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Beyond Cosmetic Desire: Behavioural and Psychological Drivers Influencing Adolescents' Maxillofacial Decision-Making Pathways

Daniel Karapetian
dkarapetian2009@gmail.com

ABSTRACT

Adolescents are vulnerable since they are in a period of brain development, identity formation, and increasing awareness of appearance, which affects how the youth evaluate perceived facial imperfections. Adolescents' decisions regarding non-essential maxillofacial and cosmetic procedures are influenced by a combination of psychological, developmental, social, and digital factors.

This paper discusses different modifiable and non-modifiable factors, such as social comparison, body dissatisfaction, self-esteem, peer validation, family and cultural expectations, and exposure to social media, and illustrates their influence on adolescents' interest in cosmetic and maxillofacial procedures. Digital platforms may strengthen these influences by constantly exposing adolescents to edited images, appearance-based content, influencers, and unrealistic beauty standards. These experiences can normalize cosmetic procedures and encourage adolescents to view normal facial differences as something that needs correction.

Moreover, the current review also considers how impulsivity, psychological vulnerability, false expectations, and minimal knowledge of long-term consequences may affect decision-making amongst teenagers. Identifying adolescents who could be more vulnerable to non-essential procedures and creating protections that promote well-informed, developmentally appropriate health decisions require an understanding of these interacting influences.

Keywords: Adolescents; Behavioural factors; Body dysmorphic disorder (BDD); Cosmetic surgery; Decision-making; Maxillofacial surgery; Psychological factors; Social media

INTRODUCTION

In the modern era of digital technology, facial appearance plays a substantial role in one's social identity (Lynch, Miller, & Thaller, 2026). Although appearance was once more about personal perception, with the rise of social media, it has transformed into something that is constantly viewed, shared, and evaluated

by others (Lynch et al., 2026; Sekar, Ramesh, Mahesh, Bhuvaneswari, & Wellness, 2026). Digital platforms, including Instagram, TikTok, and YouTube, urge users, who may be adolescents, to post photos and videos that are more often than not heavily edited with either filters or enhancement tools, leading to appearance being seen as a means of validation through interaction (Lynch et al., 2026; Sekar et al., 2026). Growing concerns about body image, especially among adolescents, have been worsened by this new online environment due to adolescents still developing their self-perception and social identity (Lynch et al., 2026; Sekar et al., 2026).

Adolescence is a period of constant psychological, physical, and social development (McDermott, 2025; Sekar et al., 2026). In this stage, individuals have an increased sense of awareness about themselves and attempt to prove themselves to their peers (McDermott, 2025). These developmental changes may lead to increased susceptibility among adolescents to unrealistic beauty standards set by social media (Sekar et al., 2026). Daily exposure to edited photos and videos, alongside other appearance-related content, can encourage dissatisfaction with an individual's facial features (Lynch et al., 2026). Adolescents are constantly on social media, with 73 per cent of teenagers reporting daily YouTube use and 60 per cent reporting daily TikTok use (Milovidov, 2024; Nagata et al., 2025). With the continued increase in digital exposure, concerns have risen about its influence on appearance-based decision-making (Milovidov, 2024; Nagata et al., 2025).

Maxillofacial procedures encompass a wide variety of treatments that may be performed for reconstructive, functional, or cosmetic purposes (Kaleeny & Janis, 2024). Many procedures are medically required; some are considered solely for aesthetic purposes (Kaleeny & Janis, 2024). Decisions are increasingly influenced by online appearance standards rather than actual clinical need, making psychological and social factors important considerations (Kaleeny & Janis, 2024) (**Figure 1**). Research has shown a relationship between body image dissatisfaction and social media usage, but few studies specifically examine how digital environments influence adolescents' decision-making, filtered images, or algorithm-driven recommendations (Mironica, Popescu, George, Tegzeșiu, & Gherman, 2024). Rather than looking at the particular online experiences that influence beauty evaluations and cosmetic decision-making, the majority of studies measure the frequency of social media usage (American Society of Plastic, 2025; International Society of Aesthetic Plastic, 2025). This results in a lack of studies relating to behavioural and psychological influences (American Society of Plastic, 2025; International Society of Aesthetic Plastic, 2025).

For clarity, this review distinguishes between medically indicated and reconstructive procedures, which address congenital differences, trauma, or functional impairment; functional procedures, which are intended to restore or improve physiological function such as breathing or occlusion; and elective aesthetic procedures, which are undertaken primarily to alter appearance in the absence of an underlying medical or functional indication. While psychological considerations may be relevant across all three categories, this review focuses specifically on the behavioural, psychological, and social influences on adolescents' decision-making regarding elective aesthetic and non-essential maxillofacial procedures, rather than on medically indicated or reconstructive care.

This paper examines how social media shapes adolescents' behavioural and psychological thought processes when deciding to undergo maxillofacial procedures (**Figure 1**). It explores the developmental and social factors that contribute to appearance-based concerns, the behavioural patterns that normalize cosmetic operations that change facial appearance, and the influence that social media holds in shaping adolescents' perceptions of facial appearance and elective operations (**Figure 1**).

