

Exposure to AI-Generated Content, Body Image, and Self-Esteem Among Social Media Users: The Mediating Role of Body Image

Abdullah Shafqat

ask29936@gmail.com

Department of Psychology, Abdul Wali Khan University, Mardan

Muqaddas Anwar

Muqaddasanwar@awkum.edu.pk

Lecturer at Abdul Wali Khan University, Mardan

Shoukat Ali

pythonscraper.shoukat@gmail.com

Department of Psychology, Abdul Wali Khan University, Mardan

Corresponding Author: Abdullah Shafqat ask29936@gmail.com

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ABSTRACT

The rapid proliferation of AI-generated images, AI beauty filters, virtual influencers, and digitally synthesized appearance content on social media has raised concern about its psychological impact on users. This study examined the relationships among exposure to AI-generated content (AIGC), body image, and self-esteem, and tested whether body image mediated the AIGC–self-esteem relationship. A quantitative, cross-sectional, correlational design was employed with 300 social media users aged 18–30 (56.7% female), recruited via convenience sampling. AIGC exposure was measured with a self-developed scale, body image with the Body Image States Scale, and self-esteem with the Rosenberg Self-Esteem Scale. Data were analyzed using descriptive statistics, Cronbach's alpha, Pearson correlation, multiple regression, and mediation analysis. AIGC exposure was significantly negatively correlated with self-esteem ($r = -.46, p < .01$) and body image ($r = -.52, p < .01$), while body image was significantly positively correlated with self-esteem ($r = .58, p < .01$). Regression analyses showed AIGC exposure explained 21.2% of the variance in self-esteem and 27.0% of the variance in body image, while body image explained 33.6% of the variance in self-esteem. Mediation analysis confirmed that body image partially mediated the relationship between AIGC exposure and self-esteem (indirect effect $B = -0.214$, 95% CI $[-0.289, -0.146]$), with a significant direct effect remaining ($B = -0.205, p < .001$). Findings indicate that AI-generated appearance content undermines self-esteem both directly and indirectly through diminished body satisfaction, underscoring the need for digital literacy initiatives, AI-content transparency, and body image-focused psychological interventions.

Keywords: AI-generated content, body image, self-esteem, social media, AI beauty filters, virtual influencers, social comparison, mediation

INTRODUCTION

The emergence of artificial intelligence (AI) technologies has fundamentally altered the visual and informational environment in which individuals construct their sense of self. AI-generated content (AIGC)—synthetic images, videos, and audiovisual material produced by machine learning models—is now a routine feature of social media platforms such as Instagram, TikTok, and Snapchat, alongside dedicated AI-focused applications (Twenge & Campbell, 2019; Vogel et al., 2014).

Body image, an individual's subjective perception of and feelings about their physical appearance (Cash, 2011), is a well-established determinant of psychological well-being, with disturbance linked to depression, anxiety, disordered eating, and reduced quality of life (Grabe et al., 2008; Tiggemann & Slater, 2014). Traditional research examined how mass media—magazines, television, advertising—transmitted idealized appearance standards that fuel social comparison and body dissatisfaction (Groesz et al., 2002; Stice & Shaw, 1994); the rise of social media intensified this dynamic through constant peer and influencer exposure (Fardouly & Vartanian, 2015; Holland & Tiggemann, 2016).

AI-generated imagery represents a qualitatively new extension of these processes. Whereas conventional or digitally altered photographs require a human model, generative adversarial networks and diffusion models can fabricate hyperrealistic bodies and faces embodying unattainable standards of proportion, symmetry, and skin quality, while deepfake and AI beauty-filter technologies enable real-time, algorithmically driven appearance manipulation accessible across age and socioeconomic groups (Beilharz et al., 2021; Mills et al., 2018; Westerlund, 2019). Because such content need not originate from any real body, it may present standards more extreme, and more difficult to recognize as artificial, than earlier forms of media manipulation (Nightingale & Farid, 2022).

Self-esteem—the evaluative dimension of self-concept reflecting the degree to which one regards oneself positively (Rosenberg, 1965)—is closely tied to body image in models of self-evaluation (Harter, 1999; Tiggemann, 2011), with appearance-related self-discrepancy—the perceived gap between one's actual and internalized ideal appearance—identified as a key mechanism linking media exposure to diminished self-esteem (Higgins, 1987; Bessenoff, 2006). Despite theoretical grounds for expecting AIGC to carry stronger negative effects than traditional media (Fardouly et al., 2018; Mingoia et al., 2017), empirical research on its specific psychological consequences remains sparse, and existing social-media–body-image literature largely predates the widespread emergence of generative AI tools and is heavily skewed toward Western, female, adolescent samples (Barlett et al., 2008; Grabe et al., 2008).

