Relationship between social media use, healthy habits, and psychological factors related to body image perception in university students

Relación entre el uso de redes sociales, hábitos saludables y factores psicológicos relacionados con la percepción de la imagen corporal en estudiantado universitario

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Abstract

Introduction: Common social media behaviors, such as posting selfies and seeking validation through likes and comments, have been linked to increased body dissatisfaction. This can lead university students to adopt appearance-focused eating and physical activity habits, which can lead to emotional and cognitive problems and behavioral issues, such as eating disorders.
Objective: Examine the relationship between social media use, healthy habits and psychological factors linked to body image perception in university students.
Methodology: A cross-sectional, comparative and correlational study was designed with 519 university students from the University of Granada and the University of Malaga. Participants completed validated questionnaires. Data were analyzed using SPSS, according to Mann-Whitney U and Spearman test outcomes ($p = 0.05$).
Results: Women reported greater use of body image-related social media ($p < 0.001$) and greater internalization of the thinness ideal ($p = 0.039$), whilst men internalized the muscular ideal to a greater extent ($p < 0.001$). Physical activity was only associated with eating disorders in women ($p = 0.025$). Such disorders were related with body dissatisfaction, social pressure, internalization of aesthetic ideals, higher BMI and lower self-esteem in both sexes ($p < 0.05$).
Discussion and Conclusion: The study concludes that social media use, healthy habits and psychological factors related with body image perceptions are interconnected, with sex exerting an effect on these differences. It is recommended that educational interventions and strategies be implemented that, not only, promote healthy habits, but, also, address the factors uncovered in the present research.

Keywords

Social media use; healthy habits; body image; mental health; university students.

Resumen

Introducción: Comportamientos comunes en redes sociales, como publicar selfies y buscar validación a través de "me gusta" y comentarios, se han vinculado con mayor insatisfacción corporal. Esto puede llevar a los estudiantes universitarios a adoptar hábitos alimentarios y de actividad física centrados en la apariencia, lo que puede generar problemas emocionales, cognitivos y trastornos del comportamiento, como los trastornos de la alimentación.
Objetivo: Estudiar la relación entre el uso de redes sociales, hábitos saludables y factores psicológicos vinculados con la percepción de la imagen corporal en estudiantes universitarios.
Metodología: Se diseñó un estudio transversal, comparativo y correlacional con 519 estudiantes universitarios de la Universidad de Granada y la Universidad de Málaga. Los participantes completaron cuestionarios validados y los datos se analizaron con SPSS, utilizando pruebas de U de Mann-Whitney y Spearman ($p = 0.05$).
Resultados: Las mujeres reportaron mayor uso de redes sociales relacionadas con la imagen corporal ($p < 0.001$) y mayor internalización del ideal de delgadez ($p = 0.039$), mientras que los hombres internalizaron más el ideal de muscularidad ($p < 0.001$). La actividad física se asoció con trastornos alimentarios solo en mujeres ($p = 0.025$). Estos trastornos se relacionaron con la insatisfacción corporal, presión social, internalización de ideales estéticos, mayor IMC y menor autoestima en ambos sexos ($p < 0.05$).
Discusión y Conclusión: El estudio concluye que el uso de redes sociales, los hábitos saludables y los factores psicológicos relacionados con la percepción de la imagen corporal están interconectados, con diferencias de sexo. Se recomienda implementar intervenciones educativas y estrategias que no promocionen solo hábitos saludables, sino que también aborden estos factores.

Palabras clave

Redes sociales; hábitos saludables; imagen corporal; salud mental; estudiantes universitarios.

Introduction

Concern for the physical and mental health of Spanish university students has significantly increased over the past decades, in parallel with a rise in issues related with sedentary lifestyles, excessive screen time and inadequate diet. Recent studies continue to emphasize that promoting physical activity (PA) and adhering to a balanced diet, such as the Mediterranean diet (MD), are fundamental pillars for improving both physical and mental health in this population (García-Pérez et al., 2023).

However, despite dissemination attempts to communicate these benefits in recent years, PA levels remain insufficient. Indeed, 70.6% of Spanish youth do not meet recommended PA guidelines (Gasol Foundation, 2023), whilst 24.6% of university students are classified as being insufficiently active (Rodríguez-Romo et al., 2022). Similarly, Spanish youth engage in more and more screen time and initiate this activity at increasingly younger ages (Gasol Foundation, 2023). Further, adherence to healthy diets remains limited. For instance, in the last three years, 3.6% fewer young Spaniards report high MD adherence (Gasol Foundation, 2023), with only 24% of first-year university students following this diet at all (Cobo-Cuenca et al., 2019).

Given that such issues are known to persist over time, the mere dissemination of information appears to be insufficient. In this sense, it is essential to understand the psychological and social factors that hinder the translation of these recommendations into daily practice. One factor that may contribute to these challenges is the widespread use of social media, which has become a key socialization tool over the past decade. Currently, 66.8% of the global population uses digital platforms as their primary means of communication (Kemp, 2024).

Whilst such tools have undoubtedly brought benefits in social, professional and academic contexts, they have also been linked to negative consequences, especially amongst university students. According to Lavados-Romo et al. (2023), university students who spend more time staring at screens report worse perceptions of their quality of life. Specifically, the use of social media platforms such as Instagram and TikTok, which are dominated by visual content, has been closely associated with the promotion of unrealistic beauty ideals (Vandenbosch et al., 2022). These platforms provide a constant flow of images and messages that reinforce thinness as the ideal for women and muscularity for men, fostering those exposed to them to express excessive concern about their physical appearance (Carrotte et al., 2017).

Research has shown that behaviors typically engaged in on social media, such as posting selfies, editing photos and seeking validation through "likes" and comments, are associated with greater body dissatisfaction (Butkowski et al., 2019; Mills et al., 2018). These dynamics encourage university students to engage in PA and dietary behaviors that are driven more by appearance than by health. This can lead to emotional problems (e.g., appearance-related anxiety, low self-esteem) (Sicilia et al., 2022), cognitive issues (e.g., body surveillance) (Cohen et al., 2017) and behavioral disorders (e.g., eating disorders and dysfunctional exercise) (Cohen et al., 2018).

In Spain, approximately 6.7% of young people are estimated to suffer from an eating disorder, with prevalence being 2.5 times higher in women than in men (Sociedad Española de Médicos Generales y de Familia, 2018). Scientific literature indicates that these disorders are directly related with self-objectification, a phenomenon in which individuals treat their bodies as objects which, in turn, are evaluated primarily based on appearance through body comparisons (Giles et al., 2021).

Self-objectification has been found to be associated with variables such as body image anxiety, low self-esteem and body shame, perpetuating a cycle of dissatisfaction and harmful behaviors that negatively impact physical and mental health. According to the Tripartite Influence Model (Thompson et al., 1999), the negative effects of social media are not, solely, due to the use of these platforms, but, rather, the specific behaviors developed within them such as posting selfies, editing photos and constant exposure to content that reinforces unattainable beauty standards (Fardouly & Vartanian, 2016; Pan, 2023).These behaviors, not only, affect young people's mental health, but, also, hinder the adoption of healthy habits such as engaging in PA and following a healthy diet (Dimas et al., 2021).