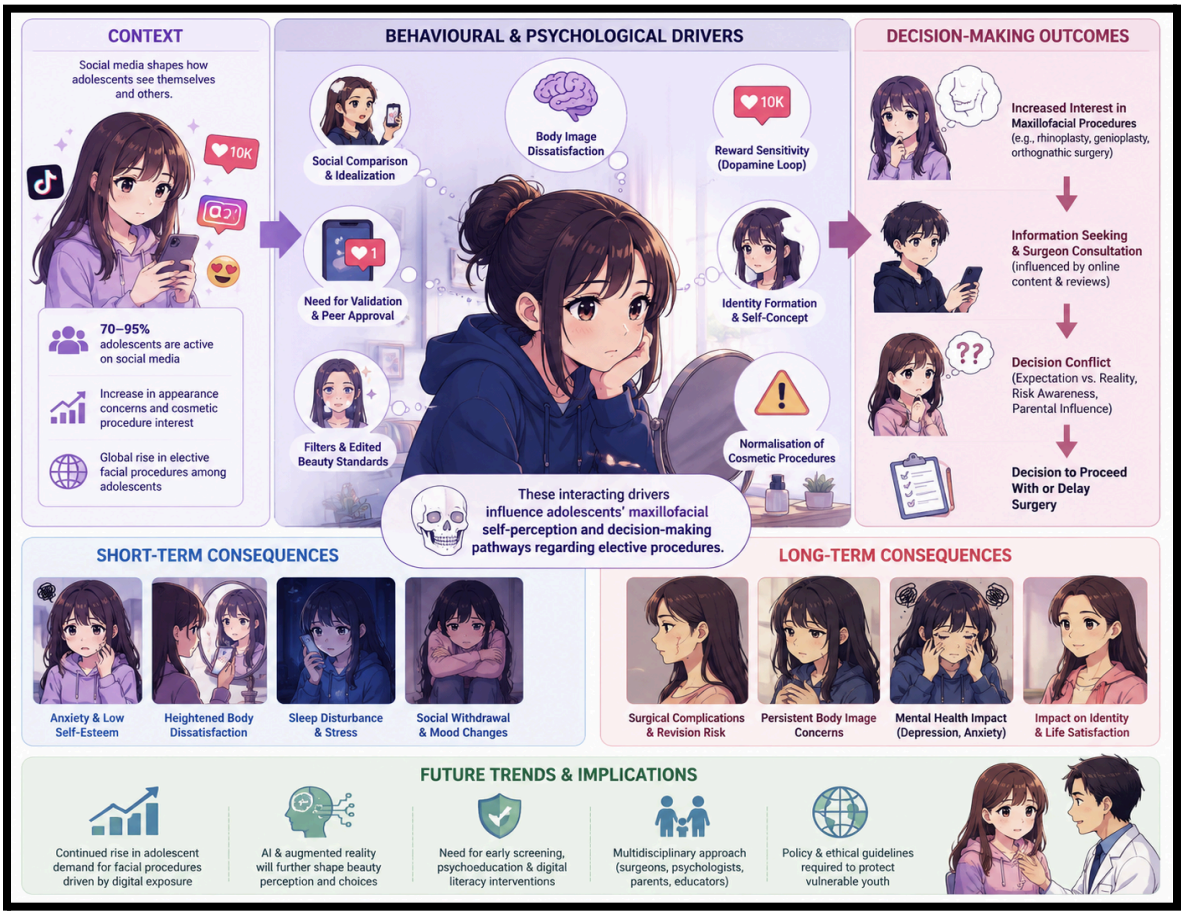


Figure 1: Proposed graphical model of how different social media platforms may influence the behavioural and psychological drivers associated with non-essential cosmetic decisions amongst adolescents. The image was created with BioRender (https://www.biorender.com), with assistance from ChatGPT (GPT-5.5).

METHODOLOGY/ SEARCH STRATEGY

This narrative review was informed by a structured, though non-systematic, literature search. Relevant publications were identified through Google Scholar, PubMed, and Scopus using combinations of the MESH terms such as adolescents, cosmetic surgery, maxillofacial, social media, body dysmorphic disorder (BDD), appearance-based decision-making, and cosmetic surgery consideration. Searches were limited to English-language, peer-reviewed articles, systematic and narrative reviews, and relevant position statements or guidelines published between 2010 and 2026, reflecting the range of sources cited throughout this review.

Studies were included if they examined psychological, developmental, social, or digital factors related to adolescents' (ages 10–19) body image, appearance concerns, or interest in cosmetic or maxillofacial procedures. Studies were excluded if they focused exclusively on adult populations, addressed cosmetic procedures unrelated to facial appearance, or did not report on psychological or behavioural outcomes. Titles and abstracts were first screened for relevance, followed by full-text review of potentially eligible articles. Because this review follows a narrative rather than a systematic format, findings should be interpreted as a synthesis of the available literature rather than as an exhaustive or fully reproducible search.

FACTORS EXACERBATING NON-ESSENTIAL MAXILLOFACIAL DECISIONS AMONGST ADOLESCENTS

Adolescence is a uniquely vulnerable stage of development due to the biological and psychological changes an individual is experiencing, which may exacerbate concerns about facial appearance (Sawyer, Azzopardi, Wickremarathne, & Patton, 2018). Puberty results in rapid skeletal growth, hormonal fluctuations, and other facial changes, which can make adolescents more aware of perceived imperfections before facial development is complete (Sawyer et al., 2018) (**Figure 2**). As an adolescent's brain continues to develop, reward-seeking behaviours and the desire for external validation become more prominent, causing identity formation to become increasingly tied to appearance and social acceptance (Pew Research, 2024).

