetic Product

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ABSTRACT

In this scholarly report, the utilization of ocular cosmetic products and procedures is examined, along with the implications of such practices as a lifestyle challenge that may exacerbate or facilitate the onset of ocular surface and adnexal diseases. A multitude of facets concerning eye cosmetics are explored, encompassing their historical development and market valuation, psychological and sociocultural ramifications, potential complications linked to cosmetic constituents, products, and procedures, as well as the regulatory frameworks governing the application of eye cosmetics. Furthermore, a systematic review that rigorously evaluates randomized controlled trial evidence regarding the ocular implications of eyelash enhancement products is presented. The conclusions drawn from this systematic review underscore the existing evidence deficiencies and suggest prospective avenues for future research to concentrate on ocular surface outcomes relevant to eyelash enhancement products. This report discusses the use of eye cosmetics and procedures, highlighting how they may pose a lifestyle challenge that could worsen or encourage the onset of ocular surface and adnexal diseases. Various facets of eye cosmetics are explored, including their historical context and market significance, psychological and social effects, potential issues related to cosmetic components, products, and procedures, as well as regulations governing the usage of eye cosmetics. Furthermore, the report incorporates a systematic review that evaluates randomized controlled trial data regarding the ocular impacts of eyelash growth products. The results of this systematic review emphasize existing evidence gaps and suggest future research should concentrate on ocular surface effects associated with eyelash growth production.

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INTRODUCTION

Makeup safety, expiration dates, and correct application methods (1,2). The human eye is the sensitive organ which gives us the sense of sight. Eyelid are the upper covering of the eye which gives the protection to the eye. Eyelashes are the protective part which provide protection from foreign particles. Eye cosmetics are mostly used for enhancing eye appearance. It includes the various types of products i.e. short coverage and high coverage while short coverage products remove easily within few hours [1].eye makeup comes from the ancient time for making the eye expressive and seductive. Moreover, eye products are using for altering face expressions [2].Eye cosmetics have been used since previous times to enhance the eye appearance 1,2. In these days, eye makeup is used worldwide 3,4. Instead of this, eye cosmetics are used for cultural, and medicinal purposes,1,2. Eye cosmetics are also commonly used to recognize eye effectiveness3-5. Most of the women used eye makeup to boost their self confidence4,6. Market research from the United States and United Kingdom suggests that a huge percentage of women use eye makeup and facial makeup4,6 with mascara, eyeliner, and eye 4,6,7. Eyelash curling, dyeing, tinting, and perming; botulinum toxin, filler, and platelet-rich plasma injections; chemical peels; conjunctival tattooing; eyelid piercing and tattooing; microdermabrasion; micro needling; and skin resurfacing and tightening are just a few of the many cosmetic procedures available for the eye. Adverse ocular events may also be linked to several of these procedures [4]. Dry eye, a complex condition, is marked by symptoms of dryness and irritation of the eye surface resulting from changes in the quality or amount of the tear film. It can occur at any age; however, DED is especially common among older adults and women. It is estimated that 5–50% of the population is affected by this disease

Citation14, making it one of the most prevalent eye conditions. DED places a significant quality-of-life strain on those affected, and its prevalence leads to substantial economic and healthcare resource utilizationCitation15,Citation16. Eye makeup consists of numerous ingredients, including preservatives, vehicles (agents), antioxidants, humectants, fragrances, UV absorbers, emollients, emulsifiers, acrylates, and pigments (12, 13). Certain products might not be appropriate for use near the eyes and could cause allergic responses or irritation (12, 14). Similarly, inadequate handling and storage can lead to microbial contamination, and the sharing of products further promotes the spread of infections (7, 14). Moreover, the likelihood of injury rises with the implementation of harsh methods for applying and removing products; for example, using fingers or cotton swabs to scrub eyelashes, which may damage the delicate ocular surface (15). Expanding on the earlier details, the likelihood of negative reactions escalates with the extended use of contact eye makeup products, and these risks are heightened by consumers' limited awareness about ingredient

KEY INGREDIENTS OF EYE COSMETICS

Mascara

This product enhances the eyelashes by darkening, and adding volume, resulting in a more striking and alluring appearance that makes the eyes appear bigger. Mascara comes in various types, such as cakes (or blocks), creams, gels, and thin liquids. At present, liquid mascara is the leading contemporary variety. Mascara is expected to dominate market shares, with eyeliners and eyeshadows following closely behind [7]

