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Social media and body image dissatisfaction among nursing undergraduate students in Southern Brazil

Redes sociais e insatisfação com a imagem corporal em graduandas de enfermagem no Sul do Brasil

Redes sociales e insatisfacción con la imagen corporal entre estudiantes de enfermería del Sur de Brasil

Marcos Hirata Soares ¹ORCID: 0000-0002-1391-9978

Fernanda Pâmela Machado ¹ORCID: 0000-0002-2446-1341

Maria Fernanda Santos Silva ¹ORCID: 0009-0009-6687-3270

¹ Universidade Estadual de Londrina, Centro de Ciências da Saúde, Departamento de Enfermagem, Londrina, Paraná, Brazil.

ABSTRACT

Objective: To analyze the perceived influence of social networks on body image satisfaction among nursing students. **Methods:** An analytical, cross-sectional study conducted with nursing students from two universities in southern Brazil in 2023. Data collection included sociodemographic and health variables, the BSQ scale, the Stunkard Silhouette Scale (ESS), and a measure of perception of social networks. A significance level of 5% and a sample power of 99% were adopted for 175 participants. **Results:** The mean BMI was 24.42; 54.3% did not engage in physical activity; 45.2% were moderately concerned about their body image. A linear association was observed between increased BMI and the perception that social networks influence the search for body image satisfaction. **Conclusion:** The pursuit of an ideal body influenced by social networks can generate dissatisfaction, especially among women with negative feelings about their body image. **Descriptors:** Body dissatisfaction; Students, Nursing; Body image, Mental Health; Psychometrics

RESUMO

Objetivo: Analisar a influência percebida das redes sociais na satisfação com a imagem corporal de graduandas de Enfermagem. **Métodos:** Estudo analítico, transversal, realizado com graduandas de Enfermagem de duas universidades no sul do Brasil, em 2023. A coleta de dados incluiu variáveis sociodemográficas, de saúde, a escala BSQ, a Escala de Silhuetas de Stunkard (ESS), e uma medida de percepção sobre redes sociais. Adotou-se nível de significância de 5% e poder amostral de 99% para 175 participantes. **Resultados:** A média do IMC foi de 24,42; 54,3% não praticavam atividade física; 45,2%

**Corresponding
author**



Marcos Hirata Soares
E-mail:
mhirata@uel.br

estavam moderadamente preocupados com sua imagem corporal. Observou-se uma associação linear entre aumento do IMC e a percepção de que as redes sociais influenciam a busca por satisfação com a imagem corporal. **Conclusão:** A busca por um corpo ideal influenciada por redes sociais pode gerar insatisfação, especialmente entre mulheres com sentimentos negativos sobre sua imagem corporal.

Descritores: Insatisfação corporal; Estudantes de Enfermagem; Imagem corporal; Saúde Mental; Psicometria

RESUMEN

Objetivo: Analizar la influencia percibida de las redes sociales en la satisfacción con la imagen corporal de las estudiantes de enfermería. **Métodos:** Estudio analítico transversal realizado con estudiantes de enfermeira de dos universidades del sur de Brasil en 2023. La recopilación de datos incluyó variables sociodemográficas, de salud, la escala BSQ, la Escala de Siluetas de Stunkard (ESS) y una medida de percepción sobre las redes sociales. Se adoptó un nivel de significación del 5 % y un poder muestral del 99 % para 175 participantes. **Resultados:** El IMC medio fue de 24,42; el 54,3 % no practicaba actividad física; el 45,2 % estaba moderadamente preocupado por su imagen corporal. Se observó una asociación lineal entre el aumento del IMC y la percepción de que las redes sociales influyen en la búsqueda de la satisfacción con la imagen corporal. **Conclusión:** La búsqueda de un cuerpo ideal influenciada por las redes sociales puede generar insatisfacción, especialmente entre las mujeres con sentimientos negativos sobre su imagen corporal.

Descriptores: Insatisfacción corporal; Estudiantes de Enfermería; Imagen corporal; Salud Mental; Psicometría

INTRODUCTION

Body image is a multidimensional concept that encompasses perceptions, attitudes, thoughts, and behaviors regarding one's own body, which may be positive or negative⁽¹⁾. In recent years, digital social media especially platforms such as Instagram® and Facebook® have become powerful environments for social comparison, directly influencing how individuals, particularly young women, perceive and relate to their bodies⁽²⁻³⁾.

