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Perceptions of A.I.-Enhanced Bodies: Autonomy, Authenticity, and Preferences Among Young Adults

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Abstract

This study explores the psychological impact of AI-generated and user-manipulated images on body image perception, particularly in the context of social media platforms. Focusing on young adults, the research examines their ability to identify A.I.-enhanced, user-enhanced, and unaltered images. Results indicate that participants can readily detect AI-enhanced images due to exaggerated features but struggle to identify subtle alterations from traditional photo-editing apps. Interestingly, participants showed a preference for minimally edited or unaltered images, despite faster detection of AI-enhanced images. Qualitative data suggest a divide in participants' attitudes toward AI manipulation: some expressed concern about its effects on body image and self-esteem, while others expressed indifference. These findings highlight the increasing difficulty in distinguishing authentic content from digital manipulation and raise important questions about rapidly evolving definitions of beauty and authenticity. Overall, findings underscore the need for media literacy interventions to address these challenges.

Keywords: Artificial intelligence; social media; Instagram; filters; beauty ideals; body image.

Introduction

In today's visually saturated culture, the use of filters on social media platforms has become a ubiquitous; it shapes user practices yet remains underexplored in academic literature. Emerging studies have primarily focused on the negative impacts of these filters on self-perception and body image, particularly among young users (El-Kssiri & Elalamy, 2024; Kumar & Agarwal, 2023; Schroeder & Behm-Morawitz, 2025). Research has demonstrated a negative correlation between the use of beauty filters and self-esteem and low body satisfaction in young adults (Bardsley, 2024; Lee & Lee 2021; Vendemia & DeAndrea, 2021). Much of the content shared and consumed on platforms like Instagram consists of images altered through beauty filters (Eshiet, 2020). These filters, which modify facial features such as eye size, lip fullness, and skin texture, may exacerbate insecurities related to one's natural appearance, particularly among women (Eshiet, 2020). While image enhancement can optimize visual appeal by accentuating certain features (Flores Bravo et al., 2024), frequent reliance on such tools is indicative of underlying self-esteem issues and discomfort with presenting an "unfiltered" self (Eshiet, 2020).

The psychological effects of social media on body image dissatisfaction are well-documented. Body image dissatisfaction, which is characterized by a negative evaluation of one's physical appearance, has been linked to the prevalence of idealized, heavily edited images on social media platforms (Fioravanti et al., 2022; Ryding & Kuss, 2020; Watson, 2022). As Jiotsa et al. (2021) highlight, social comparisons with these idealized images are associated with increased body dissatisfaction and a heightened pursuit of thinness. Social media interactions, particularly those centered on passive consumption and appearance-focused engagement, have been shown to significantly influence negative body image perceptions (Blackburn & Hogg, 2024; Ryding & Kuss, 2020). The tools used to edit these images, from basic filters to sophisticated photo-editing applications, allow users to alter specific physical features, further perpetuating unrealistic beauty standards (Ozimek et al., 2023).

In addition to user-driven editing tools, advances in Artificial Intelligence (AI) are revolutionizing the creation and manipulation of digital images. Generative A.I. systems, such as StyleGAN, DALL-E, and Adobe Firefly, have introduced a new era in visual culture by automating the processes of image generation and modification (Martín Prada, 2024). Unlike traditional photo-editing, where users determine the alterations, A.I. often autonomously makes modifications, leading users to notice imperfections they may not have previously identified (Ozimek et al., 2023). This shift blurs the boundary between artificial and natural, reshaping aesthetic standards and challenging long-standing definitions of beauty (Meyl, 2024). As A.I. technology becomes increasingly adept at generating hyper-realistic images, distinguishing between authentic and manipulated visuals is becoming increasingly difficult (Herbert, 2023). The growing inability to discern authenticity raises critical questions about the implications of A.I.-generated content on societal ideals of beauty. Studies such as Horváth (2022) suggest that while participants may prefer A.I.-enhanced images in professional contexts, they associate such

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alterations with negative emotions and consider them harmful to self-image and societal beauty standards. These findings underscore the complex dynamics between technological advancements and shifting perceptions of reality.

