

AI FILTER USAGE AND BODY IMAGE CONCERNS AMONG ADOLESCENTS: A SYSTEMATIC REVIEW

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Article Info	ABSTRACT
Article History: Received: 15th Dec 2025 Accepted: 18th Dec 2025 Published: 20th Dec 2025 Keywords: <i>Body Image, AI-filters, teenagers, social pressure, body dissatisfaction.</i>	Adolescent's perception of their virtual presence has been significantly transformed because of the Artificial Intelligence (AI) driven beautification filters available on social media platforms. These filters significantly modify facial features, skin tones hair color, etc. often creating unrealistic appearance standards. In order to find out the link between teenage body-image issues and the use of AI filters, the present systematic review summarizes empirical results from research published between 2015 to 2024. Results constantly point to a link between the positive correlation between frequent use of AI filters and increased body dissatisfaction and symptoms of Body dysmorphic disorder (BDD). The present study focuses on psychological processes, such as social comparison, internalization of the false appearance standards that underlie these effects. Furthermore, the implications and recommendations for prevention and future research are also presented.

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INTRODUCTION:

Since the early 1990s, people have been deeply fascinated by actors and actresses. Many people admired these celebrities to the extent that they wanted to dress like them or even look like them. Amitabh Bachchan's bell-bottom pants, Dev Anand's signature hairstyle, Tom Cruise's charming looks, and Marilyn Monroe's iconic poses all became trends of their respective eras. Rajesh Khanna was idolized almost like a demigod, while Madhubala's innocent smile captured the hearts of millions across the country.

From a different perspective, it becomes evident that society has long been preoccupied with physical appearance—whether it involves weight, wrinkles, body shape, or overall looks. Even while watching television or listening to radio advertisements, we come across many advertisements focused around beauty or youthfulness-enhancing products. As a result, concern about “Looking Perfect” has unfortunately become a normal part of our life.

Also teens obsessed with “A Perfect Look” now a day's take help of “AI Beautification Filters” that help them project their desired look on social media platforms where they get “virtual admiration” in the form of likes! AI's influence on body image is a complex, multi-layered problem, shaped by its role in society. It acts as a tool that can amplify harmful ideas, particularly negative self image!

Artificial Intelligence and Algorithms!

There is no denying that artificial intelligence (AI) plays a powerful role in shaping how social media works and how people interact with it every day. Behind the scenes, social media platforms rely on AI to learn about users—what they like, what they watch, and how they engage with content. As Jung et al. (2022) explain, these algorithms constantly analyze users' behaviors, such as scrolling patterns, likes, comments, and shares, to build a personalized feed tailored to each individual.

AI's influence goes beyond simply deciding what appears on a user's screen. It also supports content creation through tools like facial recognition filters, augmented reality effects, and smart audio-editing features that make posts more engaging and visually appealing. At the same time, AI-driven recommendations help users discover new friends, communities, and interests, making it easier to expand their social networks. In this process, human choices and machine decisions work together, shaping the overall social media experience.

Social media companies continue to refine these algorithms to keep up with changing user preferences and commercial goals, ensuring that content and advertisements feel more relevant. However, this growing dependence on AI also raises important concerns. Issues such as algorithmic bias, reduced user autonomy, and the subtle manipulation of online behavior highlight the need for greater transparency and ethical responsibility in the design and use of AI-driven social media systems.

Social media algorithms, which AI drives, can create a “filter bubble” of content that reinforces negative body standards. What starts as a casual interest can quickly become an overwhelming stream of intense diet and fitness videos. In addition, AI editing tools and generative AI have eliminated barriers to creating digitally altered, “perfect” images. This amplifies existing societal biases found in training data, promoting a narrow and often unattainable beauty ideal.

What becomes clear from this is the over-simplification of what beauty is. The AI results pander to outdated stereotypes and reveal the tool's limitations and implicit biases. Algorithms used by platforms to recommend content often prioritize images and videos that conform to western conventional beauty

standards. This can limit the diversity of body types and appearances represented online, making those who don't fit these standards feel excluded or inadequate.

On top of this, AI-driven advertising often targets young people with content that reinforces these unrealistic beauty standards. These targeted ads can heighten feelings of inadequacy and self-doubt, as young people are bombarded with messages that suggest they need to change their appearance to be accepted or successful.

AI-powered image editing

There is a growing trend for social media platforms to have filters and design software to include AI-powered image editors and image generators. This means, at the click of a button people can alter a picture to change the way they or somebody else looks. This could be smoothing skin, altering facial features, or even changing someone's body shape. In fact, the tech has become so sophisticated you can even create a completely made-up, and scarily realistic, image dreamt up entirely by machine learning.

On first glance this might seem harmless, but it can quickly become toxic. There is already a lot of pressure put on young people through the images they see in magazines and on social media about body image and identity. Being able to alter appearances and post it online could create even more unrealistic beauty standards and distort young people's view of themselves.