While scientific evidence continues to support the promotion of PA and MD in order to improve physical and mental health, consideration of other factors, such as the impact of social media use and its psychological implications, remains limited, particularly in university populations. Understanding the way in which these factors interact is essential for designing effective and sustainable interventions. Thus, the

aim of the present study is to analyze the relationship between social media use, healthy habits and psychological factors related with body image perceptions among university students. This approach will help identify potential barriers and facilitators that may influence the adoption of healthy habits, contributing to the design of practical and sustainable strategies targeted towards university students.

Method

Participants

A cross-sectional, comparative (sex: men and women) and correlational study was conducted with an initial sample of 915 individuals. However, 396 participants were excluded due to: (a) incomplete questionnaire responses (n = 287) and (b) not meeting the inclusion criterion of being university students (n = 109). The final sample consisted of 519 participants, comprising 384 women (74%) and 135 men (26%), with a mean age of 21.14 years (SD = 3.26). Participants were enrolled at either the University of Granada or the University of Malaga (Spain). In terms of academic discipline, 64.2% came from Social and Legal Sciences, 10.6% from Health Sciences, 7.1% from Sciences, 6.4% from Arts and Humanities, and 4.2% from Engineering and Architecture, whilst the remaining 7.5% were postgraduate students.

Procedure

Prior to conducting the study, both the University of Granada and the University of Malaga (Spain) granted the research team permission to use their student distribution lists to disseminate study questionnaires (Qualtrics platform), accompanying explanations and informed consent forms via email. In this way sample selection was non-random with participants being recruited via convenience due to accessibility of the distribution list. In addition, in order to reach more university students, the survey was disseminated on social media (i.e. WhatsApp, Instagram and Twitter), indicating the principal inclusion criteria of being a university student in any field of study at the University of Granada or the University of Malaga. Participants who did not meet this criterion were subsequently excluded (n = 109). The study was conducted between May and October 2024. Participation was entirely voluntary and study processes adhered to ethical research standards. The Research Ethics Committee of the University of Granada approved the study (Approval No.: 4260/CEIH/2024). To incentivize participation, participants were given the opportunity to enter a €50 raffle, which was funded through the call 'Projects for UGR PhD students' with the Reference number PPJIB2023-084.

Instrument

Social media use

Selfie/video posting or viewing on social media was evaluated using the instrument conceived by Wang et al. (2021). Initially, participants were asked to report the frequency with which they posted their own selfies or videos or viewed others' selfies or videos on social media. The following items evaluated the extent to which respondents observe others' selfies by querying, "Do you thoroughly analyze the selfies/videos of others on social media?" and "Do you closely inspect comments and 'likes' pertaining to others' selfies/videos on social media?" Response choices ranged from 1 (very seldom) to 6 (multiple times daily). A summary mean index was calculated with higher scores representing greater amounts of selfie/video-viewing. The Cronbach alpha produced for this scale indicated acceptable reliability (α = .61).

Finally, selfie or video editing was assessed via three items that explored the use of appearance enhancing techniques prior to posting on social media. Participants reported the frequency with which they cropped parts of their photos, applied photo filters, or used photo editing apps. Responses were recorded on a five-point scale (1 = never, 5 = always) and a mean composite score was calculated with higher scores indicating a greater frequency of editing (Wang et al., 2021). The Cronbach alpha estimated for this scale indicated acceptable reliability (α = .60).

Healthy/Unhealthy factors

Physical Activity

An ad-hoc questionnaire created specifically for this study was employed to evaluate PA engagement. Total weekly time in hours spent engaged in PA was determined in line with responses to the question: "On how many days a week do you engage in PA or sports?" Please specify the number of hours you engaged on the days you marked 'Yes' and leave the days you marked 'No' empty (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday). The average number of hours engaged each week in such activities was considered. The Cronbach alpha produced for this scale indicated adequate reliability (α = .96).

Mediterranean diet

In order to evaluate MD adherence, the latest version of the KIDMED questionnaire, revised and tailored for use with Spanish populations (Altavilla et al., 2020), was administered. This is a self-report tool that was designed to assess MD adherence amongst children and teenagers. This survey comprises 16 questions, all of which are responded to through "Yes" or a "No" responses. Four of these items ae negatively framed with positive responses to these items being scored as -1. In contrast, positively framed items are scored as +1, in the case of affirmative replies, and as 0, in the case of negative replies. Overall scores ranged between -4 and 12. The Cronbach alpha calculated for this scale indicated acceptable reliability (α = .60).

Eating disorders

In order to evaluate the presence of eating disorders, the abbreviated version of the Eating Disorder Examination-Self-Report Questionnaire (EDE-Q) conceived by Fairburn and Beglin (1994), namely, the EDE-QS (2008), was administered. This tool defines binge eating and evaluates specific beliefs pertaining to fear of weight gain, dietary restrictions, and concern about body image, weight and eating habits. Participants rate 12 items (e.g., “Have you ever felt that you lost control over your eating while you were eating?”) along a scale that ranges from 0 (0 days) to 3 (6-7 days). Higher scores signify more disordered eating. The Cronbach alpha produced for this scale indicated adequate reliability (α = .91).

Body mass index

In order to determine body mass index (BMI) in participants, weight in kilograms (kg) and height in meters (m) were obtained via targeted questions included within the survey. BMI was determined in line with the equation: BMI = weight (kg) / height $(m)^2$. Participants were then categorized into groups according to standards set by the World Health Organization (2025): underweight (BMI < 18.5), normal weight (BMI ranging from 18.5 to 24.9), overweight (BMI ranging from 25.0 to 29.9) and obese (BMI ≥ 30). This index provided a standardized measure for evaluating the nutritional status and body composition of participants.

Psychological factors

Objectified body awareness

A version of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996) adapted for use with Spanish populations by Moya-Garófano et al. (2017) was administered. This tool comprises 24 items that are categorized into three factors, with each factor containing eight items: body surveillance (items 1, 3, 7, 9, 14, 16, 18 and 20) (e.g., “For me, comfort in clothing is more significant than emphasizing my body shape”), body shame (items 2, 5, 8, 11, 13, 15, 17 and 22) (e.g., “I feel bad about myself when I cannot manage my weight”) and beliefs about controlling appearance (items 4, 6, 10, 12, 19, 21, 23 and 24) (e.g., “Individuals cannot alter their natural physical appearance”). Respondents answered using a seven-point Likert scale, with 1 pertaining to "strongly disagree" and 7 corresponding to "strongly agree." Negatively framed items are recoded prior to scoring in order to maintain uniformity. Higher average scores for each given factor indicate higher levels of body surveillance (self-objectification), body shame and perceived need to control appearance, respectively. The Cronbach alpha calculated for this scale indicated good reliability (α = .73).