How A.I. influences our understanding of authenticity and the broader implications of A.I. use for how we define beauty are emerging research topics within the body image literature. As noted earlier, this issue is crucial due to the role A.I.-generated and manipulated images play in reinforcing unrealistic beauty standards. These ideals significantly influence individuals' perceptions of their own bodies and those of others, often leading to distorted self-perceptions. Distortions of body perception can, in turn, exacerbate body dissatisfaction and contribute to the development of perceptual disorders, such as body dysmorphia and eating disorders (Fioravanti et al.,2022; Jiotsa et al., 2021; Ozimek et al., 2023). Given the increasing integration of advanced A.I. tools into social media platforms, it is imperative to examine their psychological and societal impacts.

This study aims to assess young adults' ability to identify A.I.-enhanced images (Experiment 1) and explore their preferences for such images over traditional manipulations and non-manipulated images (Experiment 2). Additionally, the study seeks to contextualize participants' behavior by investigating their beliefs about A.I. in general and its use for body image enhancement through open-ended questions. By addressing these objectives, the research aims to provide critical insights into how A.I. influences perceptions of authenticity, beauty, and body image in the digital age. Based on these goals, the hypotheses for the experiments are as follows: In Experiment 1, participants are expected to identify A.I.-enhanced images more accurately and quickly than user-edited or unaltered images, with greater confidence in their responses. The pincel app was used for user-editing.

In Experiment 2, participants are expected to prefer A.I.-enhanced images and respond faster to them compared to user-edited and unaltered images, also with greater confidence when viewing A.I.-enhanced stimuli.

Methods

Experiment 1: Detection of A.I.-Enhanced Images in Cisgender Young Adult

Objective. The primary goal of this experiment was to investigate cisgender young adults' ability to detect A.I.-enhanced images of their own gender and the opposite gender. Additionally, the study explored how this detection ability might be influenced by the gender relationship between the perceiver and the stimuli.

Participants. A total of 24 participants (12 cisgender females) aged between 20 and 30 years (Mean age = 23, SD age= 1.52) took part in the study. The sample size was determined according to design specifications (see Huang & Ferreira, 2020 for a discussion on sample size) and prior studies by the authors using this paradigm. Nonetheless a sensitive analysis was conducted using G*Power indicating a minimum detectable effect size of f = 0.27**,** which corresponds to a medium effect. All participants had normal or corrected-to-normal vision and were recruited through social media posts and WhatsApp groups. All participants provided informed consent. The study protocol and consent forms were approved by the Ethics Committee of Fundación Favaloro (Approval number CBE 940/21). Inclusion criteria for the final sample included being between the ages of 20 and 30, identifying as cisgender, and the absence of medically diagnosed body image or eating disorder. Participants received no compensation for their involvement.

Materials and Procedure. The study was pre-registered at https://doi.org/10.17605/OSF.IO/GC65A. Participants first completed a brief sociodemographic questionnaire via Google Forms. After completing the questionnaire, they were redirected to an online experimental platform (Pavlovia.org) to participate in the main experiment. All procedures were conducted in person under the supervision of a researcher.

Sociodemographic Questionnaire. The questionnaire collected data on age, education level, place of birth, current residence, sex, gender identity, history of body image and/or eating disorders, and social media usage. Social media use was operationalized in terms of frequency of use, content uploading, content editing, and specific use of platforms such as Instagram and TikTok.

Figure 1: Type of manipulations: unaltered (center picture) user-edited (left picture) and A.I.-enhanced (right picture).

Open-Ended Questions. After completing the sociodemographic questionnaire, participants were asked four open-ended questions to assess their beliefs and knowledge about artificial intelligence: What does artificial intelligence mean to you? What positive aspects do you associate with its use? What negative aspects do you associate with its use? What are your thoughts on people using A.I. to manipulate their photos?

Stimuli Set. The stimuli used in this study were obtained and validated in a prior study (see Flores et al., 2025 for a

description). The A.I. employed to manipulate anatomical features was the "Pincel App" (created by Martim Ramos; https://pincel.app), which was chosen due to its ability to provide detailed manipulation of body anthropometrics. The A.I. was programmed to follow specific instructions for editing each image (i.e., "enlarge breasts," "flatten the stomach," "thicken legs" for female images, and "increase biceps," "add pectorals," "add abs" for male images) aligning with the prevailing beauty ideal (McComb & Mills, 2022; Voges et al., 2019). For manual edits the same commands were follow and gender specific apps were used: the "Perfect Me" app (Shenzhen Xihutangmaoyi Co., Shenzhen, China) for female images and the "Man-Like" app (Beautiful Photo Editor Studio, Hong Kong) was used for male images (see Figure 1).