Non-Modifiable Factors

Non-modifiable factors, such as structural variations of the face and skull that are present from birth, also known as congenital craniofacial differences, past facial trauma, inherited facial features, or functional conditions such as malocclusion, may increase appearance-based distress (Singer & Papadopoulos, 2024) (**Figure 2**). Although some of these conditions may require treatment, they may also cause a heightened sense of self-consciousness about facial appearance, which makes adolescents more susceptible to considering elective procedures beyond what is medically recommended (Singer & Papadopoulos, 2024) (**Figure 2**). Rather, they provide the developmental context in which adolescents may become more aware of their facial appearance (Huang & Fabi, 2024). These factors may increase the odds of adolescents

viewing normal facial features as problems that need correction, especially when combined with appearance standards set online (Huang & Fabi, 2024) (**Figure 2**).

Modifiable Risk Factors

Developmental changes already create a sense of vulnerability, but as social media usage increases, adolescents begin experiencing greater psychological distress and dissatisfaction with their appearance (Huang & Fabi, 2024) (**Figure 2**). Body dissatisfaction, low self-esteem, and symptoms of body dysmorphic disorder (BDD) may lead adolescents to pursue facial "perfection" through procedures they observe online, believing they can resemble influencers or other individuals whose appearances have been enhanced through filters or editing applications (Huang & Fabi, 2024; Laughter, Anderson, Maymone, & Kroumpouzos, 2023; Timraz et al., 2024) (**Figure 2**). In some cases, body dissatisfaction may develop into BDD, which is when individuals constantly feel concerned about their facial “flaws’’ (Laughter et al., 2023; Timraz et al., 2024) (**Figure 2**). This may contribute to distress and a belief that appearance change is needed. Interest in cosmetic operations may rise as a result of these psychological tendencies being reinforced by frequent comparison with idealized appearances displayed online (Laughter et al., 2023; Timraz et al., 2024).

Research suggests that digital media does not directly cause cosmetic surgery; rather, it strengthens existing insecurities and unrealistic expectations regarding facial appearance (Yao, 2024). Online environments, such as social media, amplify existing concerns rather than directly prompting adolescents to seek cosmetic operations (Yao, 2024). This may cause an increase in the risk of adolescents developing unrealistic expectations about surgical outcomes, such as believing that procedures will entirely fulfil their dissatisfaction with their appearance (Yao, 2024).

Alongside psychological factors, adolescents' decisions regarding cosmetic procedures are often influenced by their surrounding social environment (Yao, 2024) (**Figure 2**). Bullying and appearance-related teasing from classmates, peers, and online users are common experiences that can negatively affect self-perception (Orben, 2022; Vincente-Benito & Ramírez-Durán, 2023) (**Figure 2**). Cyberbullying intensifies these experiences by exposing adolescents to continuous criticism and appearance-focused comments through digital platforms (da Silva Pinho, 2024; Orben, 2022; Young et al., 2024). Peer approval, appearance-related bullying, and cultural/family attitudes toward cosmetic procedures may also influence the way in which adolescents view facial differences and whether they see cosmetic intervention as normal and socially acceptable (da Silva Pinho, 2024; Young et al., 2024). These pressures may increase facial dissatisfaction and make cosmetic procedures seem necessary to be accepted by one’s social circle and social media (Mironica et al., 2024; Orben, 2022; Young et al., 2024).

In addition, cultural beauty standards and gender expectations influence which facial characteristics are considered attractive or in need of correction (Alduosari et al., 2025) (**Figure 2**). Adolescents may consider normal facial diversity as undesirable and become more interested in changing features that do not represent medical issues if they are exposed to restrictive appearance ideals (Alduosari et al., 2025)

(**Figure 2**). The term "normal facial diversity" describes the inherent variation in facial traits that exist among individuals and populations, such as variations in nose shape, jaw structure, lip size, facial symmetry, or cheekbone prominence. However, repeated exposure to unrealistic beauty ideals may lead adolescents to interpret these regular differences as flaws that need correction rather than natural characteristics (Alduosari et al., 2025).

Non-essential maxillofacial decisions do not stem from a single cause; instead, they emerge from the interaction of developmental vulnerabilities, psychological influences, social media exposure, and interpersonal experiences (Lynch et al., 2026) (**Figure 2**). When combining these factors, the likelihood of adolescents seeking cosmetic procedures based on false expectations and self-believed facial imperfections rather than functional necessity may increase (World Health Organization Regional Office for, 2024) (**Figure 2**).



Figure 2: Proposed model of different modifiable and non-modifiable risk factors that may be associated with non-essential cosmetic surgical procedures among teenagers. The image was created with BioRender (https://www.biorender.com), alongside assistance from ChatGPT (GPT-5.5).