Sociocultural attitudes towards appearance

The Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) is a 22-item instrument designed to assess the degree of acceptance of Western cultural norms regarding physical appearance (Llorente et al., 2015). Responses are recorded along a five-point Likert scale ranging from "strongly

disagree" to "strongly agree." This questionnaire evaluates five factors related to sociocultural influences with three subscales pertaining to sociocultural pressures and two subscales targeting internalization. The sociocultural pressure subscales assess perceived influences from three social agents: parents (items 11, 12, 13 and 14), peers (items 15, 16, 17 and 18) and the media (items 19, 20, 21 and 22). The internalization subscales measure acceptance of sociocultural ideals regarding physical appearance according to two dimensions: thinness/low body fat (items 3, 4, 5, 8 and 9) and muscularity/athleticism (items 1, 2, 6, 7 and 10). Higher scores on each subscale indicate higher levels of the corresponding construct. The Cronbach alpha produced for this scale indicated adequate reliability (α = .92).

Social anxiety about appearance

The Spanish adaptation of the Social Physique Anxiety Scale (SPAS; Motl et al., 2000), validated for use with adolescents by Sáenz-Alvarez et al. (2013), was administered. This tool comprises seven items that evaluate social anxiety linked to physical appearance (e.g., “When around others, I feel uneasy about my body/image”). Responses were recorded along a five-point Likert scale that ranged from 1 (never) to 5 (always). The Cronbach alpha calculated indicated adequate reliability (α = .88).

Self-esteem

In order to evaluate self-esteem, the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was employed, specifically, the Spanish version adapted by Martín-Albo et al. (2007). This tool comprises 10 items, with participants expressing their agreement with each item via a four-point Likert scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Of the 10 items, five are positively framed and five are negatively framed. Total scores range from 0 to 30 with higher scores indicating greater self-esteem. The Cronbach alpha produced for this scale indicated acceptable reliability (α = .60).

Body dissatisfaction

The body perception scale conceived by Sørensen and Stunkard (1993) presents a visual instrument that was designed to evaluate body perceptions and satisfaction using a collection of silhouettes that depict various body sizes, ranging from extremely thin to extremely fat. Participants select two images, one which they believe to be the most accurate reflection of their current body and another which aligns with their ideal body. From this, the difference between perceptions and ideals can be gaged.

Sociodemographic characteristics

An ad-hoc questionnaire was developed which presented participants with questions regarding their age, sex, field of study and socioeconomic status. In terms of socioeconomic status, respondents were presented with a scale that ranged from 1 to 100 and posed the question: "Where do you position yourself according to your socioeconomic status or that of your closest relative? Indicate from 0 to 100 where you would place yourself according to your socioeconomic status, where 0 is maximum poverty and 10 is maximum wealth."

Data analysis

Data analysis was conducted using IBM SPSS statistical software, version 21.0. Sample distribution was analyzed using the Kolmogorov-Smirnov test. After confirming that data did not follow a normal distribution, the Mann-Whitney U test was performed to make group comparisons. Correlations were performed according to Spearman, with significance being set at p = 0.05.

Results

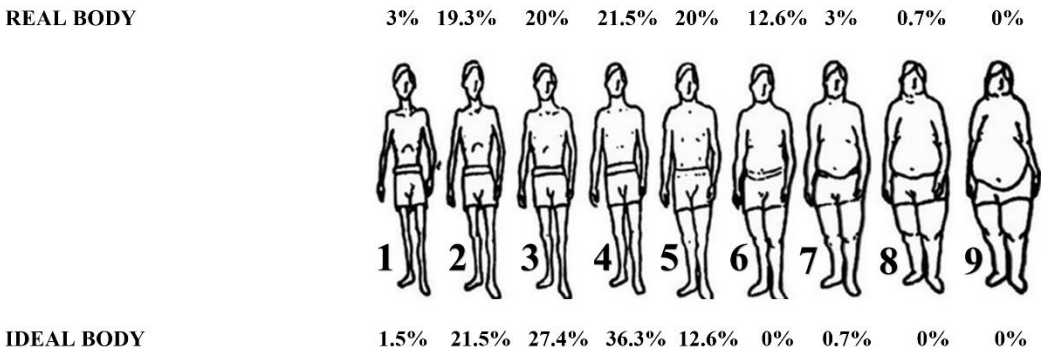
Descriptive characteristics of the study sample are presented in Table 1. The sample was made up of 384 women (74%) and 135 men (26%) with a mean age of 21.14 ± 3.26 years. Of the overall sample, 5.4% (n = 28) were classified as underweight, 65.5% (n = 340) as having a healthy weight, 22.5% (n = 117) as overweight and 6.6% (n = 34) as obese. Additionally, it is worth noting that 89 individuals (17.1%) reported wanting to gain weight, 308 (59.3%) expressed a desire to lose weight and 122 (23.5%) were content with their current weight. Finally, in terms of socioeconomic status (SES), 43 participants (8.3%) reported a low SES, 339 (65.3%) had a medium SES and 137 (26.4%) had a high SES.

Table 1. Sample characteristics

	Age	21.14 ± 3.26
Sex	Men	135 (26%)
	Women	384 (74%)
Body mass index	Underweight	28 (5.4%)
	Healthy weight	340 (65.5%)
	Overweight	117 (22.5%)
	Obesity	34 (6.6%)
Body dissatisfaction	Desire to gain weight	89 (17.1%)
	Desire to lose weight	308 (59.3%)
	Content	122 (23.5%)
Socioeconomic status	Low	43 (8.3%)
	Medium	339 (65.3%)
	High	137 (26.4%)

Male outcomes for the silhouette scale comparing male participants' 'real body' with the 'ideal body' they aspired to have are presented in Figure 1. In terms of 'real body,' the most frequently selected silhouettes were numbers 2 (19.3%), 3 (20%), 4 (21.5%) and 5 (20%), whereas, in terms of desired body, the most frequently selected silhouette was number 4 (36.3%), followed by number 3 (27.4%) and number 2 (21.5%). The distribution of 'real body' silhouettes appears to follow a normal pattern, with very few participants selecting the extremes of extremely thin (3%) or extremely large silhouettes (0%). However, in the case of 'ideal body' silhouettes, a preference for thinner figures is evident. A total of 93% of participants selected one of the first five silhouettes, whereas only 0.7% chose one of the last four.

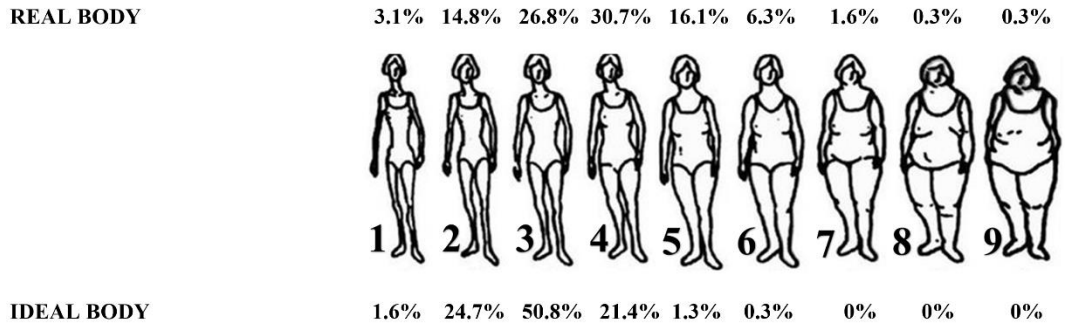
Figure 1. Male responses to the silhouette scale proposed by Sørensen and Stunkard (1993).