Rationale of the Study

- Adolescence is a vulnerable period for identity and body image formation.
- AI-driven filters intensify social comparison and appearance pressure.
- Need for systematic synthesis of empirical evidence

REVIEW OF LITERATURE

Recent research highlights the growing influence of digital technologies, artificial intelligence (AI), and social media environments on body image, particularly during adolescence and young adulthood. This body of literature collectively emphasizes how appearance-focused digital affordances interact with developmental vulnerabilities, sociocultural pressures, and algorithmic systems to shape body-related perceptions, comparisons, and behaviors.

AI Filters, Self-Comparison, and Body Dissatisfaction

Schroeder and Behm-Morawitz (2023) addressed an important gap in earlier media-effects research, which largely focused on comparisons with idealized images of others. Their study introduced the concept of social self-comparison, emphasizing intrapersonal comparison between one's filtered and unfiltered self. In an online experimental study involving 187 social media users, the authors demonstrated that applying a slimming beauty filter to one's own photograph intensified comparison processes, resulting in higher body dissatisfaction, increased desire for weight loss, and elevated self-objectification. Crucially, body dysmorphia and social self-comparison emerged as significant mediators, underscoring the unique psychological risks associated with personal filter use. By shifting the focus from interpersonal to intrapersonal comparison mechanisms, this study advances understanding of how AR beauty filters uniquely affect body image.

Generative AI, Appearance Pressure, and Social Avoidance

Extending this line of inquiry into AI-driven digital environments, Sun, Xiao, Luo, and Yang (2025)

examined the impact of appearance-related social pressure on social avoidance among university students. Drawing on data from 894 participants and standardized measures of appearance ideal internalization, body image satisfaction, and social avoidance, the study found that media-driven appearance pressure significantly increased social avoidance while simultaneously reducing body image satisfaction. Body image was identified as a partial mediator, accounting for more than half of the indirect effect. These findings suggest that generative-AI-enhanced social media environments intensify appearance norms, which in turn influence both body-related cognitions and broader social behaviors.

Snapchat Dysmorphia and Theoretical Perspectives

The emerging phenomenon of “Snapchat dysmorphia” has been examined by Tremblay, Essafi Tremblay, and Poirier through a theoretical lens grounded in the active inference framework. Their work conceptualizes technology-driven body image disturbances as the result of dysfunctional self-modelling and maladaptive internalization of sociocultural beauty ideals during adolescence. The authors argue that frequent engagement with AI-powered selfie filters disrupts interpersonal active inference cycles, limiting corrective sensory feedback and reinforcing distorted body beliefs over time. This framework provides a novel explanatory model for understanding how image-centric platforms may contribute to body dysmorphic symptoms, particularly during identity formation.

Technological Assessment and Socio-cultural Influences

Vajpayee (2024) explored negative body image among student populations using both traditional survey methods and innovative IoT-based assessment approaches. The findings revealed pronounced gender differences, with female students reporting significantly higher body dissatisfaction, and identified adolescents as a particularly vulnerable group. The study further demonstrated that negative body image adversely affects social and occupational functioning. Importantly, Vajpayee highlighted the potential of IoT technologies for real-time monitoring and intervention, proposing integrated strategies such as media literacy, educational initiatives, and culturally sensitive awareness programs. This work expands the literature by combining technological innovation with psychological and sociocultural analysis.

Algorithmic Curation, Lifestyle, and Identity Formation

Misnawati et al. examined the impact of AI-driven content filtering on Instagram and its influence on youth lifestyle and social interaction. Using qualitative methods, including content analysis and in-depth interviews with Indonesian youth aged 16–20, the study found that algorithmic personalization creates “filter bubble” environments that shape beauty ideals, lifestyle aspirations, and patterns of social validation. Grounded in Information Integration Theory, the authors demonstrated how continuous exposure to curated content influences cognition, identity expression, and peer interactions, reinforcing the need for digital literacy and algorithmic awareness among young users.

Developmental and Cross-National Perspectives on Social Media Use

From a developmental perspective, Bennett (2023) synthesized research on digital technologies and adolescents’ body image, drawing on sociocultural and social comparison theories. The review highlighted how social media platforms promote visual self-presentation and appearance-based comparison through feedback mechanisms such as likes and comments. Practices including selfie-taking, image editing, and filter use were linked to unrealistic beauty standards and increased body dissatisfaction, while online forums were shown to function as both risk and protective spaces. Bennett emphasized the

importance of considering adolescent developmental vulnerabilities alongside technological affordances and called for future research on fostering positive body image through digital platforms.

Complementing this review, Boniel-Nissim et al. (2024) provided robust cross-national evidence from 42 countries by distinguishing between four categories of social media use: non-active, active, intensive, and problematic. Their findings indicated that intensive and problematic use were significantly associated with negative body image and inaccurate body weight perceptions, with stronger effects observed among girls. In contrast, non-active and active use showed weaker associations. This large-scale study underscores the importance of differentiating patterns of social media engagement rather than treating use as a uniform construct.