Body image dissatisfaction is defined as a negative perception of weight or body shape and constitutes a risk factor for eating disorders, depression, anxiety, low self-esteem, and health-harming behaviors⁽⁴⁾. Such dissatisfaction may occur even among women whose body mass index (BMI) falls within the range considered healthy, characterizing the so-called "normative discontent," in which most believe they would be more attractive if they were thinner⁽⁵⁾.

By prioritizing idealized aesthetic standards, social media promote practices and narratives that reinforce the pursuit of a "perfect" body, often through restrictive diets and non-recommended procedures. Studies indicate that intensive use of these platforms is related to body dissatisfaction among health sciences undergraduates, including in Brazil and other countries⁽⁶⁻⁷⁾.

Additionally, evidence suggests that the type of content consumed on social media such as manipulated images and videos portraying unrealistic standards directly affects the emotional state and self-esteem of female university students⁽⁸⁾. Therefore, it is relevant to investigate how nursing undergraduates perceive this influence, since as future health professionals they are also embedded in this sociotechnical context.

OBJECTIVE

To analyze the perceived influence of social media on body image satisfaction among nursing undergraduates.

METHODS

Ethical aspects

All ethical principles related to research involving human beings were respected. The study began after authorization and approval by the Research Ethics Committee, in accordance with Resolution No. 466/2012 of the Brazilian National Health Council (CAAE No. 69911023.5.0000.523). Inclusion criteria required participants to be female and older than 18 years. In accordance with Brazilian legislation, participants were not remunerated.

Study design and sample

This was a cross-sectional study, which enables the observation of associations between variables at a single point in time, without establishing cause-and-effect relationships. This design is widely used in public health research to identify factors associated with conditions of interest in specific populations. The manuscript was prepared in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Sampling was non-probabilistic by convenience. Participants were invited through the universities' social media channels and subsequently scheduled for interviews at flexible times to accommodate their academic activities. Data collection took place between February and June 2023.

Study protocol

Female undergraduate students aged ≥ 18 years, regularly enrolled in Nursing programs at two universities (one public and one private) in southern Brazil, who agreed to participate by signing the informed consent form, were included. Students on medical leave or absent on the day questionnaires were distributed were excluded. Data collection included sociodemographic and health-related variables (age, academic year, physical activity, diet, weight, height, and social media use). Weight and height were self-reported for BMI calculation, an approach with adequate reliability in young adults and feasible for field studies with university samples.

Sociodemographic and health-related variables were collected: age, academic year, physical activity, diet, weight, height, and social media use. The self-reported method for obtaining weight and height information for calculation of body mass index (BMI) has reliability equivalent to in-person measurement, thereby eliminating the need for weighing and height assessment⁽⁹⁾.

Body dissatisfaction was assessed using the Body Shape Questionnaire (BSQ)⁽¹⁰⁾, adapted and validated for the Brazilian population⁽¹¹⁾. The instrument comprises 34 self-administered items on a 6-point Likert scale, yielding a total score from 0 to 204. For analysis, scores were dichotomized: 0–110 indicates body satisfaction and 111–204 indicates body dissatisfaction.

The Stunkard Figure Rating Scale (SFRS)⁽¹²⁾ was used to assess discrepancies between perceived silhouette (PS) and desired silhouette (DS). The scale presents nine figures representing different body shapes, and participants indicated those that best represented their current perception and their body ideal⁽¹³⁾.

The nine figures range from 1 (thinnest) to 9 (largest). Participants choose the current silhouette (PS) and the desired silhouette (DS). From these selections, the Body Image Dissatisfaction Index was calculated ($BIDI = PS - DS$), in which $BIDI > 0$ indicates desire to reduce silhouette, $BIDI = 0$ indicates satisfaction, and $BIDI < 0$ indicates desire to increase silhouette.

This tool is widely used to assess weight status and, more recently, body image perception in individuals with obesity. It accurately evaluates weight status and body image perception, with a BMI-assigned silhouette cut-off of 6 for obesity and 5 for overweight⁽¹⁴⁾.

To measure Perceived Influence of Social Media (PISM), a 12-item questionnaire was developed using a Visual Analog Scale (VAS), ranging from 0 (no influence) to 100 (total influence). The VAS format has also shown good performance in psychosocial studies⁽¹⁵⁾. The instrument was evaluated by five expert judges in mental health, with more than 10 years of experience and doctoral-level training. Inter-rater agreement, calculated using Fleiss' Kappa, was 0.76 ($p < 0.001$).