Font: Scale proposed by Sørensen and Stunkard (1993).

Female outcomes for the silhouette scale comparing female participants' 'real body' with the 'ideal body' they aspired to have are presented in Figure 2. In terms of 'real body,' the most frequently selected silhouettes were numbers 2 (14.8%), 3 (26.8%), 4 (30.7%) and 5 (16.1%), whereas, in terms of desired body, the most frequently selected silhouette was number 3 (50.8%), followed by number 2 (24.7%) and number 4 (21.4%). The distribution of 'real body' silhouettes appears to follow a normal pattern, with very few participants selecting the extremes of extremely thin (3.1%) or extremely large silhouettes (0.3%). However, in the case of 'ideal body' silhouettes, a preference for thinner figures is evident. Indeed, a total of 97% of participants selected one of the first five silhouettes, whereas only 0.3% chose one of the last four.

Figure 2. Female responses to the silhouette scale proposed by Sørensen and Stunkard (1993).



Font: Scale proposed by Sørensen and Stunkard (1993).

Table 2 presents outcomes pertaining to social media usage patterns, healthy and unhealthy behaviors, and psychological variables, according to sex. Analysis according to sex revealed significant differences regarding social media usage patterns. In this sense, women reported significantly higher frequencies when it came to posting selfies (M = 1.87, SD = 1.06 vs M = 1.39, SD = 0.74; p < 0.001), posting videos (M = 1.43, SD = 0.89 vs M = 1.21, SD = 0.64; p = 0.006), viewing selfies (M = 4.50, SD = 1.63 vs M = 3.85, SD = 1.72; p < 0.001), watching videos (M = 4.99, SD = 1.45 vs M = 3.93, SD = 1.91; p < 0.001), scrutinizing other selfies/videos (M = 2.45, SD = 1.32 vs M = 2.13, SD = 1.22; p = 0.009), cropping parts of their body in photos or videos (M = 1.97, SD = 1.10 vs M = 1.64, SD = 0.97; p<0.001), using photographic filters (M = 2.04, SD = 1.04 vs M = 1.70, SD = 0.91; p<0.001) and using editing applications (M = 1.88, SD = 1.11 vs M = 1.64, SD = 1.00; p = 0.019) than men.

Likewise, significant differences in healthy and unhealthy behaviors exist according to sex. Men reported significantly higher PA engagement (M = 0.93, SD = 0.71 vs M = 0.54, SD = 0.56; p < 0.001) than women. At the same time, women reported higher eating disorders scores (M = 21.79, SD = 8.03 vs M = 19.59, SD = 6.47; p = 0.011) than men. No significant differences were found with regards to MD adherence and screen time.

Finally, significant differences in psychological variables were found to exist as a function of sex. On the one hand, with regards to objectified body consciousness, women reported higher body surveillance scores (M = 4.42, SD = 0.95 vs M = 4.02, SD = 0.99; p < 0.001) than men. On the other hand, men reported greater beliefs around controlling appearance (M = 5.09, SD = 1.00 vs M = 4.64, SD = 0.95; p < 0.001) than women. No significant differences were found with regards to body shaming.

At the same time, with regards to sociocultural attitudes toward appearance, women scored higher in terms of social media pressure (M = 10.90, SD = 5.54 vs M = 8.16, SD = 4.53; p < 0.001) than men, whilst men scored higher on peer pressure (M = 6.25, SD = 3.24 vs M = 5.32, SD = 2.51; p < 0.001) than women. No significant differences were found with regards to family pressure. In addition, women scored higher than men in terms of thinness-ideal internalization (M = 13.40, SD = 6.16 vs. M = 11.99, SD = 5.15; p = 0.039), whilst men scored higher for muscularity ideal internalization (M = 13.91, SD = 5.44 vs. M = 10.55, SD = 4.56; p < 0.001) than women. No significant differences were found with regards to body ideal internalization.

Finally, women exhibited higher social physique anxiety (M = 21.75, SD = 5.42 vs. M = 18.36, SD = 5.90; p < 0.001) but no significant differences were found with regards to self-esteem and body dissatisfaction.

Table 2. Social media usage patterns, healthy and unhealthy behaviors, and psychological variables according to sex

			Total		Men		Women		*p value*
			M	SD	M	SD	M	SD	
On social media, how often do you…[1]	[1]…post selfies?		1.74	1.01	1.39	0.74	1.87	1.06	<0.001
	[1]…post videos?		1.37	0.84	1.21	0.64	1.43	0.89	0.006
	[1]…view selfies?		4.33	1.67	3.85	1.72	4.50	1.63	<0.001
	[1]…watch videos?		4.71	1.65	3.93	1.91	4.99	1.45	<0.001
	[1]…scrutinize other selfies/videos		2.37	1.30	2.13	1.22	2.45	1.32	0.009
	[1]…examine comments and numbers of likes?		1.95	1.22	1.91	1.14	1.97	1.24	0.860
	[1]…crop out body parts?		1.88	1.07	1.64	0.97	1.97	1.10	<0.001
	[1]…use photographic filters?		1.95	1.02	1.70	0.91	2.04	1.04	<0.001
	[1]…use editing applications?		1.81	1.08	1.64	1.00	1.88	1.11	0.019
Healthy and unhealthy behaviors	Physical activity		0.64	0.63	0.93	0.71	0.54	0.56	<0.001
	Mediterranean diet		5.20	2.64	5.13	2.65	5.22	2.64	0.844
	Eating disorders		21.22	7.71	19.59	6.47	21.79	8.03	0.011
	Screen time		5.60	2.39	5.53	2.23	5.62	2.44	0.853
Psychological variables	Objectified body consciousness	Body surveillance	4.31	0.97	4.02	0.99	4.42	0.95	<0.001
		Body shaming	3.53	1.33	3.33	1.18	3.60	1.37	0.057
		Appearance control beliefs	4.76	0.98	5.09	1.00	4.64	0.95	<0.001
	Sociocultural attitudes towards appearance	Family pressure	7.87	4.11	7.60	3.84	7.97	4.20	0.587
		Peer pressure	5.56	2.75	6.25	3.24	5.32	2.51	<0.001
		Social media pressure	10.19	5.42	8.16	4.53	10.90	5.54	<0.001
		Body ideal internalization	48.07	16.46	47.91	15.41	48.12	16.83	0.960
		Thinness-ideal internalization	13.03	5.94	11.99	5.15	13.40	6.16	0.039
		Muscularity-ideal internalization	11.41	5.02	13.91	5.44	10.55	4.56	<0.001
	Self-esteem		28.61	3.87	29.03	3.83	28.46	3.88	0.118
	Social physique anxiety		20.87	5.74	18.36	5.90	21.75	5.42	<0.001
	Body dissatisfaction		0.67	1.23	0.50	1.38	0.73	1.18	0.159

Note: M: Mean; SD: Standard deviation.