SUMMARY OF REVIEWED STUDIES

Author(s) & Year	Study Focus	Sample / Data	Methodology	Key Findings	Key Contribution
Schroeder & Behm-Morawitz (2023)	Impact of AR beauty filters on body image	N = 187 social media users	Online experimental design	Use of slimming filters increased social self-comparison, body dissatisfaction, desire for weight loss, and self-objectification; body dysmorphia acted as a mediator	Shifted focus from interpersonal to intrapersonal (self-based) comparison mechanisms in filter use
Sun et al. (2025)	Appearance-related social pressure in AI-driven social media	N = 894 university students	Survey using SATAQ, BISS, Social Avoidance Scale	Appearance pressure increased social avoidance and reduced body image satisfaction; body image partially mediated the relationship	Demonstrated psychological pathways linking AI-driven appearance pressure and social behavior
Tremblay, Essafi Tremblay & Poirier (Year)	Snapchat dysmorphia and body image distortion	Conceptual / theoretical	Active inference framework	AI-powered filters disrupt self-modelling and identity formation, leading to rigid distorted body beliefs	Provided a novel theoretical explanation for technology-driven body dysmorphic symptoms
Vajpayee (2024)	Negative body image and mental health using IoT	Student population	Surveys and IoT-based assessment	Females and adolescents showed higher body dissatisfaction; negative body image impaired social and work functioning	Integrated technological monitoring tools with psychological assessment and intervention
Misnawati et al. (Year)	AI-driven content filtering on	Indonesian youth (16–20 years)	Qualitative: interviews, content	Algorithmic personalization shaped beauty ideals,	Highlighted role of AI algorithms in identity

	Instagram		analysis	lifestyle aspirations, and social validation; created filter bubbles	formation and media consumption
Bennett (2023)	Digital technologies and adolescent body image	Review of existing studies	Narrative review	Social media, selfies, filters, and fitspiration linked to body dissatisfaction; forums can be risk or protective spaces	Integrated developmental vulnerabilities with technological affordances
Boniell-Nissim et al. (2024)	Social media use patterns and body image	Adolescents from 42 countries	Large-scale cross-national survey	Intensive and problematic use associated with negative body image; stronger effects for girls	Emphasized importance of differentiating patterns of social media use

METHODOLOGY

Objective:

- Examine relationship between AI filter usage and body image concerns.
- Identify psychological mechanisms involved.
- Highlight implications and future research directions.

Search Strategy:

A systematic review search was conducted in PsycINFO, PubMed, Scopus, Web of Science, and Google Scholar using combinations of the keywords:

- "AI filters," "beauty filters," "augmented reality filters,"
- "body image," "body dissatisfaction," "body dysmorphia,"
- "adolescents," "teenagers," "youth,"
- "social media impact."

The search covered literature from January 2015 to December 2024.

- Inclusion Criteria

Studies were included if they:

1. Examined adolescents aged 10–19 years.
2. Focused on AI/AR filters or digital image manipulation tools.
3. Used empirical methods (qualitative, quantitative, or mixed).
4. Reported outcomes related to body image, self-esteem, dysmorphia, or social comparison.

- Exclusion Criteria

- Studies on adults or children under 10
- Non-peer-reviewed blogs or opinion pieces
- Studies without a clear link to AI or beauty filters

DISCUSSION & CONCLUSION

The convergence of AI-powered filters, algorithmic recommendation systems, and adolescent digital culture has created a complex landscape in which body image concerns are both amplified and

contested. Empirical research reviewed herein demonstrates that AI filter usage is closely linked to the internalization and expression of culturally gendered body ideals, increased social comparison, and heightened risk of body dissatisfaction—especially in visually centered, algorithm-driven platforms such as Douyin and TikTok (Lan & Huang, 2025; Chu et al., 2025; Ebert et al., 2023).

At the same time, adolescents exhibit agency in managing their digital self-presentation and privacy, employing creative strategies to navigate the pressures of algorithmic visibility and peer scrutiny. The emotional dynamics of online communities further mediate these processes, offering both risk and resource for youth grappling with body image concerns.

Future research and interventions must attend to the interplay of individual behavior, platform design, community norms, and broader sociocultural forces. By integrating psychological theory, computational analysis, and participatory engagement, scholars and practitioners can more effectively address the challenges and opportunities posed by AI filters in the lives of adolescents.

Gaps and Future Directions

While the existing literature provides valuable insights into the associations between AI filter usage and body image concerns, several gaps remain. First, most research is cross-sectional or correlational, limiting causal inference. Longitudinal and experimental studies are needed to clarify the directionality and mechanisms of observed relationships.

Second, there is a need for greater diversity in research populations. Much of the current evidence is drawn from Western or Chinese contexts, with limited attention to cultural, socioeconomic, and gender diversity. Intersectional approaches that consider how AI filter usage and body image concerns manifest across different identities and social locations are critical.

Third, the rapid evolution of platform features, AI capabilities, and adolescent digital practices necessitates ongoing research and adaptation. As filters become more sophisticated and deeply integrated into social media ecosystems, their psychological impact may shift in unforeseen ways. Continuous monitoring, participatory research with adolescents, and collaborative intervention development are essential.

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