Eyeliners

Eyeliners are placed next to or directly on the eyelid edge at the juncture of the mucous



membrane and skin. These can appear in three varieties: cake, liquid, and pencil, with the latter two being the most common forms[5]. To ensure stability, viscosity-controlling agents are incorporated into liquid eyeliners, while pencil eyeliners are made with a mixture of waxes, pigments, minerals, or vegetable oils. Liquid eyeliners are susceptible to microbial contamination due to their high water content, which is why preservatives are added to their formulation[6]

Ocular migration of cosmetics for the eyes

There have been numerous reports of externally applied eye cosmetics migrating onto the ocular surface [6,7,11,12,14]. During normal slit lamp examinations, there have been several anecdotal reports of tear film contamination with eye cosmetic items [6,12]. Tear film contamination can be caused by inadequate application skills, direct accidental ocular instillation, eye rubbing, and passive and unintentional migration of periorbital cosmetic items across the eyelid margin, according to prospective research [6,11]. Additionally, some of the documented side effects of wearing eye cosmetics, such as posterior blepharitis, ocular surface irritation, tear film instability, conjunctival pigmentation, corneal epithelium inflammation, and keratitis, are believed to be caused by these phenomena [2,7,16-19].

Problems with suggested ingredients

The different types available in the market have differing levels of charcoal (from 70 to 160 mg/unit). Activated charcoal is made from substances that inherently possess high levels of carbon, including bamboo, coconut, or wood, which are heated to elevated temperatures and subsequently ground into a powder. The process of producing charcoal does not eliminate the existence of toxic substances, which might

negatively impact human health. As a result, certain recipes may include cadmium, antimony, tellurium, mercury, thallium, or lead at levels that vary from several ng/g to tens of thousands of ng/g charcoal, depending on the specific element [14-16]. Exposure to heavy metals seems to be a risk factor for several eye disorders like glaucoma making it crucial to strongly recommend avoiding charcoal-based products since their quality cannot be verified prior to mixing with the excipient [17]. Certain recipes do not indicate 'activated' and simply refer to 'charcoal'. Some recipes suggest substitutes for activated charcoal, like almonds that should be charred with a candle or a gas lighter, and then crushed using a pestle and mortar. Recognizing that this manual grinding method yields powders with a particle size ranging from 250 to 500 µm after 80–100 rotations [18] it is evident that the particle size achieved in the recipe will not align with an average of 10 µm. A recipe recommends utilizing surma, referred to as kohl in India and Pakistan, made from lead sulphide that could lead to lead poisoning [19-21].

Risk elements

Wearing contact lenses is the primary risk factor for AK, which must be taken into account in any suspected keratitis cases among contact lens users. Patients suffering from AK may likely endure discomfort linked to light sensitivity, ring-shaped stromal infiltration, epithelial defects, radial perineuritis, and swelling of the eyelids [86]. The clinical presentation differs across various stages of the illness, with the typical ring-shaped infiltration appearing in more advanced stages [87]. Diagnosing AK necessitates a confocal scan of the cornea or specific culture and staining methods. Postponed diagnosis leads to greater invasion, reduced treatment response, and worse visual results [86]. Typically, individual amoebae enter the lens case via tap water or air, rapidly multiply to high levels in the lens if the case isn't



cleaned properly and consistently, and then adhere to the lens, infecting the eye[88]

Methodology

The 21st century has heralded the emergence of a robust cosmetics industry[51,52]. For instance, market analysis conducted in the United Kingdom revealed that 80% of adult females utilised facial and ocular cosmetics in the preceding year, with this figure escalating to nearly 90% among women under the age of 55. The most frequently utilised products included mascara, eyeliner, and eyeshadow [53].

Presently, the realms of glamour and social media significantly shape the methodologies by which individuals apply makeup. This phenomenon is not confined solely to women, as men are also observed adopting contemporary aesthetic trends. Celebrities and influential figures have pioneered a multitude of innovative styles, including frosted and smoky eye makeup, vibrant eyeliner and eyeshadow, as well as glossy or glittering eyelids adorned with pearlescent pigments. The application of mascaras, eyebrow pencils, and eyebrow brushes for the management of unruly brows, along with eyelash primers, eye makeup removers, eyelash conditioners, eyelash perming (lash-lift) techniques, and various solutions (for instance, hydrogen peroxide and thioglycolic acid [51].