Table 3 presents correlation coefficients pertaining to relationships between mode of social media use and psychological variables. With regards to objectified body consciousness, body surveillance was positively associated with viewing selfies in men (r = 0.209, p = 0.015). Likewise, body surveillance was positively associated with examining the selfies/videos of others (r = 195, p = 0.024 and r = 105, p = 0.040) and cropping out body parts (r = 0.229, p = 0.008 and r = 0.193, p < 0.001) in both men and women. Body shaming was positively associated with posting selfies (r = 0.194, p = 0.025), posting videos (r = 0.207, p = 0.016) and viewing selfies (r = 0.178, p = 0.038) in men. Also, body shaming was positively associated with scrutinizing the selfies/videos of others (r = 0.264, p = 0.002 and r = 255, p < 0.001), reviewing comments and likes (r = 237, p = 0.006 and r = 150, p = 0.003), cropping out body parts in photos or videos (r = 0.237, p = 0.006 and r = 0.317, p < 0.001), using photographic filters (r = 0.212, p = 0.013 and r = 0.199, p < 0.001), and using editing applications (r = 0.199, p = 0.021 and r = 0.133, p = 0.009) in both men and women. Appearance control beliefs were negatively associated with scrutinizing the selfies/videos of others (r = − 0.194, p = 0.024 and r = − 0.123 p = 0.016), and evaluating comments and likes (r = − 0.199, p = 0.020 and r = − 0.139 p = 0.006) in both men and women. In addition, beliefs around controlling appearance were inversely associated with cropping out body parts (r = − 0.115, p = 0.024) in women.

With regards to sociocultural attitudes towards appearance, family pressure was positively associated with cropping out body parts (r = 0.251, p < 0.001) and with using photographic filters (r = 0.129, p = 0.012) in women. Peer pressure correlated positively with posting selfies (r = 0.170, p = 0.049) in men, and with scrutinizing other selfies/videos (r = 0.108, p = 0.035) and using editing applications (r = 0.114, p = 0.025) in women. In both men and women, peer pressure correlated positively with cropping out body parts (r = 0.210, p = 0.014 and r = 0.223, p < 0.001). Social media pressure was positively associated with scrutinizing the selfies/videos of others (r = 0.192, p = 0.026 and r = 0.180, p < 0.001) and cropping out body parts (r = 0.200, p = 0.020 and r = 0.335, p < 0.001) in both sexes. Only in men, social media pressure was positively associated with reviewing comments and likes (r = 0.169, p = 0.049).

The internationalization of body ideals was positively associated with viewing selfies (r = 0.186, p = 0.030) and with examining comments and likes (r = 0.221, p = 0.010) in men, whilst this same construct was positively associated with watching videos (r = 0.103, p = 0.044) and using photographic filters (r = 0.160, p = 0.002) in women. In both men and women, body ideal internationalization was positively

associated with posting selfies (r = 0.215, p = 0.012 and r = 0.136, p = 0.008), scrutinizing the selfies/videos of others (r = 0.258, p = 0.002 and r = 0.255, p < 0.001) and cropping out body parts (r = 0.297, p < 0.001 and r = 0.355, p < 0.001). The muscularity-ideal internalization was positively associated with posting selfies (r = 0.227, p = 0.008 and r = .161, p = 0.002), cropping out body partes (r = 211, p = 0.014 and r = 0.174, p = 0.001) and using editing applications (r = 0.179, p = 0.038 and r = 0.103, p = 0.044) in both men and women. The muscularity-ideal internalization was positively associated with posting videos (r = 0.101, p = 0.048), scrutinizing other selfies/videos (r = 0.166, p = 0.001), using photographic filters (r = 0.117, p = 0.022) in women. Moreover, thinness-ideal internalization was positively associated with viewing selfies (r = 0.236, p = 0.006 and r = 0.104, p = 0.041), scrutinizing other selfies/videos (r = 0.300, p < 0.001 and r = 0.298, p < 0.001), examining comments and likes (r = 0.205, p = and r = 0.116, p = 0.017), cropping out body parts (r = 0. 298, p < 0.001 and r = 0.278, p < 0.001) in both sexes. Only in women, thinness-ideal internalization was associated with posting selfies (r = 0.106, p = 0.038), watching videos (r = 0.144, p = 0.005) and using photographic filters (r = 0.167, p = 0.001).

Finally, self-esteem was negatively associated with scrutinizing other selfies/videos (r = − 0.208, p = 0.016 and r = − 0.108, p = 0.035), examining comments and likes (r = − 0.256, p = 0.003 and r = − 0.116, p = 0.023), cropping out body parts (r = − 0.219, p = 0.011 and r = − 0.167, p = 0.001) and using photographic filters (r = − 0.185, p = 0.032 and r = − 0.110, p = 0.031) in both sexes. Also, self-esteem was negatively associated with posting selfies (r = − 0.218, p = 0.011) in men. Furthermore, social physique anxiety was positively associated with watching videos (r = 0.169, p = 0.049 and r = 0.107, p = 0.036), scrutinizing other selfies/videos (r = 0.239, p = and r = 0.197, p < 0.001), examining comments and likes (r = 0.201, p = 0.020 and r = 0.125, p = 0.014) and cropping out body parts (r = 0.294, p = 0.001 and r = 0.292, p < 0.001) in both men and women. Social physique anxiety was positively associated with using photographic filters (r = 0.258, p = 0.003) and using editing application (r = 0.263, p = 0.002) in men. In addition, body dissatisfaction was positively associated with viewing selfies (r = 0.234, p = 0.006) and watching videos (r = 0.222, p = 0.010) in men. Also, body dissatisfaction was positively associated with scrutinizing other selfies/videos (r = 116, p = 0.022), cropping out body parts (r = 0.235, p < 0.001) and using photographic filters (r = 0.113, p = 0.027) in women.

Table 3. Correlations between the mode of social media use and psychological variables

On social media, how often do you…[1]		BSV	BSH	ACB	FP	PP	SMP	BI-I	MI-I	TI-I	SE	SPA	BD
[1]…post selfies?	M	0.060	0.194*	-0.071	0.158	0.170*	0.109	0.215*	0.227**	0.111	-0.218*	0.129	0.095
	W	0.096	0.039	0.087	0.082	0.092	0.073	0.136**	0.161**	0.106*	0.052	0.073	0.030
[1]...post videos?	M	-0.039	0.207*	-0.103	0.038	0.136	0.014	0.041	-0.006	0.005	-0.156	0.107	0.155
	W	0.020	-0.008	0.034	0.028	0.051	0.000	0.044	0.101*	0.033	0.031	-0.047	-0.013
[1]…view selfies?	M	0.209*	0.178*	0.036	0.054	0.092	-0.010	0.186*	0.122	0.236**	0.000	0.108	0.234**
	W	0.090	0.014	0.046	-0.053	-0.045	0.065	0.058	0.050	0.104*	0.028	0.064	0.039
[1]…watch videos?	M	0.095	0.120	0.109	0.021	-0.105	-0.007	0.094	0.058	0.163	-0.081	0.169*	0.222**
	W	0.037	0.093	0.028	-0.051	0.011	0.086	0.103*	0.073	0.144**	-0.068	0.107*	0.037
[1]…scrutinize other selfies/videos	M	0.195*	0.264**	-0.194*	0.117	0.101	0.192*	0.258**	0.145	0.300**	-0.208*	0.239**	0.082
	W	0.105*	0.255**	-0.123*	0.072	0.108*	0.180**	0.255**	0.166**	0.298*	-0.108*	0.197**	0.116*
[1]...examine comments and likes?	M	0.139	0.237**	-0.199*	0.082	0.131	0.169*	0.221**	0.127	0.205*	-0.256**	0.201*	0.000
	W	0.075	0.150**	-0.139**	-0.061	0.072	0.073	0.095	0.078	0.116*	-0.116*	0.125*	0.021
[1]…crop out body parts?	M	0.229**	0.237**	-0.024	0.154	0.210*	0.200*	0.297**	0.211*	0.298**	-0.219*	0.294**	0.170*
	W	0.193**	0.317**	-0.115*	0.251**	0.223**	0.335**	0.355**	0.174**	0.278**	-0.167**	0.292**	0.235**
[1]…use photographic filters?	M	0.133	0.212*	-0.169	0.081	0.156	0.154	0.154	0.122	0.153	-0.185*	0.258**	0.077
	W	0.065	0.199**	-0.082	0.129*	0.088	0.070	0.160**	0.117*	0.167**	-0.110*	0.079	0.113*
[1]…use editing applications?	M	0.078	0.199*	-0.099	0.069	0.056	0.120	0.130	0.179*	0.041	-0.144	0.263**	-0.015
	W	0.034	0.133**	-0.095	0.060	0.114*	0.032	0.096	0.103*	0.077	-0.043	0.065	0.089