Filter Detection Task. Participants completed a computer-based task in which they were asked to sit upright with the screen positioned 45 cm from their eyes and at the center of their visual field. The researcher provided instructions before the task and participants completed 8 practice trials to familiarize themselves with the task. The experiment was conducted using Psychopy (Peirce et al., 2022) and administered via Pavlovia.org.

The task utilized a forced-choice paradigm. In each trial, participants were presented with an image at the center of the screen and asked to identify whether the image had been A.I.-enhanced. Participants responded by pressing the left arrow key if they believed the image was A.I.-enhanced, or the right arrow key if they thought the image had not been enhanced. After each response, a black fixation cross appeared for 3 seconds before the next trial began (see Figure 2). Participants completed 144 randomized experimental trials, with 12 trials for each body type (female and male), each trial presented in three versions: unaltered, user-edited, and A.I. enhanced (centered and mirrored). Following the detection task, participants were asked to rate their confidence in their responses on a scale from 0 to 100, with 0 indicating no confidence and 100 indicating complete certainty.

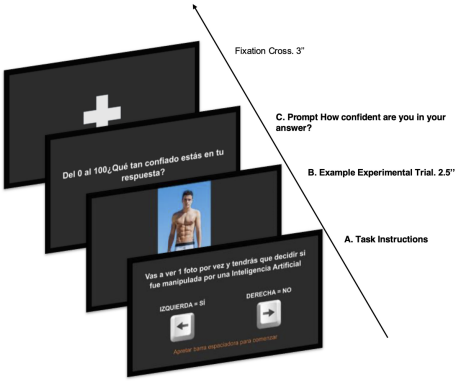

Figure 2: Pictorial depiction of the experimental task.

Results

Experimental Task

Accuracy (% of correct responses) and Reaction times (RT) were analyzed in a repeated measures ANOVAs with type of manipulation (unaltered, user-edited, and A.I. enhanced and gender of the stimuli (female and male) as within-subject factors, and participant's gender as a between-subject factor. Results for RT showed a significant interaction between type of manipulation and stimuli's gender [$F(2,44)=19.86$, $p=0.001$, $n_p^2= 0.039$]. Tukey post-hoc comparisons indicated that participants faster in responding to A.I. enhanced female stimulus compared to unaltered imaged (Female A.I.-enhanced: $M=1.40$ sec., $SD=0.26$ sec.; Female unaltered: $M=1.55$ sec., $SD=0.26$ sec.) [$t(22)=3.90$, $p=0.009$] and compared to user-edited female stimulus (Female user-edited: $M=1.54$ sec., $SD=0.23$ sec.) [$t(22)=3.857$, $p=0.010$]. Participants also responded faster when looking at A.I.-enhanced male stimulus compared to unaltered stimulus (Male A.I.-enhanced: $M=1.07$ sec., $SD=0.25$ sec.; Male unaltered: $M=1.45$ sec., $SD=0.26$ sec.) [$t(22)=8.868$ $p<0.001$] and compared to user-edited male stimulus ($M=1.46$ sec., $SD=0.25$ sec.)[$t(22)=11.637$, $p=0.001$].