RESULTS

The In Vitro Irritancy Scores and histopathological evaluation demonstrated that formulations containing only Ethanol, Glycolic Acid, or Salicylic Acid individually exhibited, at most, mild ocular irritation potential. The formulations that included both Ethanol and Glycolic Acid showed a mild ocular irritation potential, whereas those combining Ethanol and Salicylic Acid displayed a moderate ocular irritation potential. An experimental formulation comprising both

Glycolic Acid and Salicylic Acid resulted in severe ocular irritation potential, which was further intensified by the inclusion of Ethanol. Our findings suggest a potential synergistic effect on eye irritation potential among Ethanol, Glycolic Acid, and Salicylic Acid in certain experimental cosmetic formulations.

DISCUSSION

Eye cream is often a safe and beneficial part of a daily skincare regimen, but because of the natural composition of the skin around the eyes, it can easily become irritated by different topical ingredients. A negative consequence of applying topical products, like eye cream, to the periorbital area is contact dermatitis [64](#). Certain people are genetically more prone to stronger and more frequent responses to topical formulations, informally known as having sensitive skin. The dosage of the reviewed products is often constrained by this reaction[65,66](#)

CONCLUSION

The most common cosmetic improvements today, such as eyelash extensions, eyelid tattoos, and eyelash tinting, are quickly becoming popular around the globe. The increased demand for these procedures necessitates adequate education and training regarding the related risks and complications. A review of literature regarding these procedures indicates a clear increase in complications associated with toxic substances, improper application, and a background of refractive surgery prior to cosmetic improvement, leading to a higher occurrence of complications. Healthcare providers need to recognize the possible complications linked to these procedures to inform their patients about how these interventions can affect their overall eye health and to establish guidelines that could promote success in refractive correction.



REFERENCES

1. MurubeJOcular cosmetics in ancient timesOcul Surf20131112723321352
View([Open in a new window](#))[PubMed](#) (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
2. CoroneoMTRosenbergMLCheungLMOcular effects of cosmetic products and proceduresOcul Surf2006429410216681080 o [View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
3. MurubeJOcular cosmetics in modern timesOcul Surf2013112606423583041 o [View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
4. NgAEvansKNorthRPurslowCEye cosmetic usage and associated ocular comfortOphthalmic Physiol Opt201232650150723057565 o [View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
5. MulhernRFieldmanGHusseyTLévêqueJLPin eauPDo cosmetics enhance female Caucasian facial attractiveness?Int J Cosmet Sci200325419920518494902
[View](#)
(Open in a new window)PubMed([Open in a new window](#))[Google Scholar](#)
6. gAEvansKNorthRVJonesLPurslowCImpact of eye cosmetics on the eye, adnexa, and ocular surfaceEye Contact Lens201642421122026398576 o [View](#)
([Open in a new window](#))[PubMed](#) ([Open in a new window](#))Web of Science [®\(Open in a new window\)Google Scholar](#)
7. MalikAClaouéCTransport and interaction of cosmetic product material within the ocular surface: beauty and the beastly symptoms of toxic tearsCont Lens Anterior Eye201235624725922890123 o [View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
8. Sullivan DA, da Costa AX, Del Duca E, Doll T, Grupcheva CN, Lazreg S, et al. TFOS lifestyle: Impact of cosmetics on the ocular surface. Ocul Surf 2023;29:77–130.
[Cited Here](#)
9. Stapleton F, Alves M, Bunya VY, Jalbert I, Lekhanont K, Malet F, Na K-S, Schaumberg D, Uchino M, Vehof J. Tfos deus ii epidemiology report. Ocul Surf. 2017;15(3):334–65.
doi:<https://doi.org/10.1016/j.jtos.2017.05.003> (open in a new window).
[View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
10. Barabino S, Labetoulle M, Rolando M, Messmer EM. Understanding symptoms and quality of life in patients with dry eye syndrome. Ocul Surf. 2016;14(3):365–76.
doi:<https://doi.org/10.1016/j.jtos.2016.04.005> (open in a new window).
[View](#)
(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
11. McDonald M, Patel DA, Keith MS, Snedecor SJ. Economic and humanistic burden of dry eye disease in Europe, North America, and Asia: a systematic literature review. Ocul Surf.