The present study addresses these gaps by testing an integrated model in which body image mediates the relationship between AIGC exposure and self-esteem among a mixed-gender sample of adult social media users, guided by the following hypotheses:

- **H1:** AI-generated content exposure will be significantly negatively related to self-esteem.
- **H2:** AI-generated content exposure will be significantly negatively related to body image.
- **H3:** Body image will be significantly positively related to self-esteem.
- **H4:** Body image will significantly mediate the relationship between AI-generated content exposure and self-esteem.

METHOD

Design

A quantitative, cross-sectional, correlational design was used to examine associations among AIGC exposure, body image, and self-esteem at a single point in time.

Participants

Participants were 300 social media users aged 18–30, recruited via convenience sampling through social

media, university groups, and online communication channels. The sample comprised 41.7% male, 56.7% female, and 1.6% identifying as other; age was distributed across 18–22 years (32.0%), 23–27 years (52.7%), and 28–30 years (15.3%). Most participants held undergraduate (62.0%), graduate (28.0%), or postgraduate (10.0%) education. Daily social media use was concentrated at 4–6 hours (39.3%) and more than 6 hours (24.0%). Instagram (36.0%) and TikTok (31.3%) were the most-used platforms.

Measures

AI-generated content exposure was assessed with a self-developed scale measuring frequency of exposure to, engagement with, and appearance comparison against AI-generated images, AI beauty filters, virtual influencers, and digitally enhanced content (e.g., "I often see AI generated images on social media"; "AI generated images shape my thoughts about my appearance"), rated on a 5-point Likert scale. **Self-esteem** was measured with Rosenberg's (1965) 10-item Self-Esteem Scale, comprising positively and negatively worded items (reverse-scored as appropriate), assessing global self-worth. **Body image** was measured with the Body Image States Scale (Cash et al., 2002), assessing satisfaction with physical appearance and comfort with one's body. A brief demographic survey captured age, gender, education, daily social media use, preferred platform, and frequency of AIGC encounters.

Procedure

Data were collected via an online self-report survey (Google Forms). Participants were informed of the study's purpose and provided informed consent; participation was voluntary and anonymous, with no collection of identifying information, and participants could withdraw at any time.

Data Analysis

Data were analyzed in SPSS using descriptive statistics, Cronbach's alpha for reliability, Pearson correlation, and multiple regression to test predictive relationships. Mediation was tested via bootstrapped regression-based mediation analysis (5,000 resamples, 95% bias-corrected confidence intervals). Statistical significance was set at $p < .05$.

Ethical Considerations

The study followed standard ethical guidelines: informed consent was obtained from all participants, responses were anonymous and confidential, participation was voluntary with the right to withdraw at any time, and no personally identifying data were collected.

RESULTS

Descriptive and reliability statistics indicated relatively high AIGC exposure ($M = 3.72$, $SD = 0.81$, $\alpha = .84$), moderate self-esteem ($M = 2.91$, $SD = 0.74$, $\alpha = .81$), and moderate body image satisfaction ($M = 2.84$, $SD = 0.79$, $\alpha = .86$); all scales demonstrated good internal consistency ($\alpha > .80$).

Table 1: Descriptive Statistics, Reliability, and Correlations Among Study Variables (N = 300)

Variable	M	SD	α	1	2
1. AI-Generated Content Exposure	3.72	0.81	.84	—	
2. Self-Esteem	2.91	0.74	.81	-.46**	—

Variable	M	SD	α	1	2
3. Body Image	2.84	0.79	.86	-.52**	.58**

Note. ** $p < .01$, two-tailed.

AIGC exposure was significantly negatively correlated with self-esteem ($r = -.46$, $p < .01$) and body image ($r = -.52$, $p < .01$); body image was significantly positively correlated with self-esteem ($r = .58$, $p < .01$), the strongest bivariate association observed.

Table 2: Regression Analyses Predicting Self-Esteem and Body Image

Model / Predictor	B	β	t	p	R ²
Model 1: AIGC $\rightarrow$ Self-Esteem	-0.420	-.460	-8.950	< .001	.212
Model 2: AIGC $\rightarrow$ Body Image	-0.510	-.520	-10.490	< .001	.270
Model 3: Body Image $\rightarrow$ Self-Esteem	0.540	.580	12.276	< .001	.336

Note. $N = 300$ for all models. AIGC = AI-Generated Content Exposure.

AIGC exposure significantly predicted self-esteem ($\beta = -.46$, $p < .001$), accounting for 21.2% of variance, and body image ($\beta = -.52$, $p < .001$), accounting for 27.0% of variance. Body image significantly predicted self-esteem ($\beta = .58$, $p < .001$), accounting for 33.6% of variance.