Note: *p<0.05; **p<0.01. M: Men, W: Women, BSV: Body surveillance, BSH: Body shaming, ACB: Appearance control beliefs, FP: Family pressure, PP: Peer pressure, SMP: Social media pressure, BI-I: Body ideal internalization, MI-I: Muscularity-ideal internalization, TI-I: Thinness-ideal internalization, SE: Self-esteem, SPA: Social physique anxiety, BD: Body dissatisfaction.

Table 4 presents correlation coefficients pertaining to the relationships between psychological variables. Behaviors such as body surveillance, body shaming, family, peer and social media pressures, ideal

internalizations, and social physique anxiety and body dissatisfaction exhibited positive inter-correlations, whilst also being negatively correlated with appearance control beliefs and self-esteem.

However, it should be noted that positive correlations were only observed in women between body surveillance and body dissatisfaction (r = 0.214, p < 0.001), and family pressure (r = 0.166, p = 0.001), with the latter also being positively correlated with muscularity ideal internalization (r = 0.249, p < 0.001), and muscularity ideal internalization, in turn, being positively correlated with social media pressure (r = 0.316, p < 0.001), social physique anxiety (r = 0.238, p < 0.001) and body dissatisfaction (r = 0.250, p < 0.001). Also, only in women, negative associations are revealed between body shaming and appearance control beliefs (r = − 0.219, p < 0.001), with the latter, in turn, being negatively correlated with peer pressure (r = − 0.182, p < 0.001) and body ideal internalization (r = − 0.132, p = 0.010). Likewise, self-esteem was found to be negatively correlated with body surveillance (r = -0.266, p < 0.001), peer pressure (r = − 0.162, p = 0.001) and body dissatisfaction (r = − 0.226, p < 0.001). In contrast, only in men, family pressure emerged as being negatively correlated with appearance control beliefs (r = − 0.194, p = 0.024), whilst body surveillance was positively correlated with muscularity ideal internalization (r = 0.353, p < 0.001).

Table 4. Correlations between psychological variables

	BSV	BSH	ACB	FP	PP	SMP	BI-I	MI-I	TI-I	SE	SPA	BD
BSV	.	0.324**	-0.008	0.032	0.145	0.269**	0.401**	0.353**	0.423**	-0.162	0.314**	0.168
BSH	0.367**	.	-0.155	0.446**	0.476**	0.423**	0.701**	0.377**	0.649**	-0.459**	0.610**	0.370**
ACB	0.090	-0.219**	.	-0.194*	-0.136	-0.334**	-0.131	0.102	-0.067	0.258**	-0.355**	0.020
FP	0.166**	0.421**	-0.043	.	0.678**	0.264**	0.618**	0.157	0.405**	-0.221**	0.296**	0.302**
PP	0.048	0.375**	-0.182**	0.474**	.	0.297**	0.621**	0.227**	0.413**	-0.169	0.257**	0.172*
SMP	0.236**	0.532**	-0.161**	0.408**	0.305**	.	0.550**	0.097	0.381**	-0.280**	0.568**	0.177*
BI-I	0.265**	0.699**	-0.132**	0.623**	0.494**	0.775**	.		0.861**	-0.308**	0.491**	0.351**
MI-I	0.098	0.390**	-0.047	0.249**	0.275**	0.316**	0.681**	.	0.562**	-0.124	0.152	0.047
TI-I	0.308**	0.670**	-0.059	0.382**	0.275**	0.539**	0.858**	0.574**	.	-0.261**	0.485**	0.428**
SE	-0.216**	-0.494**	0.313**	-0.134**	-0.162**	-0.239**	-0.254**	-0.065	-0.266**	.	-0.491**	-0.077
SPA	0.352**	0.674**	-0.217**	0.332**	0.261**	0.545**	0.574**	0.238**	0.525**	-0.426**	.	0.291**
BD	0.214**	0.526**	-0.021	0.441**	0.340**	0.483**	0.608**	0.250**	0.586**	-0.226**	0.418**	.

Note: *p<0.05; **p<0.01. Correlations in men are presented above the diagonal, whilst correlations in women are presented below the diagonal. BSV: Body surveillance, BSH: Body shaming, ACB: Appearance control beliefs, FP: Family pressure, PP: Peer pressure, SMP: Social media pressure, BI-I: Body ideal internalization, MI-I: Muscularity-ideal internalization, TI-I: Thinness-ideal internalization, SE: Self-esteem, SPA: Social physique anxiety, BD: Body dissatisfaction, PA: Physical activity, MD: Mediterranean diet, ED: Eating disorders, BMI: Body mass index.

Table 5 presents correlation coefficients pertaining to the relationships between healthy and unhealthy behaviors and psychological variables. With regards to healthy and unhealthy behaviors, PA engagement was found to be positively correlated with different psychological variables including appearance control beliefs (r = 0.205, p = 0.017 and r = 107, p = 0.036) and muscularity ideal internalization (r = 0.401, p < 0.001 and r = 0.478, p < 0.001) in both men and women. Only in men, PA engagement was uncovered to be negatively correlated with social media pressure (r = − 170, p = 0.049) and social physique anxiety (r = − 0.173, p = 0.045). In contrast, only in women, PA engagement was revealed to be positively correlated with family pressure (r = 0.127, p = 0.012), peer pressure (r = 0.136, p = 0.008) and body ideal internationalization (r = 0.231, p < 0.001). Also in women, PA engagement was positively correlated with eating disorders (r = 0.115, p = 0.025).

In terms of MD adherence, negative associations were found in men with body surveillance (r = − 0.213, p = 0.013), whilst positive associations emerged in women with body model internationalization (r = 0.117, p = 0.021) and muscularity ideal internationalization (r = 0.219, p < 0.001).