2016;14(2):144–67.

doi:<https://doi.org/10.1016/j.jtos.2015.11.002>

[\(open in a new window\).](#)

[View](#)

(Open in a new window)PubMed (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)

12. Addis GT, Yimer YS, Dagnew SB, Moges TA, Assefa AN, Alemu MA, et al. Cosmetic use and related negative effects among graduate university female students in Ethiopia: a multicenter cross-sectional study. *J Public Health.* (2024) 32:237–45. doi: 10.1007/s10389022-01815-y
[Crossref Full Text](#) | [Google Scholar](#)
13. Dimri AG, Singh D, Chatterjee R, Chaudhary S, Aggarwal DML. Evaluation of microbial contamination of eye make up product: mascara. *J Biomed Pharm Res.* (2016) 5(6):95–103
[Google Scholar](#)
14. Nigam PK. Adverse reactions to cosmetics and methods of testing. *Indian J Dermatol Venereol Leprol.* (2009) 75:10. doi: 10.4103/0378-6323.45214
[PubMed Abstract](#) | [Crossref Full Text](#) | [Google Scholar](#)
15. Park GH, Nam C, Hong S, Park B, Kim H, Lee T, et al. Socioeconomic factors influencing cosmetic usage patterns. *J Expo Sci Environ Epidemiol.* (2018) 28:242–50. doi: 10.1038/jes.2017.20
[PubMed Abstract](#) | [Crossref Full Text](#) | [Google Scholar](#)
16. Coroneo MT, Rosenberg ML, Cheung LM. Ocular effects of cosmetic products and procedures. *Ocul Surf.* (2006) 4:94–102. doi: 10.1016/S1542-0124(12)70031-9
[PubMed Abstract](#) | [Crossref Full Text](#) | [Google Scholar](#)
17. Alhamazani MA, Alnabri MS, Alreshidi MN, Alsulaiman HM, Strianese D, Althaqib RN. Assessing public awareness of daily eyelid hygiene habits in Saudi Arabia: an online survey study. *Saudi J Ophthalmol.* (2021) 35:304. doi: 10.4103/sjopt.sjopt_25_20
[PubMed Abstract](#) | [Crossref Full Text](#) | [Google Scholar](#)
18. Dogra A, Minocha YC, Kaur S. Adverse reactions to cosmetics. *Indian J Dermatol Venereol Leprol.* (2003) 69:165.
[Google Scholar](#)
19. Coroneo MT, Rosenberg ML, Cheung LM. Ocular effects of cosmetic products and procedures. *Ocul Surf.* 2006;4(2):94-102. doi: 10.1016/S1542-0124(12)70031-9
[View](#) (Open in a new window)PubMed [\(Open in a new window\)Web of Science](#) [®\(Open in a new window\)Google Scholar](#)
20. Ng AE, Evans KN, North RV, Jones LP, Purslow C. Impact of eye cosmetics on the eye, adnexa, and ocular surface. *Eye Contact Lens.* 2016;42(2):112-20. doi: 10.1016/j.jclm.2016.04.002
[View](#) [\(Open in a new window\)PubMed](#) (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
21. Ali A, Clauoué C. Transport and interaction of cosmetic product material within the ocular surface: beauty and the beastly symptoms of toxic tears. *Contact Lens Anterior Eye.* 2012;35(6):247-59. doi: 10.1016/j.cla.2012.09.001
[View](#) [\(Open in a new window\)PubMed](#) [\(Open in a new window\)Web of Science](#) [®\(Open in a new window\)Google Scholar](#)
22. Goto T, Zheng X, Gibbon LO, Hashi Y. Cosmetic product migration onto the ocular surface: exacerbation of migration after eyedrop instillation. *Cornea.* 2010;29(4):400-3. doi: 10.1097/ICO.0b013e3181b68215
[\(Open in a new window\)PubMed](#) (Open in a new window)Web of Science [®\(Open in a new window\)Google Scholar](#)
23. Ng AE, Evans KN, North RV, Purslow C. Migration of cosmetic products into the tear film. *Eye Contact Lens.* 2015;41(5):304-9. doi: 10.1177/0891524015573897