Table 3: Mediation Analysis: Body Image Mediating AI-Generated Content Exposure and Self-Esteem

Path	B	SE	t	p	95% CI
a: AIGC $\rightarrow$ Body Image	-0.510	0.049	-10.490	< .001	[-0.606, -0.414]
b: Body Image $\rightarrow$ Self-Esteem	0.420	0.048	8.750	< .001	[0.326, 0.515]
Total effect (c): AIGC $\rightarrow$ Self-Esteem	-0.420	—	—	—	—
Direct effect (c'): AIGC $\rightarrow$ Self-Esteem	-0.205	0.046	-4.456	< .001	[-0.296, -0.115]
Indirect effect ($a \times b$)	-0.214	0.037	—	sig.	[-0.289, -0.146]

Note. $N = 300$. Bootstrap 95% CI based on 5,000 resamples. Indirect effect significant as the interval excludes zero.

Mediation analysis confirmed that AIGC exposure significantly predicted body image (Path a), which in turn significantly predicted self-esteem (Path b). The total effect of AIGC exposure on self-esteem was significant. With body image entered as a mediator, the direct effect of AIGC exposure on self-esteem remained significant but was substantially reduced, and the indirect effect through body image was significant, as the bootstrap confidence interval excluded zero. This pattern indicates that body image partially mediates the

relationship between AIGC exposure and self-esteem, supporting H4.

DISCUSSION

This study examined how exposure to AI-generated content relates to body image and self-esteem among 300 social media users, and tested body image as a mediating mechanism. All four hypotheses were supported.

The negative association between AIGC exposure and self-esteem ($r = -.46$) is consistent with social comparison theory (Festinger, 1954): AI-generated images, beauty filters, and virtual influencers often depict standards of attractiveness that are difficult or impossible to attain, and continuous comparison with such content appears to erode self-worth, aligning with prior findings on idealized social media content (Vogel et al., 2014; Chae, 2018; Choukas-Bradley et al., 2022).

The negative association between AIGC exposure and body image ($r = -.52$) is consistent with self-discrepancy theory (Higgins, 1987), which holds that psychological distress arises from a perceived gap between actual and ideal appearance. Because AI-generated images can depict flawless, digitally optimized features unconstrained by any real body, repeated exposure may widen this discrepancy more than traditional manipulated media, consistent with findings by Kleemans et al. (2018), Mills et al. (2018), Beilharz et al. (2021), and Harriger et al. (2022).

The positive association between body image and self-esteem ($r = .58$)—the strongest observed—supports objectification theory (Fredrickson & Roberts, 1997), which holds that appearance-focused environments encourage individuals to evaluate themselves primarily through physical appearance; positive body image may therefore function as a protective factor against self-esteem loss, consistent with Cash et al. (2002), Tiggemann and Williams (2012), and Fardouly et al. (2018).

Critically, body image partially mediated the AIGC–self-esteem relationship: AIGC exposure reduced body satisfaction, which in turn lowered self-esteem, while a significant direct effect remained. This indicates that body image is an important, but not the sole, pathway by which AIGC affects self-worth; other unmeasured mechanisms—social comparison orientation, appearance-ideal internalization, self-objectification, fear of negative evaluation, and perceived social acceptance—likely contribute additional explanatory variance. These findings extend prior literature by suggesting that AI-generated content may carry psychological risks comparable to, or exceeding, those of traditional digitally manipulated media, particularly because AI-generated faces are often indistinguishable from real ones (Nightingale & Farid, 2022), limiting the naturalistic recognition that might otherwise buffer comparison effects.

Implications

These findings support several intervention priorities. Educating social media users—particularly through school, university, and parental digital literacy programs—about the artificial origin of much appearance-related content may reduce unrealistic comparisons and protect body image and self-esteem. Platform-level transparency measures, such as labeling AI-generated or digitally altered content, could help users identify unattainable standards before internalizing them. Mental health practitioners working with clients presenting body dissatisfaction or self-esteem concerns should routinely assess AIGC exposure and consider interventions emphasizing body acceptance, reduced appearance comparison, and self-worth independent of physical appearance.

Limitations

The cross-sectional design precludes causal inference regarding the direction of the observed associations. Convenience sampling, drawn from social media and university networks, limits generalizability beyond active, digitally engaged young adults, and the 18–30 age restriction excludes adolescents and older adults who may respond differently to AIGC. Reliance on self-report measures introduces potential recall and social desirability bias. The AIGC exposure scale, while demonstrating good reliability ($\alpha = .84$), was self-developed and requires further psychometric validation across demographic groups and platforms. Finally, the study did not assess potential moderating variables—personality, mental health history, social comparison tendency, appearance-ideal internalization, gender, or cultural background—that may shape individual vulnerability to AIGC.