With regards to eating disorders, positive associations were revealed with body surveillance (r = 0.338, p < 0.001 and r = 0.312, p < 0.001), body shaming (r = 0.681, p < 0.001 and r = 0.752, p < 0.001), family pressure (r = 0.412, p < 0.001 and r = 0.403, p < 0.001), peer pressure (r = 0.314, p < 0.001 and r = 0.355, p < 0.001), social media pressure (r = 0.371, p < 0.001 and r = 0.505, p < 0.001), body ideal internalization (r = 0.666, p < 0.001 and r = 0.688, p < 0.001), muscularity ideal internalization (r = 0.390, p < 0.001 and r = 0.369, p < 0.001), thinness ideal internalization (r = 0.644, p < 0.001 and r = 0.692, p < 0.001),

social physique anxiety (r = 0.534, p < 0.001 and r = 0.596, p < 0.001) and body dissatisfaction (r = 0.644, p < 0.001 and r = 0.692, p < 0.001) in both men and women. Eating disorders were inversely associated with self-esteem (r = -0.360, p < 0.001 and r = − 0.378, p < 0.001) in both men and women, whilst also being associated with appearance control beliefs only in women (r = − 107, p = 0.035). Further, eating disorders were found to be positively correlated with BMI (r = 0.316, p < 0.001 and r = 0.432, p < 0.001) in both men and women.

Finally, with regards to BMI, this measure was found to be positively correlated with social media pressure (r = 0.279, p < 0.001), muscularity ideal internalization (r = 0.164, p < 0.001) and social physique anxiety (r = 0.279, p < 0.001) only in women. However, BMI was found to be positively correlated with body shaming (r = 0.263, p < 0.001 and r = 0.373, p < 0.001), family pressure (r = 0.289, p < 0.001 and r = 0.419, p < 0.001), body ideal internalization (r = 0.242, p < 0.001 and r = 0.396, p < 0.001), thinness ideal internalization (r = 0.262, p < 0.001 and r = 0.306, p < 0.001) and body dissatisfaction (r = 0.667, p < 0.001 and r = 0.666, p < 0.001) in both sexes.

Table 5. Correlations between healthy and unhealthy behaviors and psychological variables

		BSV	BSH	ACB	FP	PP	SMP	BI-I	MI-I	TI-I	SE	SPA	BD	ED
PA	M	0.088	0.030	0.205*	-0.019	0.091	-0.170*	0.124	0.401**	0.021	-0.012	-0.173*	-0.101	0.075
	W	-0.087	0.061	0.107*	0.127*	0.136**	0.049	0.231**	0.478**	0.088	0.092	-0.037	0.021	0.115*
MD adherence	M	-0.213*	-0.109	0.040	-0.013	-0.099	-0.095	-0.106	0.011	-0.136	0.008	-0.146	-0.052	-0.094
	W	0.004	0.056	0.045	0.089	0.094	0.040	0.117*	0.219**	0.022	0.075	-0.058	0.025	0.026
ED	M	0.338**	0.681**	-0.128	0.412**	0.314**	0.371**	0.666**	0.390**	0.644**	-0.360**	0.534**	0.516**	.
	W	0.312**	0.752**	-0.107*	0.403**	0.355**	0.505**	0.688**	0.369**	0.692**	-0.378**	0.596**	0.594**	.
BMI	M	0.068	0.263**	0.068	0.289**	0.223**	0.009	0.242**	-0.006	0.262**	-0.030	0.035	0.667**	0.316**
	W	0.024	0.373**	-0.064	0.419**	0.315**	0.279**	0.396**	0.164**	0.306**	-0.093	0.279**	0.666*	0.432**

Note: *p<0.05; **p<0.01. Correlations in men are presented above the diagonal, whilst correlations for women are presented below the diagonal. M: Men, W: Women, BSV: Body surveillance, BSH: Body shaming, ACB: Appearance control beliefs, FP: Family pressure, PP: Peer pressure, SMP: Social media pressure, BI-I: Body ideal internalization, TI-I: Thinness-ideal internalization, MI-I: Muscularity-ideal internalization, SE: Self-esteem, SPA: Social physique anxiety, BD: Body dissatisfaction, PA: Physical activity, MD: Mediterranean diet, ED: Eating disorders, BMI: Body mass index.

Discussion

The aim of the present study was to analyze the relationship between social media use, healthy lifestyle habits and psychological factors related with body image perceptions in university students. Present findings reflect a complex interaction between examined variables, with notable differences between men and women.

Firstly, both men and women show a clear preference for thinner body shapes as ideal body forms, although this preference is more pronounced in women. Perceptions of "real" body image via silhouettes follow a more normalized distribution suggesting that, while most individuals have moderate body perceptions of themselves, societal ideals tend to favor slimmer figures (Swami, 2021). Moreover, the sex differences revealed reflect the way in which cultural norms affect men and women differently, with more demanding beauty standards tending to be present for women (Ramati-Ziber et al., 2020). This finding aligns with objectification theory, which posits that women are more likely to internalize societal beauty norms due to constant exposure to idealized representations in the media (Fredrickson & Roberts, 1997).

Along the same line, outcomes indicate that women exhibit social media usage patterns that are more oriented towards self-image, with a higher frequency of posting and viewing selfies and videos, as well as greater use of filters, editing applications and body cropping. These findings are consistent with those reported in previous studies that highlighted greater aesthetic pressure on women and stronger tendencies for women to manage their body image in digital settings (Åberg et al., 2020). Furthermore, women reported higher scores for eating disorders, body surveillance, social media-related pressure, internalization of the thinness ideal and social appearance anxiety, which reinforces the notion that digital settings may amplify body image concerns amongst females (Verrastro et al., 2020).

In contrast, men reported greater PA engagement, along with higher scores for appearance control beliefs, peer pressure and internalization of the muscular ideal, which reflects a body-related concern model that is more focused on physical performance and muscularity (White et al., 2020). These gender differences may also be influenced by the type of content that is consumed on social media. For instance, men are more exposed to fitness and strength-related content (Angrish et al., 2024), whilst women engage more with beauty and fashion-oriented media (Rodgers et al., 2024).

No significant sex differences were observed with regards to MD adherence, screen time, body shaming, family pressure, internalization of general body ideals, self-esteem and body dissatisfaction. These findings suggest that, whilst clear differences exist in certain areas related with body image and social media behavior, other aspects appear to remain stable regardless of sex.

In another sense, one of the most relevant findings of the present study pertained to the association of social media use with body surveillance, body shaming and internalization of aesthetic ideals. This may be explained by the fact that young adults find themselves at a critical stage of identity formation with social media becoming a key space for self-expression and social comparison (Noon et al., 2021). Constant exposure to idealized body images generates pressure to conform to unrealistic standards, thus increasing self-consciousness about physical appearance and, in some cases, leading to unhealthy behaviors such as excessive image modification and avoidance of displaying certain body parts (Lee-Won et al., 2020).

Additionally, in women, BMI was positively correlated with social media pressure, muscularity ideal internalization and social physique anxiety, which indicates that higher BMI may intensify social appearance concerns (Titchener & Wong, 2015). In both sexes, BMI was correlated with body shaming, family pressure, internalization of body ideals and body dissatisfaction, which reinforces the role of weight-related factors in body image perceptions.