Analysis of results and statistics

Required statistical power was calculated using IBM SamplePower v.3.0, resulting in 99% power for a sample of 175 participants. Statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS)® v.26 for the Jonckheere–Terpstra linear trend test and cross-tabulations, and using JASP (statistical analysis software developed by the University of Amsterdam) for reliability analyses.

The Jonckheere–Terpstra test is recommended for comparing ordered population medians and is the best choice when identifying significant differences among the medians of more than two ordered populations (16). Non-parametric tests were used for ordinal variables and parametric tests for interval variables. A 5% significance level was adopted.

RESULTS

A total of 175 female undergraduate nursing students were interviewed. Of these, 94 (53.6%) were enrolled in the public institution and 81 (46.3%) in the private institution. Table 1 presents the sociodemographic characteristics of the students. Mean age was 21.6 years (range: 17–49 years).

Table 1 indicates that 54.3% of students did not engage in physical activity. Mean BMI was 24.42 (SD=3.88; 95% CI 23.83–25.00), ranging from 15 kg/m² to 35 kg/m². As shown in Table 2, internal consistency measures suggest evidence of reliability for the scales applied.

Table 1: Sociodemographic characteristics of female undergraduate nursing students. Londrina, Paraná, Brazil, 2023

Variables	N°	%
Academic year		
3rd year	59	33,71
2nd year	47	26,85
1st year	43	24,57
4th year	26	14,85
Self-reported race		
White	100	57,14
Brown	39	22,28
Not declared	36	20,57
Institution		
Public	94	53,71
Private	81	46,28
Use of weight-loss medication		
Yes	11	6,28
No	164	93,71
Engagement in physical activity		
Yes	80	45,71
No	95	54,28
On a special diet		
Yes	23	13,14
No	152	86,85

Table 2: Internal consistency measures for Body Shape Questionnaire (BSQ) and Perceived Influence of Social Media (PISM) scales. Londrina, Paraná, Brazil, 2023

	BSQ	PISM
Cronbach's alpha coefficient	0.938 (0.924-0.950) 0.901 (0.877 – 0.921)	
McDonald's omega (95% CI)	0.939 (0.923-0.951)	0.902 (0.873-0.924)
Mean correlation between items (95% CI)	0.307 (0.258-0.360)	0.430 (0.362- 0.500)
Mean (95% CI) and standard deviation	3.177 (3.017-3.357);1.114	58.435 (54.825-62.045); 24.476

Body silhouette selection

Regarding the SFRS, no agreement or correlation was observed between desired and current silhouettes. With respect to current silhouette selection, 59.6% of students were classified as eutrophic based on BMI. Underestimation of body image was defined as follows: 49.15% of participants classified as overweight selected the four thinnest silhouettes, and 50% of participants classified as obese selected thin silhouettes (1–5), suggesting underestimation of body silhouette among students with BMI ≥ 30 kg/m².

Overestimation of current silhouette was observed in 3 (1.71%) students with BMI < 20 kg/m² and in 16 (9.14%) students with BMI < 30 kg/m², resulting in an overall overestimation rate of 10.85%.

Regarding desired silhouette selection, 50% of participants classified as underweight indicated a desire for silhouette 4. Among eutrophic participants, 41.2% selected silhouette 3 and 32.9% selected silhouette 2. Among those classified as overweight, 41.4% selected silhouette 2 and 31.3% selected silhouette 3. Among those classified as obese, 44.4% selected silhouette 2 and 27.8% selected silhouette 3. Finally, 5.71% of students with BMI < 20 kg/m² selected silhouettes 4–9, and 8.57% of students with BMI < 30 kg/m² selected silhouettes 6–9.

We calculated the Body Image Dissatisfaction Index (BIDI) as current silhouette minus desired silhouette (higher values indicate desire to reduce silhouette; 0 = satisfied; negative values = desire to increase). Using this classification, 67.4% of students wished to reduce (BIDI > 0 ; 118/175), 13.1% were satisfied (BIDI = 0; 23/175), and 19.4% wished to increase (BIDI < 0 ; 34/175). Practically, a median of 1 indicates that, for most participants, the ideal silhouette was one unit below the perceived silhouette on the Stunkard figures.