BEHAVIOURAL AND PSYCHOLOGICAL PATTERNS AFFECTING ADOLESCENT DECISION-MAKING

Some research suggests that adolescents tend to develop understanding and perception of their appearance by interacting with peers, family members, and other surroundings in their environment (World Health Organization Regional Office for, 2024) (**Figure 3**). During this developmental period, individuals are constantly forming their social identity and can be more sensitive than usual to criticism and seek acceptance (World Health Organization Regional Office for, 2024). Appearance-based teasing or negative comments relating to facial features that are common throughout this stage, such as acne, changing facial structure, facial hair, or any other characteristics, can determine how one perceives themselves and eventually lead to the seeking of cosmetic procedures (Fassi et al., 2024) (**Figure 3**).

Peer acceptance can play a substantial role in adolescent decision-making since physical appearance may correlate with social belonging and self-confidence (Almudimeegh, Almukhadeb, & Nagshabandi, 2024) (**Figure 3**). Repeated exposure to criticism, bullying, or pressure from classmates may lead to adolescents viewing facial differences, which may contribute to the belief that changing one's appearance will lead to greater confidence, relationships, and social acceptance (Almudimeegh et al., 2024).

Adolescent psychological vulnerability may exacerbate these pressures. Some research suggests that adolescents may be more responsive to social approval because reward- and motivation-related brain systems tend to develop earlier than those responsible for long-term decision-making (American Psychological, 2023; Giannakopoulos, 2025; Yao, 2024) (**Figure 3**). Additionally, concerns connected to body dissatisfaction and body dysmorphic disorder (BDD) may have a role in the way adolescents view their appearance and take in feedback from others (Milovidov, 2024). But these psychological factors do not necessarily indicate that cosmetic procedures are always inappropriate; instead, they emphasize that it is key to understand an adolescent's motivations and expectations before thinking of undergoing elective treatment (Rodgers et al., 2020).

DIGITAL MEDIA AND ALGORITHMIC INFLUENCING OF TEENAGERS' MINDSETS

Digital platforms can worsen appearance concerns by constantly exposing adolescents to unrealistic beauty standards that they may idealize through algorithm-driven content (Tiggemann & Slater, 2013) (**Figure 3**). Unlike general social media usage, appearance-based engagement is strongly connected with cosmetic surgery consideration since adolescents tend to be exposed to filtered images, cosmetic procedure content, including before and afters, and appearance-based comparisons (Meshi, Tamir, & Heekeren, 2015) (**Figure 3**). Hermans and colleagues discovered that discussions about cosmetic procedures, filtered photos, and selfies may normalize aesthetic treatments by making them seem typical and easily attainable (Hermans, Boerman, & Veldhuis, 2022).

However, increased screen time by itself does not directly lead adolescents to seek cosmetic procedures (Walker, Krumhuber, Dayan, & Furnham, 2021) (**Figure 3**). Rather, constant exposure to algorithmically chosen content that reinforces existing insecurities may cause this (Walker et al., 2021) (**Figure 3**). The algorithm exposes adolescents to unrealistic facial standards, non-professional influencer-promoted appearances, and digitally modified images as normal expectations (Hermans et al., 2022) (**Figure 3**). Over time, these online environments can cause individuals to compare themselves with online images that are heavily edited and inorganic and view cosmetic procedures as a means of achieving an idealized identity (Rodgers et al., 2020).

The consequences of digital media often interact with existing psychological and social vulnerabilities (Rodgers et al., 2020) (**Figure 3**). Adolescents who have already experienced appearance-based problems such as low self-esteem, appearance dissatisfaction, or worries about their social acceptance tend to be influenced by online beauty standards and comparison behaviours (Fassi et al., 2024). As a result, digital platforms alone may not cause appearance-based problems but can add insult to injury by strengthening existing beliefs that physical modification is needed for confidence, belonging, or acceptance (Timraz et al., 2024).