Results of accuracy analyses showed a significant 3-way interaction between type of manipulation, gender of the stimuli and participant´s gender [$F(2,44)=5.34$, $p=0.008$, $n_p^2=0.017$]. For a better understanding of these results, we ran again these interactions with the sample split according to participant´s gender. We found a significant interaction between type of manipulation and stimuli's gender for women [$F(2,22)=8.73$, $p=0.002$, $n_p^2=0.053$] and for men [$F(2,22)=19.23$, $p<0.001$, $n_p^2=0.130$]. Tukey post-hoc comparisons showed that women can more easily detect A.I.-enhanced female stimulus compared to unaltered stimulus (Female A.I.-enhanced: $M=0.91$, $SD=0.08$;Female unaltered: $M=0.50$, $SD=0.22$) [$t(11)=-5.13$, $p=0.003$] and compared to user-edited female stimuli's ($M=0.41$, $SD=0.16$)[$t(11)=-7.73$, $p<0.001$]. Women can also easily detect A.I.-enhanced male stimulus compared to unaltered stimulus (Male A.I.-enhanced: $M=0.94$, $SD=0.08$; Male unaltered: $M=0.72$, $SD=0.13$)[$t(11)=-4.14$, $p=0.015$], and compared to user-edited male stimulus ($M=0.31$, $SD=0.14$) [$t(11)=-10.01$, $p<0.001$]. And women, are more likely to identify better the unaltered stimulus compared to the user-edited stimulus (Male unaltered: $M=0.72$, $SD=0.13$; Male user-edited: $M=0.31$, $SD=0.14$) [t(11)=8.07, $p<0.001$]. Regarding men, Tukey post-hoc comparisons also showed that men can easily detect A.I.-enhanced male stimulus compared to unaltered male stimulus (Male A.I.-enhanced: $M=0.99$, $SD=0.01$; Male unaltered: $M=0.76$, $SD=0.12$) [$t(11)=-5.98$, $p<0.001$] and compared to user-edited male stimulus ($M=0.60$, SD=0.17) [$t(11)=-12.07$, $p<0.001$]. Men, are also more likely to identify better the unaltered stimuli compared to the user-edited stimuli (Male unaltered: $M=0.76$, $SD=0.12$; Male user-edited: $M=0.34$, $SD=0.17$) [$t(11)=8.52$, $p<0.001$]. When looking at female stimulus, men are better at detecting the unaltered female stimulus compared to user-edited (Female unaltered: $M=0.70$, $SD=0.18$; Female user-edited: $M=0.60$, $SD=0.17$) [$t(11)=3.83$, $p=0.026$]. When comparing both A.I. gender stimulus, men are more likely to detect the A.I.-enhanced male stimulus compared to the A.I.-enhanced female

stimulus (Male A.I.-enhanced: M=0.99, SD=0.01; Female A.I.- enhanced: M=0.83, SD=0.14) [$t(11)$=-3.87, p=0.024].

Correlation analyses were carried out to explore the relationship between accuracy and response confidence. A moderate positive correlation was found between accuracy of the unaltered male stimulus and their response confidence (r=0.49, p=0.014) and a moderate positive correlation was found between accuracy of A.I.-enhanced male stimulus and their response confidence (r= 0.41, p=0.044).

Qualitative Analyses

A content analysis was conducted for the open-ended questions in which many participants associated A.I. with information processing and content generation. This reflects a utilitarian understanding of A.I., where its role is to assist in managing or interpreting data, solving problems, and facilitating tasks. For example, a 21-year-old cisgender woman described A.I. as "a tool for generating and transforming information/content," while a 24-year-old cisgender man noted, "an instrument that analyzes various variables of reality to solve what the user presents to it."

Many participants emphasized A.I.'s potential to improve efficiency, aid people with disabilities, and enhance daily life. This suggests that participants see A.I. as a tool for augmenting human capabilities and addressing limitations. The frequent mention of reducing loneliness and improving accessibility indicates that A.I.'s social and assistive benefits are also recognized. A 22-year-old cisgender woman emphasized, "AI helps us stay informed, get things done faster, and some tools can be used in daily life." Another participant, also 22, noted, "It can assist people with limitations (e.g., devices that speak to blind individuals) and helps speed up processes that might take longer manually." A 23-year-old man underscored A.I.'s speed and efficiency: "Speed, efficiency, ease of access to information, and data production." Similarly, a 23-year-old cisgender man added, "AI helps solve problems that humans cannot resolve quickly." A 22-year-old cisgender man mentioned that "some people use it to communicate and not feel so lonely."

While A.I. is generally perceived as beneficial, participants mentioned significant concerns regarding its ethical implications, particularly around privacy, job security, and human autonomy. Their concerns focused on identity theft, replacement of human labor, and increased dependency. Participants also expressed anxiety about A.I.'s ability to disrupt professional roles and erode authentic social relationships. A 24-year-old cisgender woman expressed, "AI could replace professionals in roles that require human reason and will, which are irreplaceable." Another 22-year-old woman noted, "AI could get out of control; distinguishing reality from artificial creations would be difficult, and human contact and quality would be lost." A different 22-year-old woman raised concerns about identity theft and job replacement: "It's dangerous because of identity theft and the increasing replacement of human labor." A 26-year-old cisgender man warned, "People often depend on A.I. and fail to use it as a tool to verify information, which can cause discomfort. It can be hard to recognize, and its message is often overestimated." Another 26-year-old man noted, "AI spoils us into not thinking or working." Finally, a 22-year-old cisgender man emphasized the challenge of regulation: "Legislation will arrive too late, and A.I. often tries to replace real social relationships."