Table 3 shows that 75% of students classified as underweight reported no concern about their body image. Among eutrophic students, 46% reported moderate concern; among overweight students, 61.5% reported moderate concern; and only 22.2% of students classified as obese reported severe concern about their weight. The mean BSQ score was 105.36 (SD = 35.16), ranging from 34 to 191.

As indicated in Table 4, Spearman correlation coefficients revealed values of 0.401 between BMI and perceived silhouette, -0.170 between BMI and desire for a thinner silhouette, and 0.209 between body image dissatisfaction and perceived influence of social media on the pursuit of body image satisfaction ($p < 0.001$).

Perceived Influence of Social Media was measured using 12 items on a Visual Analog Scale (0–100); the final score corresponds to the mean of the items (0 = no influence; 100 = maximum influence). In the present study, mean PISM was 58.4 (95% CI 54.8–62.0; SD 24.5), indicating a moderate intensity of perceived influence.

The Jonckheere–Terpstra test is recommended over the Kruskal–Wallis test because it compares and detects significant differences among more than two population medians when these medians are ordered. Accordingly, we investigated the degree of association among body image dissatisfaction, distorted self-perception, and perceived influence of social media on body self-image, as a function of BMI.

Table 3: Body mass index (BMI) and body image satisfaction (BSQ) among female nursing undergraduates. Londrina, Paraná, Brazil, 2023

			BMI (%)				Total
			Underweight	Eutrophic	Overweight	Obesity	
BSQ	No concern	Count (%)	6	29	9	1	45
		BSQ	13.3	64.4	20.0	2.2	100.0
		BMI	75.0	33.3	15.3	5.6	26.2
		Total	3.5	16.9	5.2	0.6	26.2
	Mild concern	Count (%)	1	29	15	6	51
		BSQ	2.0	56.9	29.4	11.8	100.0
		BMI	12.5	33.3	25.4	33.3	29.7
		Total	0.6	16.9	8.7	3.5	29.7
	Moderate concern	Count (%)	1	23	19	7	50
		BSQ	2.0	46.0	38.0	14.0	100.0
		BMI	12.5	26.4	32.2	38.9	29.1
		Total	0.6	13.4	11.0	4.1	29.1
	Severe concern	Count (%)	0 _b	6	16	4 _b	26
		BSQ	0.0	23.1	61.5	15.4	100.0
		BMI	0.0	6.9	27.1	22.2	15.1
		Total	0.0	3.5	9.3	2.3	15.1
Total		Count (%)	8	87	59	18	172
		BSQ	4.7	50.6	34.3	10.5	100.0
		BMI	100.0	100.0	100.0	100.0	100.0
		Total	4.7	50.6	34.3	10.5	100.0

Table 4: Table 4. Pearson correlation matrix among Body Shape Questionnaire (BSQ), Stunkard Figure Rating Scale (SFRS), body mass index (BMI), and Perceived Influence of Social Media (PISM). Londrina, Paraná, Brazil, 2023

	BSQ	ESS-SP*	ESS-SD**	BMI	PISM
BSQ	***	0.332 ($p < 0.001$)	-0.152 ($p = 0.045$)	0.366 ($p < 0.001$)	0.209 ($p < 0.001$)
ESS-SP*	***	***	0.055 ($p = 0.471$)	0.401 ($p < 0.001$)	-0.009 ($p = 0.903$)
ESS-SD**	***	***	***	-0.170 ($p = 0.027$)	-0.009 ($p = 0.906$)
BMI	***	***	***	***	0.099 ($p = 0.193$)
PISM	***	***	***	***	***

Legend: *Perceived silhouette; **Desired silhouette.

Table 5: Linear trend observed for the effects of body image dissatisfaction (BSQ), perceived influence of social media (PISM), and body silhouette (SFRS) on BMI. Londrina, Paraná, Brazil, 2023

	BSQ	PISM	SFRS
Statistic	4.967	2.176	5.163
Significance	$p < 0.001$	$p < 0.05$	$p < 0.001$

As BMI increased, participants' body image dissatisfaction, desire for a thinner-looking silhouette, and perception that social media influence the pursuit of body image satisfaction also tended to increase, as indicated by the magnitudes revealed by the test.