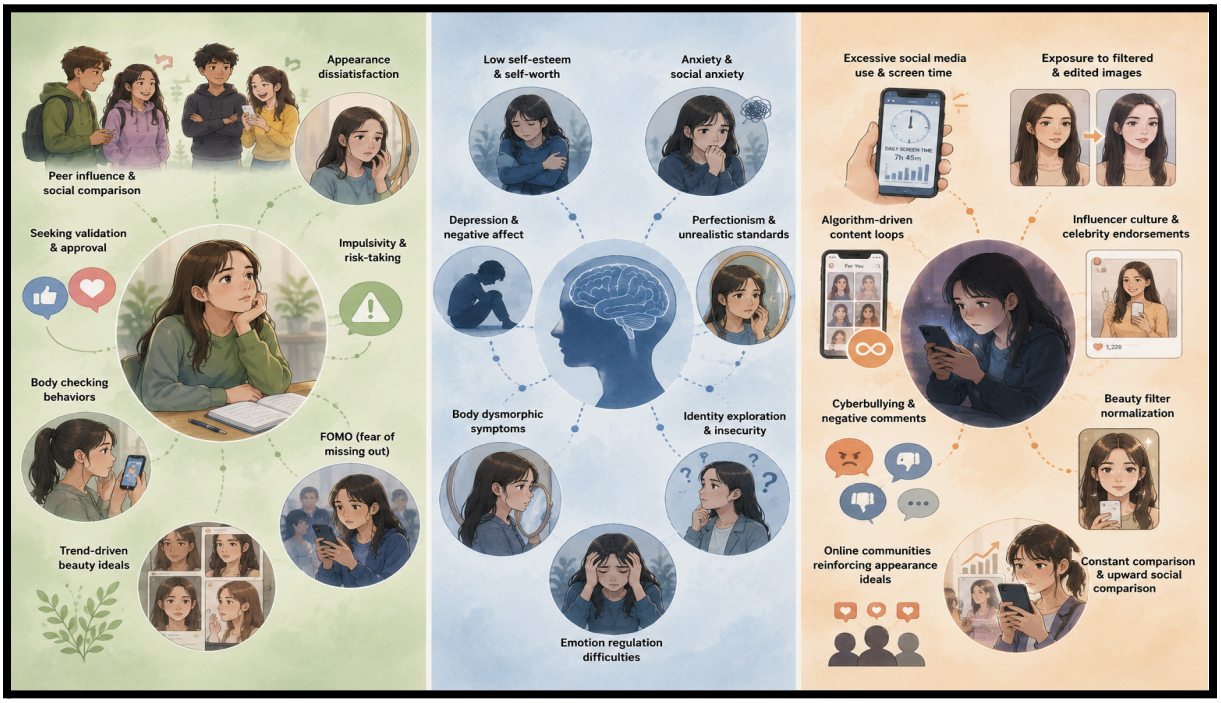


Figure 3: Proposed graphical model of how different behavioural, psychological, digital, and algorithmic drivers may influence decision-making capabilities regarding non-essential surgical procedures. The image was created with BioRender (https://www.biorender.com), alongside assistance from ChatGPT (GPT-5.5).

SOCIOCULTURAL BEAUTY STANDARDS

Sociocultural beauty standards influence the way adolescents view and interpret facial appearance by establishing characteristics that are desirable, undesirable, and need correction (Telzer, 2021). During adolescence, facial appearance correlates with identity formation, social belonging, and being accepted by one's surroundings (Telzer, 2021). Cosmetic wants may arise from frequent exposure to social beauty standards instead of just reflecting personal preferences (Telzer, 2021). According to research, upward appearance comparison and internalization of beauty ideals are crucial pathways linking appearance-focused environments with thinking of cosmetic procedures (van Duijvenvoorde, van Hoorn, & Blankenstein, 2022). Therefore, the concern is not solely the idea of beauty preferences, but rather when unrealistic online standards become personal expectations that may contribute to adolescents viewing normal facial appearance as a deficiency (van Duijvenvoorde et al., 2022).

Gender-based beauty ideals exemplify how sociocultural expectations can determine which facial characteristics are associated with attractiveness, desirability, and social value. (Tiggemann & Slater, 2013). Masculine facial standards are usually associated with characteristics including a prominent jawline, chin projection, facial symmetry, and facial definition, whereas feminine standards emphasize features such as smooth skin, full lips, smaller noses, facial symmetry, and delicate facial structures (Fassi et al., 2024; Mahon & Hevey, 2021).

Problems may arise when these narrow ideals start to be treated as the universal standard, even though they only represent a limited range of naturally occurring facial variation (Mahon & Hevey, 2021). Adolescents may use these features as social measurements in which they evaluate attractiveness, confidence, belonging, and perceived social value (Mahon & Hevey, 2021). By portraying facial features as qualities that correlate with status, attractiveness, and personal success, these ideals may reinforce the idea that achieving a certain look provides benefits within society (Mahon & Hevey, 2021). Consequently, some adolescents may view developmental facial changes as negative permanent flaws that require cosmetic intervention (Mahon & Hevey, 2021).

Celebrity culture intensifies these expectations by establishing recognizable facial templates that adolescents may view as symbols of attractiveness, success, and social desirability (Huang & Fabi, 2024). Influencers and celebrities appear desirable because they frequently embody socially acceptable kinds of prosperity, popularity, and attractiveness (Timraz et al., 2024). However, adolescents may not realize how professional styling, cosmetic procedures, and selective presentation contribute to these carefully constructed appearances (Timraz et al., 2024). Researchers have demonstrated that engagement with beauty ideals is associated with upward appearance comparison and cosmetic surgery consideration, meaning that idealized figures play a role in how adolescents view their own appearance (Seekis & Barker, 2022). As a result, a celebrity’s facial features may cause individuals to seek out similar modifications, such as a particular nose shape, sharp jawline, or facial proportions (Seekis & Barker, 2022).

The transition from beauty ideals to maxillofacial consultations follows a psychological process that incorporates exposure, upward comparison, internalization, dissatisfaction, and procedural interests (Orben, Tomova, & Blakemore, 2020). Adolescents' usage of appearance-enhancing filters was linked to increased acceptability and consideration of cosmetic surgery, indicating that idealized appearance representations may affect aesthetic expectations. (Alduosari et al., 2025; Lynch et al., 2026; Mironica et al., 2024). Since adolescents may seek procedures for reasons outside of physical concerns, this pathway is clinically important. Some adolescents may believe that changing facial features will improve social identity, relationships, confidence, or acceptance among peers. (McDermott, 2025; World Health Organization Regional Office for, 2024).