The responses to A.I. enhancement of photos was divided. Some participants viewed it negatively, seeing it as a threat to authenticity and self-acceptance, while others felt that individuals should have the freedom to manipulate their own images. A 24-year-old cisgender woman shared her concern: "It makes me sad because I believe we should be authentic when presenting ourselves to others. We should normalize being who we are and accepting each other." Conversely, a 22-year-old cisgender woman felt, "People should do whatever they want with their photos. Personally, I don't like showing something that isn't real as if it were." Three women agreed that photo manipulation creates unrealistic expectations and idealizations. Among the men, opinions varied as well. A 24-year-old cisgender man stated, "I don't think it's wrong as long as self-love and the sense of what makes us human aren't lost." Meanwhile, a 21-year-old cisgender man remarked, "I don't mind; I think everyone has their own reasons for doing it, as long as it doesn't harm others." A 23-year-old man suggested, "I think it should be prohibited or at least include a warning that it was edited with A.I.." A 26-year-old cisgender man expressed indifference: "I don't know anyone who has used it for their photos. Honestly, if they use it and like it, good for them." The contrast between views reflects broader societal debates about authenticity, self-presentation, and the role of technology in shaping personal identity. Those concerned with authenticity seem to believe that A.I.-enhancement undermines genuine self-representation, while those more permissive about photo manipulation prioritize personal freedom and individual choice. This division suggests that the use of A.I. in personal image editing is seen both as an opportunity for self-expression and as a potential contributor to unrealistic beauty standards.

Social Media Use

Responses to the sociodemographic questionnaire showed that men spend more hours in Instagram than women (Men: M=2.25, SD=2.0; Women:M=1.96, SD=1.15). All the participants, except for 2 men upload content to Instagram however women are most likely to edit the content. When it comes to Tik Tok, both genders spend the almost the same number of hours (Men:M=1.25, SD=1.92; Women:M=1.15, SD=1.63). Only 3 women upload content to Tik Tok, and its content tends to be edited.

Linear Regression Analyses

A multiple linear regression was performed for the responses obtained for performance and reaction time with age, time spent on Instagram and Tik Tok. Results showed that age significantly predicted the performance when seeing the unaltered female stimuli R^2= 0.381, $F(4,19)$= 2.92, p=0.011, the user-edited female stimuli R^2= 0.248, $F(4,19)$=1.56, p=0.025 and the user-edited male stimuli R^2=0.461,

$F(4,19)=4.07$, $p=0.010$; older participants were more successful in identifying the unaltered and user-edited images. Time spent on IG also significantly predicted performance when seeing the user-edited male stimuli $R^2=0.461$, $F(4,19)=4.07$, $p=0.042$

Experiment 2: Preferences Towards Types of Altered Images in Cisgender Young Adult

The aim of Experiment 2 was to determine participant´s preference for images that presented unaltered edition, edition by a human user, or AI-enhancement. This experiment employed the same paradigm and materials as Experiment 1, but asked participants to respond whether they liked the image presented on each trial and the assertiveness of their response.

Participants. 24 participants (12 cis females) ages between 20 and 30 (M= 24, SD= 2.54) participated in this study

Materials and Procedure. The procedures and materials used were the same as those in Experiment 1. The only difference was in the prompt, if they liked the picture, they pressed the left arrow and if not the right arrow.

Results

Experimental Task

Accuracy (% of correct responses) and Reaction times (RT) were analyzed in repeated measures ANOVAs with type of manipulation (unaltered, user-edited, and A.I-enhanced), and gender of the stimuli (female and male) as within-subject factors, and participant's gender as a between-subject factor. Results for RT showed a significant interaction between type of manipulation and stimuli's gender [$F(2,44)=15.075$, $p<0.001$, $n_p^2= 0.045$].Tukey post-hoc comparisons showed that participants responded faster when looking at A.I.-enhanced male stimulus compared to A.I.-enhanced female stimulus (Male A.I.-enhanced stimulus: $M = 1.14$ sec., SD= 0.28; Female A.I.-enhanced stimulus: $M = 1.42$ sec., SD=0.31) [$t(22)=5.830$, $p<0.001$]. Participants also responded faster to A.I.-enhanced male stimulus when comparing to unaltered male stimulus (Male A.I.-enhanced stimulus: $M = 1.14$ sec., SD= 0.28; Male unaltered stimulus: $M = 1.37$ sec., SD=0.31) [$t(22)=4.492$. $p=0.002$] and compared to male user-edited stimulus (M=1.33 sec., SD= 0.32) [$t(22)=5.468$. $p<0.001$].