Future Directions

Future research should employ longitudinal and experimental designs to establish causal and temporal relationships between AIGC exposure and psychological outcomes, and directly compare the effects of AI-generated versus traditionally manipulated imagery. Studies should extend recruitment across broader age ranges, cultural contexts, and genders, and incorporate moderator variables such as appearance investment and social comparison orientation to clarify who is most vulnerable to AIGC's psychological effects.

CONCLUSION

This study demonstrates that exposure to AI-generated content is associated with lower self-esteem and poorer body image among social media users, and that body image partially mediates the relationship between AIGC exposure and self-esteem. As AI-generated imagery becomes increasingly realistic and pervasive, these findings underscore the urgency of digital literacy education, responsible AI-content labeling, and body image-focused psychological interventions to protect the well-being of social media users.

REFERENCES

- Barlett, C. P., Vowels, C. L., & Saucier, D. A. (2008). Meta-analyses of the effects of media images on men's body-image concerns. *Journal of Social and Clinical Psychology*, 27(3), 279–310. <https://doi.org/10.1521/jscp.2008.27.3.279>
- Beilharz, F. L., Burton, A. L., Wallis, A., & Touyz, S. (2021). Digitally manipulated media and its effects on body image and related concerns: Qualitative focus group research with young women. *Frontiers in Psychology*, 12, 614586. <https://doi.org/10.3389/fpsyg.2021.614586>
- Cash, T. F. (2011). Body image: Past, present, and future. *Body Image*, 1(1), 1–5.
- Cash, T. F., Fleming, E. C., Alindogan, J., Steadman, L., & Whitehead, A. (2002). Beyond body image as a trait: The development and validation of the Body Image States Scale. *Eating Disorders*, 10(2), 103–113.
- Fardouly, J., & Vartanian, L. R. (2015). Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology*, 9, 1–5. <https://doi.org/10.1016/j.copsyc.2015.09.005>
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140.
- Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, 21(2), 173–206.

<https://doi.org/10.1111/j.1471-6402.1997.tb00108.x>

- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134(3), 460–476. <https://doi.org/10.1037/0033-2909.134.3.460>
- Groesz, L. M., Levine, M. P., & Murnen, S. K. (2002). The effect of experimental presentation of thin media images on body satisfaction: A meta-analytic review. *International Journal of Eating Disorders*, 31(1), 1–16. <https://doi.org/10.1002/eat.10005>
- Harter, S. (1999). *The construction of the self: A developmental perspective*. Guilford Press.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94(3), 319–340. <https://doi.org/10.1037/0033-295X.94.3.319>
- Holland, G., & Tiggemann, M. (2016). A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image*, 17, 100–110. <https://doi.org/10.1016/j.bodyim.2016.02.008>
- Mills, J. S., Musto, S., Williams, L., & Tiggemann, M. (2018). "Selfie" harm: Effects on mood and body image in young women. *Body Image*, 27, 86–92. <https://doi.org/10.1016/j.bodyim.2018.08.007>
- Mingoia, J., Hutchinson, A. D., Wilson, C., & Gleaves, D. H. (2017). The relationship between social networking site use and the internalization of a thin ideal in females: A meta-analytic review. *Frontiers in Psychology*, 8, 1351. <https://doi.org/10.3389/fpsyg.2017.01351>
- Nightingale, S. J., & Farid, H. (2022). AI-synthesized faces are indistinguishable from real faces and more trustworthy. *Proceedings of the National Academy of Sciences*, 119(8), e2120481119. <https://doi.org/10.1073/pnas.2120481119>
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.
- Stice, E., & Shaw, H. E. (1994). Adverse effects of the media portrayed thin-ideal on women and linkages to bulimic symptomatology. *Journal of Social and Clinical Psychology*, 13(3), 288–308. <https://doi.org/10.1521/jscp.1994.13.3.288>
- Tiggemann, M. (2011). Sociocultural perspectives on human appearance and body image. In T. F. Cash & L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention* (2nd ed., pp. 12–19). Guilford Press.
- Tiggemann, M., & Slater, A. (2014). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, 46(6), 630–633. <https://doi.org/10.1002/eat.22141>
- Tiggemann, M., & Williams, E. (2012). The role of self-objectification in disordered eating, depressed mood, and sexual functioning among women. *Psychology of Women Quarterly*, 36(1), 66–75. <https://doi.org/10.1177/0361684311420250>
- Twenge, J. M., & Campbell, W. K. (2019). *The narcissism epidemic: Living in the age of entitlement*. Atria Books.

- Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. L. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, 3(4), 206–222. <https://doi.org/10.1037/ppm0000047>
- Westerlund, M. (2019). The emergence of deepfake technology: A review. *Technology Innovation Management Review*, 9(11), 39–52. <https://doi.org/10.22215/timreview/1282>