NEURODEVELOPMENTAL PATHWAYS INFLUENCING NON-ESSENTIAL COSMETIC DECISIONS AMONG ADOLESCENTS

Adolescence represents a developmental stage in which social learning, identity formation, and decision-making abilities experience a considerable degree of change (Orben et al., 2020; Sawyer et al., 2018). Throughout this stage, reward systems are thought to become more responsive to novelty, emotional relevance, and feedback from surroundings, while areas related to long-term planning, impulse regulation, and risk evaluation are still maturing (Sawyer et al., 2018) (**Figure 4**). This does not mean that adolescents cannot make decisions; instead, they are more sensitive to decisions that result in immediate acceptance (Telzer, 2021) (**Figure 4**). In the context of maxillofacial procedures, compliments or other positive reactions towards one's appearance may serve as a strong reinforcer, increasing the perceived value of facial features (Laughter et al., 2023) (**Figure 4**).

Adolescents' interpretation of cosmetic-related information and assessment of outcomes may be influenced by reward sensitivity (Seekis & Barker, 2022). Appearance changes may start to correlate with benefits, such as a boost in confidence, social acceptance, and perceived attractiveness, but other problems such as recovery, complications, revision procedures, or long-term satisfaction may receive less attention (Walker et al., 2021) (**Figure 4**). This may contribute to an imbalance in decision appraisal, which is when the social advantages of the procedure seem more significant than the consequences, which on the outside may be true temporarily, but long-term is not the case (Telzer, 2021) (**Figure 4**). The want of improving one's appearance is normal and not a concern, but the increased sensitivity to immediate reinforcement is concerning since it may lead to premature consideration of elective facial alterations (van Duijvenvoorde et al., 2022).

Another important component influencing adolescent decision-making on appearance-related issues is social validation (Alduosari et al., 2025) (**Figure 4**). During adolescence, peer evaluation is particularly important as individuals develop their sense of belonging and social identity (Yao, 2024) (**Figure 4**). Different forms of approval, including likes, comments, and positive feedback, may measure social acceptance (Timraz et al., 2024) (**Figure 4**). Research examining adolescent responses to social media feedback demonstrates that youth individuals show greater sensitivity to changes in social approval

compared with adults, which suggests that online feedback can play a major role in one's emotional responses and self-perception (Kaleeny & Janis, 2024). When facial appearance and social value are connected, dissatisfaction may be viewed as a concern that needs physical correction instead of a normal component of individual variation (Laughter et al., 2023).

The face may be the most important component during adolescent development because it connects to identity, maturity, and social perception (Ramirez, Cullen, Ahdoot, & Scherz, 2024) (**Figure 4**). Features such as the nose, jaw, chin, and facial profile are highly visible and may influence how one person is viewed by another (Almudimeegh et al., 2024). This results in concerns regarding facial appearance being more significant than less visible characteristics (Laughter et al., 2023) (**Figure 4**). Adolescents that consider maxillofacial procedures, it is important to distinguish functional needs and appearance-based motivations because decisions may be influenced by outside expectations, status, and a desire for acceptance instead of only medical necessity (Medical Board of, 2023; Telzer, 2021).

Unrealistic expectations may become more likely when appearance-focused demands combine with neurodevelopmental sensitivity (Almudimeegh et al., 2024; Fassi et al., 2024; Laughter et al., 2023) (**Figure 4**). Adolescents may view procedures as miracle makers and immediately fix their problems (Fassi et al., 2024). At the same time, they may underestimate the problems that may arise after a procedure, such as dissatisfaction or regret (Kaleeny & Janis, 2024; Triana, Palacios Huatuco, Campilgio, & Liscano, 2024). This does not mean that adolescent cosmetic decisions are always inappropriate; instead, it means that developmental factors can play a role in how benefits and risks are viewed (Ateq, Alhajji, & Alhusseini, 2024). Understanding these influences is key when examining why some adolescents want maxillofacial procedures before they fully know the long-term consequences that may come with underage face-altering procedures (American Psychological, 2023).



Figure 4: Proposed graphical model of diverse neurodevelopmental pathways and how they may influence non-essential cosmetic decisions amongst adolescents. The image was created with BioRender (https://www.biorender.com), alongside assistance from ChatGPT (GPT-5.5).

STRATEGIES TO MITIGATE ADVERSE OUTCOMES ASSOCIATED WITH NON-ESSENTIAL COSMETIC PROCEDURES

Reducing non-essential cosmetic and maxillofacial procedures in adolescents begins with improving the decision-making process rather than focusing solely on the procedure itself (Alduosari et al., 2025). During adolescence, appearance-based concerns are intensified due to identity development, seeking peer acceptance, and greater sensitivity to social feedback (Alduosari et al., 2025). These pressures may be strengthened by social media since it repeatedly exposes young people to edited images, unrealistic expectations, and idealized facial features (Maldonado J et al., 2025). Over time, this repeated exposure may lead to an increase in dissatisfaction with normal facial variation, thus making cosmetic procedures feel like the only plausible solution (Maldonado J et al., 2025).

Therefore, prevention should begin before a clinical consultation by promoting media literacy, encouraging healthy body image, and helping adolescents recognize external influences on their decisions (Maldonado J et al., 2025) (**Figure 5**). These factors need to be addressed before the root cause reaches a stage in which it cannot be stopped, and it will lead adolescents to make more thoughtful decisions and reduce appearance-driven motivations before they progress into requests for elective treatment (Maldonado J et al., 2025).