Results for accuracy showed a significant interaction type of Manipulation and stimuli´s gender [$F(2,44)=8.230$, $p<0.001$, $n_p^2=0.028$] Post-hoc Tukey comparisons revealed an overall preference for unaltered female stimulus over female A.I.- enhanced stimulus (Female unaltered stimuli: M=0.65, SD= 0.24; Female A.I-enhanced stimuli: $M = 0.47$, SD=0.27) [$t(22)=3.713$, $p=0.013$] and a preference for male unaltered stimulus over male A.I.-enhanced stimulus (Male unaltered stimuli: $M = 0.51$, SD=0.29; male A.I-enhanced stimuli: $M = 0.09$, SD=0.08) [$t(22)=6.867$, $p<0.001$]. When it comes to type of manipulation, participants preferred the male user-edited stimulus over the male A.I.-enhanced stimulus (Male user edited-stimuli: $M = 0.36$, SD=0.28; male A.I.- enhanced stimuli: $M = 0.09$, SD=0.08)[$t(22)=5.232$, $p<0.001$]. However, when comparing gender of the stimuli and A.I-enhancement, participants preferred the female A.I.-enhanced stimulus in contrast to the male A.I.- enhanced stimulus (female A.I.- enhanced stimuli: M= 0.47, SD=0.27; male A.I.-enhanced stimuli: M= 0.20, SD=0.32) [$t(22)=6.784$, $p<0.001$].

To measure confidence in the answer, correlations were made between accuracy and response confidence. A moderate negative correlation was found between preference of the male A.I.-enhanced stimulus and their response confidence (r=-0.42, p=0.037).

Qualitative Analyses

Participants showed two distinct perspectives: half viewed A.I. as a tool for practical use, while the other half defined it as an algorithm focused on pattern recognition and prediction. This distinction reflects either a utilitarian understanding of A.I. as a functional tool or a more technical perspective on its inner workings. A 28-year-old cisgender woman defined A.I. as "correlational algorithms designed to find patterns and predict scenarios," while a 24-year-old cisgender woman described it as "a tool for quickly searching online information." A 25-year-old cisgender man emphasized A.I.'s dual nature: "AI is a tool, but it can also be misused."

As in Experiment 1, the primary positive themes centered around efficiency, speed, and time-saving, with participants emphasizing A.I.'s role in optimizing routine or repetitive tasks. A 23-year-old cisgender woman highlighted "saving time, obtaining responses quickly, and speed," while a 27-year-old cisgender man noted that A.I. "increases productivity in routine activities andA.I.ds decision-making." Participants expressed concerns about the lack of regulation, misinformation, dependency, and distortion of reality. A 28-year-old cisgender woman raised issues about the "absence of regulation, misinformation, and environmental cost," while a 21-year-old cisgender woman noted that "AI may not always be truthful." Others voiced fears of A.I.'s potential to erode critical thinking and creativity, with a 23-year-old cisgender woman worrying about job displacement: "I'm worried that A.I. could take my job."

Views were divided on A.I. enhancement of photos, reflecting complex attitudes toward authenticity and personal autonomy. Some saw it as harmless or even beneficial for self-expression, while others highlighted the potential harm to body image and self-esteem. A 22-year-old cisgender woman stated, "They can do it if they want," and a 29-year-old cisgender man added, "Minor touch-ups are fine, but overuse leads to unrealistic portrayals." A 21-year-old cisgender man agreed, "People are free to do whatever they want." However, concerns about mental health emerged. A 26-year-old cisgender woman noted, "It worries me; it causes dysmorphia," and a 23-year-old cisgender woman suggested that it reflects "insecurities or fears driving people to seek validation." A 25-year-old cisgender man warned, "For some, it might seem trivial, but for others with self-esteem issues or eating disorders, it's harmful." A 24-year-old cisgender man

cautioned that excessive use of A.I. to "disguise reality" could lead to an unhealthy escape from it.

Social Media Use

Responses to the sociodemographic questionnaire showed that women spend more hours in Instagram than men (Women=*M*=3.13, *SD*=1.23; Men=M=1.53, SD=0.92); 90% of the women upload content to Instagram versus a 50% of men, and women are more likely to edit the content. When it comes to Tik Tok, women spend more hours than men (Women=*M*=1.31, *SD*=1.69; Men=*M*=0.87, *SD*=1.08). 50% of women upload content to Tik Tok.