In this context, social pressure plays a crucial role. The need for validation through likes and comments appears to reinforce concerns about appearance, particularly amongst women, who exhibit a stronger tendency towards body dissatisfaction when exposed to these factors (Seekis et al., 2020). This sex difference may be attributed to the historical objectification of the female body, making women more likely to evaluate their appearance according to external standards.

In contrast, men exhibit a stronger association between body surveillance and internalization of the muscularity ideal, which suggests that, although appearance pressure affects both sexes, men tend to focus more on strength and muscle size as indicators of status and attractiveness (White et al., 2020). Moreover, the strong association between BMI and body dissatisfaction highlights the impact of weight-related concerns on self-perceptions, which underscores the need to address body diversity and stigma in digital and social contexts.

Another important aspect pertains to the relationship between PA engagement and beliefs about appearance. Whilst PA engagement is associated with a greater sense of control over one's image in both men and women, it is only positively correlated with disordered eating behaviors in women (Gonzaga et al., 2024). This finding suggests that some women may engage in exercise compulsively as a means of altering their bodies, in this way, reinforcing the influence of social pressure and the internalization of aesthetic ideals. In contrast, for men, PA does not appear to be linked to negative behaviors in the same way with PA instead being associated with the pursuit of a muscular physique.

The impact of social pressure is also evident through the lower self-esteem observed amongst those who are more exposed to these factors. Constant comparisons with others on social media seem to undermine positive self-perceptions, particularly in individuals who frequently monitor their bodies or seek approval through photos and videos (Midgley et al., 2021). Women appear to be more vulnerable to such negative effects, which is likely due to the greater sociocultural pressures they face regarding their appearance (Buote et al., 2011).

Conversely, although social pressure also affects men, it appears to operate in a different way with greater emphasis being placed on muscularity as a symbol of success and masculinity (Lidborg et al., 2022). Interestingly, some studies indicate that self-esteem can be improved when social media use is directed towards body-positive content or communities that promote diverse body representations

(Cohen et al., 2019). This speaks to the potential of more constructive digital interactions to counteract the negative effects of appearance-based social comparisons.

Finally, the relationship uncovered between MD adherence and body image provides an interesting perspective. Whilst adherence to this dietary pattern is associated with lower body surveillance in men, in contrast, in women it correlates with the internalization of body ideals. This suggests that some women may adopt healthy eating habits, not necessarily for wellbeing, but as a strategy of conforming to aesthetic standards (Nazzal et al., 2022). Additionally, given the strong correlation between BMI and body dissatisfaction, dietary habits may also be influenced by weight concerns, particularly amongst women, who often receive conflicting messages about body acceptance and maintaining an ideal physique.

Study limitations

The present study has certain limitations that should be considered when interpreting findings.

First, its cross-sectional design prevents causal relationships from being established between social media use, healthy habits and psychological factors related with body image perceptions. Longitudinal or experimental studies could provide a deeper understanding of these relationships.

Second, the use of convenience sampling may limit generalizability of findings to the overall university population. Future studies should expand the sample and include universities from different sociocultural contexts to enhance representativeness.

Additionally, the present study relies on self-reported data, which may be subject to social desirability bias or recollection errors. In particular, PA was assessed through an ad hoc questionnaire designed to estimate average daily PA engaged in over a typical week. Although this tool shows excellent internal consistency ($\alpha = 0.96$), it has not been subjected to the same rigorous validation processes as other standardized tools such as the IPAQ. Inclusion of objective measures to assess PA or more detailed dietary analyses could improve data accuracy.

Regarding the internal consistency of some scales, although certain instruments (e.g., KIDMED, RSES) yielded borderline values ($\alpha \approx .60$), this is considered acceptable according to established psychometric standards (Nunnally, 1978; DeVellis & Thorpe, 2021) .

Future perspectives

Future studies should analyze the way in which psychological factors influence the effectiveness of interventions aimed at promoting healthy habits, such as PA engagement and MD adherence. Self-esteem, social anxiety, self-efficacy and perceived control over appearance may affect the adoption and maintenance of such habits, acting as either barriers or facilitators.

As observed in the present study, body dissatisfaction and internalization of unrealistic aesthetic standards may be negatively related with diet and exercise. Likewise, factors such as stress and social comparisons on social media may hinder adherence to healthy lifestyle habits. Thus, future research should also investigate the age at which these processes become more pronounced in order to design earlier and more effective intervention strategies.

Additionally, interventions should promote PA engagement and adherence to a healthy diet from a health-centered perspective rather than one focused solely or primarily on appearance. Simultaneously, educational programs on the appropriate use of social media should be designed, which emphasize the importance of sharing health-related content rather than reinforcing unattainable beauty standards. It is also essential to teach young individuals to critically assess idealized and commercialized posts that perpetuate unrealistic body image expectations.

Future health promotion interventions should, therefore, not only focus on informing about the benefits of PA and the MD, but, also, address the psychological factors that may act as barriers or facilitators in the adoption of these habits. A more comprehensive approach would enable the design of more effective and personalized strategies tailored to the needs of university students.

Practical implications

The present findings point to the importance of implementing gender-sensitive approaches in both prevention and intervention programs. Given the differing pressures experienced by men and women, with

thinness ideals predominating amongst women and muscularity ideals amongst men, tailored health education strategies should be adapted accordingly to address their specific psychological vulnerabilities.

In practical terms, universities and health services could benefit from incorporating screening tools that detect early signs of body image dissatisfaction, eating disorders, or appearance-related anxiety, particularly in students with high exposure to social media. These tools would enable timely support and referrals to psychological or nutritional services.

Likewise, campaigns and initiatives aimed at promoting PA and healthy eating among university students should shift the focus away from appearance and towards emotional, social, and mental well-being. Programs that frame health behaviors in terms of enjoyment, stress management, or social connection may foster more sustainable engagement.

Finally, training in digital literacy and social media resilience should form part of the academic curriculum. Encouraging students to reflect on the content they consume and create may help reduce the negative effects of appearance-based comparison and promote more realistic, diverse and empowering narratives around the body.

Conclusions

The main conclusion of the present study is that social media use, healthy lifestyle habits and psychological factors related with body image perceptions are deeply interconnected among university students, with notable differences between men and women.

Key findings indicate that women are more vulnerable to social media-related aesthetic pressures, reporting greater body dissatisfaction, body surveillance, and internalization of thinness ideals. In contrast, men tend to focus more on muscularity and performance-oriented appearance control. Nonetheless, both women and men are influenced by social pressure and idealized body representations, which are associated with negative self-perceptions, particularly as BMI increases.

Present findings underscore the importance of addressing psychological vulnerabilities in health promotion strategies. Specifically, interventions should adopt a gender-sensitive and holistic approach, shifting the focus from appearance towards emotional well-being, body functionality, and critical media literacy.

Practical applications include the implementation of early screening tools for body image-related issues, the promotion of "body positive" digital environments, and the development of programs that frame PA and diet in terms of intrinsic motivation and mental health benefits rather than aesthetics.

Finally, the present study suggests the need for future research on educational interventions and health promotion strategies that, not only, encourage PA engagement and healthy diet consumption, but, also, address the psychological factors that act as barriers or facilitators to the adoption of these habits.

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