DISCUSSION

The findings indicate associations among BMI, body dissatisfaction (BSQ), silhouette perceptions (SFRS), and perceived influence of social media (PISM). However, these results should be interpreted in light of structural determinants that shape university life: full-time

academic workloads, concurrent employment (especially in private institutions), financial pressure, and food environments that favor ultra-processed products because they are cheaper and more convenient. Such conditions constrain real opportunities for physical activity and healthy eating and therefore do not support a moralizing, individual-centered interpretation. This framing is consistent with the literature describing the entanglement of sociocultural pressures and the political economy of health in the field of body image⁽¹⁷⁻¹⁸⁾.

Although 54.3% of students reported not engaging in physical activity, 45.7% did report doing so (Table 1). Thus, we describe a high prevalence of inactivity, but we avoid generalizing that the student body as a whole “has a sedentary lifestyle.” Interpretation should consider constraints related to time, cost, and infrastructure in everyday university life.

A study of 348 university students in Mato Grosso do Sul⁽¹⁹⁾ reported similar data, indicating that 40.3% of students exhibited sedentary lifestyles. This pattern is concerning because these are future nurses, who will also be expected to promote healthy eating and encourage physical activity⁽¹⁸⁾.

In the present study, according to Table 3, 50.6% of students were classified as eutrophic. In Brazilian studies with university samples, eutrophy rates are often higher, such as 69.5% in Mato Grosso do Sul⁽¹⁹⁾ and 64.5% in São Paulo⁽²⁰⁾, suggesting regional heterogeneity and contextual differences between samples. Among Chinese female adolescents aged 12–15 years⁽²¹⁾, 53.3% reported a desire to be thinner, which aligns with international findings of pressure toward thinness at early ages.

In our sample, we observed overestimation of current silhouette in 10.85% of students, particularly among those classified as overweight; among those with BMI <20 kg/m², overestimation was rare. These data reinforce that body perception and nutritional status do not perfectly overlap, highlighting the role of sociocultural norms and digital content in shaping expectations about the body.

In other countries, the studies consulted as part of the present investigation reported better performance in terms of achieving an adequate BMI in a healthy manner among students, although the factors explaining such differences in comparison with some national studies remain uncertain⁽¹⁹⁻²⁰⁾. In Portugal, a study with a sample of students⁽²²⁾ (equivalent to high school) found that 81% of participants (n=296) were classified as eutrophic. In India⁽²³⁾, a study with 358 university students found that 83.8% were classified as eutrophic.

In Turkey⁽²⁴⁾, a study with 400 university students found that 80.3% were classified as eutrophic, whereas in Oman⁽²⁵⁾, among 351 medical students (88% women), 63% were classified as eutrophic; among these, 64.7% of eutrophic women were dissatisfied with their body image. Thus, the proportion of eutrophic participants observed in the present study was the lowest among the studies reported here.

Regarding the level of body image dissatisfaction, in the present study, according to Table 3, 51 (30.91%) participants exhibited mild dissatisfaction, 30 (18.18%) exhibited moderate dissatisfaction, and 21 (12.12%) exhibited severe dissatisfaction. A study⁽²⁰⁾ with 93 nursing students in São Paulo reported that 17.2% exhibited mild concern, 21.5% exhibited moderate concern, and 17.2% exhibited severe concern about body image.

In the present study, the proportion of participants exhibiting severe concern was 15.1%, according to Table 3. In Turkey⁽²⁴⁾, an investigation involving 400 university students (49.3% women) reported that 80.3% were eutrophic, whereas only 52.3% were satisfied with their weight and 67.3% reported being satisfied with their body appearance.

The rationale for presenting data from several countries and contrasting them with the present study is that we observed the influence of different cultures on body image standards, reiterating what authors have suggested for decades⁽¹⁰⁻¹¹⁾.

Digital platforms monetize the promise of an “ideal” body, amplifying brands and discourses that delegate self-care to industries and commerce, linking “well-being” to aesthetic self-control. This ecosystem reconfigures body norms, shifts responsibility to the individual, and intensifies social comparison and body dissatisfaction, especially among young women^(26–27).

Recent Brazilian studies describe this neoliberal body imaginary and the circulation of weight-loss techniques and commodities on Instagram, with material effects on practices and affects^(26–27). In our study, the moderate PISM level suggests that this influence is perceived by students and interacts with the normative discontent already described among young women.