- ([Open in a new window](#))PubMed (Open in a new window)Web of Science ®([Open in a new window](#))Google Scholar
24. Wang MT, MChoi SH, Jung SH, Craig JP. Effect of lipid-based dry eye supplements on the tear film in wearers of eye cosmetics. *Cont Lens Anterior Eye*. 2017;40(4):236-241. doi:10.1016/j.cla.2017.04.023. ([Open in a new window](#))PubMed ([Open in a new window](#))Web of Science ®([Open in a new window](#))Google Scholar
 25. Sanchez N, Fayne R, Burroway B. Charcoal: an ancient material with a new face. *Clin Dermatol*. 2020; **38**(2): 262–4. [PubMed](#) [Web of Science](#) [Google Scholar](#)
 26. Chen CC, Jiang SH, Sahayam AC. Determination of trace elements in medicinal activated charcoal using slurry sampling electrothermal vaporization inductively coupled plasma mass spectrometry with low vaporization temperature. *Talanta*. 2015; **131**: 585–9. [CAS](#) [PubMed](#) [Web of Science](#) [Google Scholar](#)
 27. Vennam S, Georgoulas S, Khawaja A, Chua S, Strouthidis NG, Foster PJ. Heavy metal toxicity and the aetiology of glaucoma. *Eye (Lond)*. 2020; **34**(1): 129–37. [PubMed](#) [Web of Science](#) [Google Scholar](#)
 28. akamura H, Yanagihara Y, Sekiguchi H, Ohtani M, Kariya S, Uchino K, et al. Effect of particle size on mixing degree in dispensation. *Yakugaku Zasshi*. 2004; **124**(3): 135–9. [CAS](#) [PubMed](#) [Web of Science](#) [Google Scholar](#)
 29. Ali S, Iqbal M, Yaqub M. Surma--a toxic cosmetic? *J Pak Med Assoc*. 1988; **38**(10): 281–2. [CAS](#) [PubMed](#) [Google Scholar](#)
 30. McMichael JR, Stoff BK. Surma eye cosmetic in Afghanistan: a potential source of lead toxicity in children. *Eur J Pediatr*. 2018; **177**(2): 265–8.
 31. Orecchinoi A, Baran R, Maibach H. *Cosmetic Dermatology*. London UK: Martin Dunitz; 1994. Eye make-up; pp. 143–9. [Google Scholar](#)
 32. Draeos ZD. Special considerations in eye cosmetics. *Clin Dermatol*. 2001; **19**: 424–30. doi:10.1016/s0738-081x(01)00204-8. [DOI](#) [PubMed](#) [Google Scholar](#)
 7. Ng A, Evans K, North RV, Jones L, Purslow C. Impact of eye cosmetics on the eye, adnexa, and ocular surface. *Eye Contact Lens*. 2016; **42**: 211–20. doi:10.1097/ICL.0000000000000181. [DOI](#) [PubMed](#) [Google Scholar](#)
 33. Lorenzo-Morales J, Khan NA, Walochnik J. An update on Acanthamoeba keratitis: Diagnosis, pathogenesis and treatment. *Parasite*. 2015; **22**: 10. doi:10.1051/parasite/2015010. [DOI](#) [PMC free article](#) [PubMed](#) [Google Scholar](#)
 34. Dart JK, Saw VP, Kilvington S. Acanthamoeba keratitis: Diagnosis and treatment update 2009. *Am J Ophthalmol*. 2009; **14**: 487–499. doi:10.1016/j.ajo.2009.06.009. [DOI](#) [PubMed](#) [Google Scholar](#)
 35. Radford C, Minassian D, Dart J. Acanthamoeba keratitis in England and Wales: Incidence, outcome, and risk factors. *Br J Ophthalmol*. 2002; **86**: 536–542. doi:10.1136/bjo.86.5.536. [DOI](#) [PMC free article](#) [PubMed](#) [Google Scholar](#)
 36. Misery L, Ständer S, Szepietowski J, et al. Definition of sensitive skin: An expert position paper from the special interest group on sensitive skin of the international forum for the study of itch. *Acta Derm Venereol*



- 2017;97:4–6. [\[DOI\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
37. Shriner DL, Maibach HI. Regional variation of nonimmunologic contact urticaria. Functional map of the human face. *Skin Pharmacol* 1996;9:312–21. [\[DOI\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
 38. Pratchyapruit W, Kikuchi K, Gritiyarangsana P, Aiba S, Tagami H. Functional analyses of the eyelid skin constituting the most soft and smooth area on the face: contribution of its remarkably large superficial corneocytes to effective water-holding capacity of the stratum corneum. *Skin Res Technol* 2007;13:169–75. [\[DOI\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)
 39. Lawrence M. The 2000's makeup guide 2021. <https://organicbeautyreport.com/makeup-retro/retro-makeup/the-2000s-makeup-guide/>. [Accessed 1 May 2022]. [\[Google Scholar\]](#)
 40. <https://www.mintel.com/press-centre/beauty-and-personal-care/the-eyes-have-it-eye-makeup-sales-bolster-color-cosmetics-growth-reports-mintel>. [Accessed 1 May 2022].
 41. Ng A, Evans K, North RV, Jones L, Purslow C. Impact of eye cosmetics on the eye, adnexa, and ocular surface. *Eye Contact Lens* 2016;42:211–20. [\[DOI\]](#) [\[PubMed\]](#) [\[Google Scholar\]](#)

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