General Discussion

The primary objective of this study was to examine how social media users relate to body images manipulated to enhance features, either through conventional apps or A.I. resources. Visual detection of manipulation types was assessed using images of both thin and average-sized male and female bodies. As expected, participants were more likely to identify A.I.-enhanced images and exhibited faster reaction times when exposed to A.I.-enhanced images. This suggests that individuals can accurately discern when an image has been modified by artificial intelligence, likely due to the exaggerated features characteristic of A.I. enhancement. Previous research has demonstrated that A.I.-manipulated images often display exaggerated and disproportionate features—often sexualized—relative to the original body stimulus (Kenig et al., 2023). These unnatural characteristics likely aided participants in detecting the manipulated images more easily and with greater confidence.

An important additional finding was that participants were more adept at identifying unaltered images with high confidence than those edited by the user. Research on unedited, natural, and aesthetically "pure" images has shown that individuals tend to struggle with detecting subtle manipulations, such as changes in lighting or A.I.-generated alterations (Lavrence & Cambre, 2020; Flores Bravo et al., 2024; Lebrusán, 2024). A contemporary study suggests that people are increasingly susceptible to being misled by synthetic media in everyday contexts, highlighting a gap in human perceptual abilities to adequately defend against such manipulations (Di Cooke et al., 2024). This growing realism in digital imagery complicates the definition of "authentic" content, especially within the domain of social media platforms.

It remains uncertain whether people can truly detect the naturalness of images or if subtle retouching and manipulations go unnoticed, becoming internalized as accurate representations of a person's real appearance.In Experiment 2, contrary to expectations, participants demonstrated a preference for both unaltered photos and those edited by the user. Reaction time data mirrored findings from Experiment 1, showing faster responses to A.I.-enhanced stimuli. However, a negative correlation emerged between participants' assertiveness and their preference for A.I.-enhanced images, suggesting that higher levels of manipulation resulted in a decreased preference for such images. As mentioned earlier, A.I.-generated images tend to be unrealistic and often over-idealized (Kenig et al., 2023), which likely explains participants' aversion to these manipulated representations. Recent studies provide further support for the notion that users have a growing preference for authentic, minimally edited images in social media (Shoenber et al., 2020; van Driel & Dumitrica, 2021; Zhang et al., 2024) as it is perceived as relatable and more likely to encourage someone to consume that type of content or even engage in purchasing activities; which could explain how the time spent on Instagram predicted the detection of stimuli edited by a user. Similarly to age, as the preference for authentic images predominates among millennials (Kondakciu et al., 2021).

When participants were asked about their views on A.I. photo enhancement, two main perspectives emerged. Some expressed concern about its impact on body perception and self-esteem, while others showed acceptance of the retouching as long as it didn't harm others. The rise of A.I.-driven image enhancement is blurring the line between reality and digital fabrication. As A.I. tools improve rapidly, users may soon struggle to distinguish authentic images from those enhanced or entirely created by A.I. Without intervention, these tools could reinforce distorted cultural and social norms (Tremblay et al., 2020), potentially exacerbating body image issues (Ryding & Kuss, 2020). However, both quantitative and qualitative findings suggest that users are beginning to think more critically about the consequences of enhancing their social media appearances. Future research should incorporate a larger and more diverse sample, along with thematic analysis, to explore these findings in greater depth. The mixed responses about A.I. enhancement highlight a cultural tension between personal autonomy and the desire for authenticity in digital spaces. Further exploration could illuminate how A.I. affects self-perception and social interactions in digital media.

Conclusion

Overall, our findings suggest that participants were able to accurately detect A.I.-enhanced images, likely due to the exaggerated, superficial, and unrealistic nature of the alterations (Kenig et al., 2023). However, while participants easily identified unaltered images, they struggled with detecting manipulations made by user driven apps. This aligns with previous research on human vulnerability to subtle alterations (Di Cooke et al., 2024) and raises the question of whether individuals can consistently identify unaltered content in the current digital landscape.

As artificial intelligence continues to evolve by learning from the data we provide, it raises a critical question: could we, in turn, be influenced by A.I.? As A.I. systems adapt to the information they are exposed to, the boundaries of what is considered "authentic" may shift. This prompts an essential reflection on how A.I. advancements may redefine our understanding of reality and authenticity in the future. Perhaps, more importantly, it stresses the need for developing media literacy interventions that educate users on how to interact with social media visual content.

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