Psychological screening should play a key role in evaluating adolescents seeking nonessential cosmetic or maxillofacial procedures (Gordon et al., 2020) (**Figure 5**). Conditions such as body dysmorphic disorder, anxiety, depression, and low self-esteem may lead to a rise in dissatisfaction relating to appearance while also causing the youth to believe that surgery will immediately resolve emotional distress or improve social acceptance (Gordon et al., 2020). Identifying these concerns before treatment allows clinicians to distinguish whether the patient has realistic expectations and/or if they have motivations shaped by psychological vulnerability (Gordon et al., 2020).

When significant concerns are identified, referral to a psychologist or psychiatrist should occur before any elective intervention is considered (Vincente-Benito & Ramírez-Durán, 2023) (**Figure 5**). This allows adolescents the chance to address underlying emotional difficulties while reducing the likelihood of postoperative disappointment, constant body-image concerns, or continued seeking of procedures (Laughter et al., 2023). Informed decision-making should go beyond merely outlining the dangers of surgery once an adolescent is deemed psychologically suitable (Medical Board of, 2023). Repeated consultations, cooling-off periods, and structured decisions help to allow patients to reflect on their motivations and think if non-surgical options may better meet their needs (Medical Board of, 2023). Clinicians should also discuss the limits of the operation, the complications that come with it, recovery time, and the possibility that their unrealistic expectations may not be met (Medical Board of, 2023).

Asking adolescents to explain their issues in their own words helps confirm that they are aware of the benefits, but also the uncertainties of procedures or surgical operations (Maldonado J et al., 2025) (**Figure 5**). With these safeguards, there is careful consideration, and reduce the likelihood that important decisions are made during periods of emotional stress or social pressure (Maldonado J et al., 2025). Effective prevention should also extend beyond the clinic by addressing the wider social and digital environments that also aid in shaping appearance-related beliefs (Lynch et al., 2026). Programs that aid in media literacy can help teach adolescents how to recognize filters, edited photos, sponsored content, and algorithm-driven recommendations that promote unrealistic expectations (Liu et al., 2025).

Healthcare providers have a responsibility to showcase balanced information by not promoting “false” content that overlooks recovery, exaggerates results, or encourages impulsive decision-making (Medical Board of, 2023) (**Figure 5**). Families, schools, mental health professionals, and clinicians can further strengthen these efforts by promoting positive body image and supporting adolescents who are dealing with appearance-based problems (American Psychological, 2023; Medical Board of, 2023) (**Figure 5**). Together, psychological screening, informed consent, ethical communication, and digital education create a system that reduces non-essential cosmetic and maxillofacial procedures while protecting adolescent well-being (American Psychological, 2023; Gordon et al., 2020; Liu et al., 2025; Maldonado J et al.,

2025).