Users of social media platforms, especially Instagram, have been described as exhibiting higher levels of body dissatisfaction and more frequently developing eating disorders, depression, anxiety, and stress. This occurs because excessive social media use significantly affects self-comparison with digital influencers’ profiles⁽²⁸⁾. Excessive screen time may interfere with cognitive and social development, harming academic performance and personal relationships, in addition to constant exposure to inappropriate content, which poses risks to youth safety and well-being⁽²⁹⁾.

Furthermore, from a psychological perspective, excessive access to social media may lead to feelings of anxiety, depression, and stress and exposes individuals to idealized and unrealistic standards, contributing to increased onset of eating disorders, dissatisfaction with self-image, and low self-esteem^(2–3,28).

Tables 4 and 5 indicate statistically significant relationships between body image and perceived influence of social media. In this regard, a study conducted in Lebanon⁽³⁰⁾ with 292 university students examined the relationship between social media dependence, body image satisfaction, and eating attitudes. That study concluded that 41% of participants were classified as dependent, and these individuals showed significant differences in body image satisfaction and impulsive eating attitudes.

Similarly, an experimental study⁽⁷⁾ with 224 female undergraduate students found that the group classified as having body satisfaction increased this aspect compared to the other group, revealing that body dissatisfaction was associated with worsening affective state. These findings suggest that social media may negatively affect emotional state, particularly among those whose affective state is already impaired.

Thus, the present findings are corroborated, as a positive linear trend was observed for body image dissatisfaction as BMI increased (Table 5). In another experimental study⁽⁸⁾, 156 female university students were shown a series of TikTok® videos previously selected and classified as having a positive emotional impact by expert judges. That study concluded that participants satisfied with their body image experienced an increase in positive feelings, whereas those with low body satisfaction experienced an increase in negative feelings.

Tables 4 and 5 also corroborate these statements by supporting the negative influence of social media on emotionally vulnerable women, particularly with regard to body image and weight gain.

Study limitation

This study focused exclusively on a sample of students recruited in a city in the interior of Paraná, specifically including young women. National studies with stratified samples may yield different results and facilitate comparisons with other relevant studies. Although the sample included students from both a public and a private university, no significant differences were observed; moreover, the study objective was not to compare these two student groups.

A diagnostic study⁽³¹⁾ compared different anthropometric indicators using bioimpedance as a reference standard to evaluate obesity among 780 individuals and concluded that BMI, as an isolated indicator, cannot distinguish body composition or fat distribution. This finding

reinforces that metabolic risk assessment should include additional measures such as waist circumference and bioimpedance, thereby improving clinical precision beyond BMI. However, such methods were not feasible in the present design due to logistical constraints in field data collection.

Contributions to the field of health

By offering improved understanding of the relevance of this topic and its impacts on the mental and physical health of many students, the present study contributes to health promotion actions and prevention of eating disorders. Initiatives such as the Aerie Real campaign (32), which used images without digital editing, have demonstrated positive effects on body satisfaction.

The findings indicate that Brazilian nursing students present higher excess weight and low levels of physical activity, reinforcing the need for well-structured intervention programs. Although many interventions have shown promising results, standardization in program design and delivery remains limited; the most common approaches include physical activity programs, critical sociocultural perspectives, and interventions focused on body functionality⁽³³⁾.

CONCLUSIONS

Problems related to body image satisfaction are observed mainly among young people, suggesting that, in Brazil, female university students may present worse BMI values. However, measured indices of body image dissatisfaction vary across countries, suggesting that socio-cultural and economic factors are key explanatory drivers in this context. The hypothesis that social media platforms may be inappropriate for women who experience negative feelings about their body image appears to be consistent with the present findings.

The sample investigated in this study, recruited in the interior of Paraná, exhibited a higher level of susceptibility to health risk than has been reported in other Brazilian regions, thereby corroborating the assumption that social media platforms negatively affect the emotional state of female university students.

Comparisons between the present study and international investigations reveal an increasingly marked difference, underscoring the importance of strengthening health promotion measures to achieve more effective obesity control, particularly given that obesity is a common problem in the Americas.

In addition, conducting further studies to evaluate the impact of social media on university students may contribute to the development of educational measures as well as debates in university settings, with particular emphasis on efforts to promote mental health and prevent eating disorders, mood disorders, and anxiety disorders, in addition to health promotion programs that could be implemented.

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