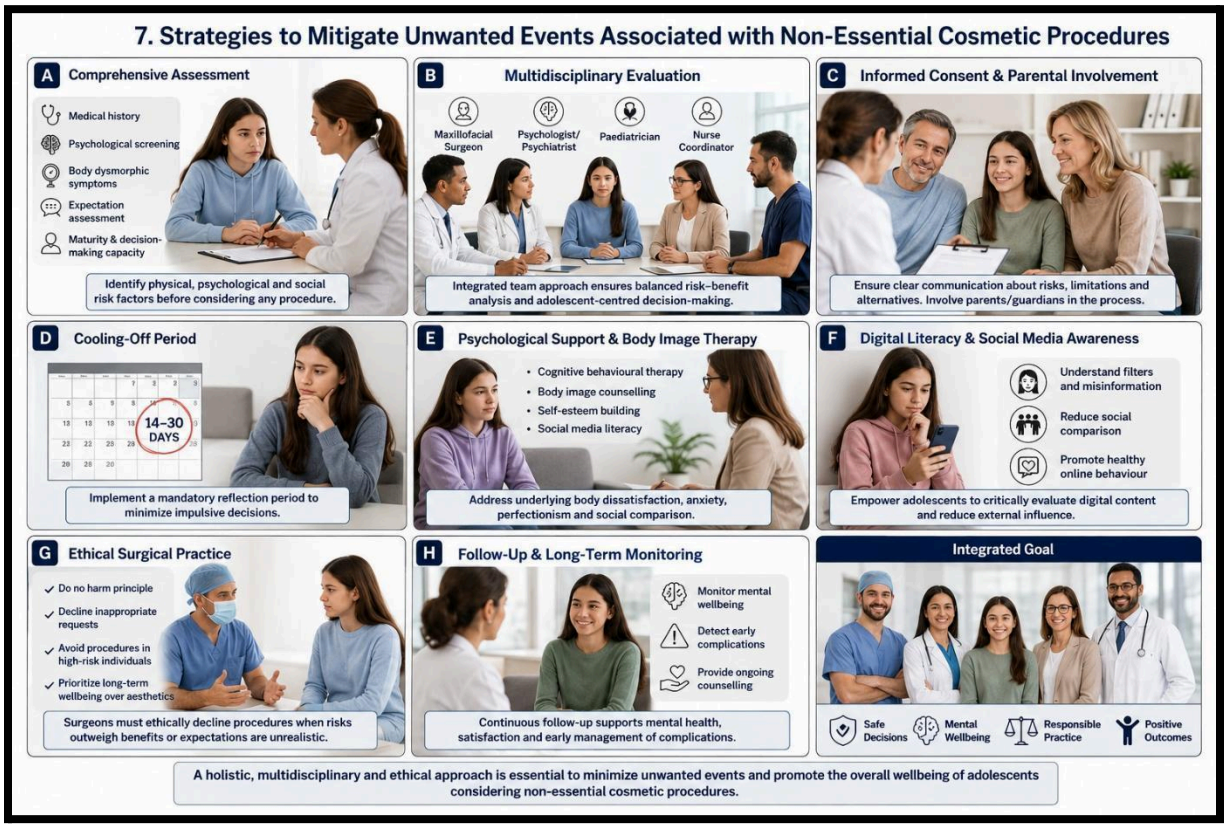


Figure 5: Figure illustrating different strategies to minimize adverse outcomes from non-essential cosmetic procedures, including comprehensive screening, multidisciplinary assessments and informed consent, cooling-off periods, psychological support, digital literacy, ethical surgical practice, and longitudinal follow-up. Together, these multipurpose approaches provide an adolescent-centred preventive pathway, prioritizing psychological wellbeing, patient safety, and avoidance of non-essential cosmetic and surgical interventions. The image was created with BioRender (https://www.biorender.com), alongside assistance from ChatGPT (GPT-5.5).

FUTURE DIRECTIVES

Before outlining future directions, it is important to note that most of the literature discussed in this review is cross-sectional or correlational in nature. As a result, the pathways described throughout this review, including those illustrated in Figures 1–4, should be understood as proposed or hypothesized models of how developmental, psychological, social, and digital factors may interact, rather than as established causal mechanisms.

Future research should move past isolated risk factors and examine adolescent cosmetic decision-making as a multidimensional process. There should be studies that track developmental vulnerability, digital

exposure, psychological appraisal, and consultation, and how they interact over time rather than relying primarily on cross-sectional measures (Fassi et al., 2024). Researchers should also distinguish between functional or reconstructive needs and appearance-based requests and examine how these choices vary depending on gender, culture, and socioeconomic contexts (Fassi et al., 2024).

Clinical practice should develop specific safeguards for adolescents before certain procedures are considered. Future pathways could include screening for BDD symptoms and appearance anxiety, assessment of family or peer pressure, expectation calibration, and cooling-off periods. Before pursuing irreversible operations, shared decision-making should make sure that teenagers are aware of risks, uncertainties, and non-surgical options (Kaleeny & Janis, 2024).

Instead of just cutting back on screen time, digital and policy interventions should address appearance reinforcement. Future strategies can incorporate transparent cosmetic advertising, labelling filters, AI-edited content, improved appearance-media literacy, and reinforcement against youth-targeted procedure marketing. When combined, these actions could establish a preventive framework that preserves access to appropriate functional and reconstructive care while lowering coercion, false expectations, and avoidable harm.

CONCLUSION

Adolescence is a critical developmental stage in which biological, psychological, and social changes can influence how teenagers view their facial appearance. Medical needs are not the only reason some may seek maxillofacial procedures; there are other factors such as identity, appearance, and social acceptance. Sociocultural standards and celebrity culture can create narrow facial ideals that may lead adolescents to believe in false appearances. Digital media can strengthen these ideals by constant exposure to edited appearances, cosmetic content, and appearance-based comparisons.

Psychological vulnerabilities, including appearance dissatisfaction, social comparison, and identity conflict, can further influence procedure consideration. When combined, these factors may lead teens to perceive typical facial variance as an issue that has to be fixed. Therefore, developmental awareness, psychological screening, digital literacy, and well-informed healthcare decision-making should all be incorporated into prevention. In the end, adolescent maxillofacial care should minimize avoidable appearance-driven harm while at the same time protecting legitimate functional demands.

LIST OF ABBREVIATIONS

BDD: Body dysmorphic disorders

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Authors' Contributions

Conceptualization, D.K., N.S.; Writing, D.K.; Supervision, Review, and Editing, N.S., S.I. All authors have read and agreed to the published version of the manuscript. The authors acknowledge the use of publicly available electronic databases and published literature that formed the basis of this review.

Competing Interests

The authors declare no conflict of interest. All the images were created with BioRender (https://www.biorender.com), with assistance from ChatGPT (GPT-5.5) for conceptual illustrations, and scientifically curated, edited and reviewed by the authors. All scientific content, interpretation, verification of references and final manuscript approval were performed by the authors, who take full responsibility for the integrity of the content.

Ethical Statement

Not applicable. This manuscript is a narrative review and does not involve any new studies with human participants or animals performed by the authors.

Consent For Publication

We confirm that this manuscript has not been published elsewhere, nor is it under consideration by any other publication.

Availability Of Data And Materials

All the data and materials have been provided in the manuscript.

Data Availability Statement:

No new data were generated or analysed in this study. All data supporting the findings of this review are available within the article and its cited references.

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