

Social networks and dissatisfaction with body image among healthcare students

Bianca Soares dos Santos¹  Nathália Dalla Vecchia Fernandes¹  Deborah Cristina Landi Masquio¹ 

¹Centro Universitário São Camilo – CUSC. São Paulo/SP, Brasil.
E-mail: deborah.masquio@prof.saocamilo-sp.br

Abstract

Dissatisfaction with body image is an essential factor related to eating disorders. It is noted that social networks continually publicize the lean and muscular body types, which have contributed to the internalization of the ideal body. However, social networks' influence on body image dissatisfaction in health university students must be clarified. This study aimed to investigate the relationship between dissatisfaction with body image and the use of social networks among undergraduate healthcare students. A cross-sectional survey was conducted, with online data collection using the Google Forms® platform. The sample consisted of 203 healthcare course students aged between 18 and 40 years. The Body Shape Questionnaire (BSQ) was applied to assess body image dissatisfaction. The influence of social networks on lifestyle was investigated by the score generated by the sum of six questions, with answers on a Likert scale. Socioeconomic information and self-reported weight and height were collected. Statistical analysis was performed using the JAMOVI software, considering a significance level of $p \leq 0.05$. The body image dissatisfaction score was significantly higher in women, and 65.4% had some degree of dissatisfaction. BMI, number of social networks accessed, and the overall media influence score were positively associated with dissatisfaction with body image. It is concluded that dissatisfaction with body image was associated with BMI, number of social networks, and social network influence score and was observed mainly in women.

Keywords: Body image. Body appearance. Social network.

INTRODUCTION

Body image can be understood as the cognitive representation we have in our mind about our body's size, structure, and shape, and the feelings about these characteristics and their constituent parts¹. Dissatisfaction with body image has become increasingly common in contemporary society, mainly due to the influence of social networks, which value the ideal of a thin body being associated with success and happiness².

Several factors are associated with dissatisfaction with body image in adolescents and young adults, such as being overweight, depression, exposure to social media, and excessive smartpho-

ne use²⁻⁴. Dissatisfaction with body image can generate dysfunctional and unhealthy behaviors aimed at looking for the “perfect” body through weight control and body measurements, adherence to inappropriate eating behavior, excessive physical exercise, and restriction of social activities. In the long term, this dissatisfaction can contribute to developing eating and mood disorders, such as depression, anxiety, binge eating, and reduced self-esteem⁵⁻⁶.

In today's society, with the advent of the digital age, social networks have become an important tool in the routine of individuals, allowing a quick and instantaneous connection

with the world and with other people. With the massive dissemination of idealized and standardized body images, social networks can negatively influence users' body image, especially among those who seek a "perfect" or idealized body²⁻³. Therefore, frequent exposure to unrealistic body images conveyed on social networks can generate feelings of inadequacy, body dissatisfaction, and even eating and mood disorders^{2,5-7}.

Undergraduate students in the healthcare field are considered a target audience of great interest in scientific studies that assess body image since, as they aspire to a career focused on well-being and caring for others, they may feel pressured concerning their appearance. Therefore, they may be more prone to body image dissatisfaction. In addition, the biological and psychosocial changes related to late adolescence and early adulthood, added to the demands of university life, in parallel with the intense increase in access to social networks today, these individuals may become

more vulnerable to a distorted perception of their body image⁸⁻¹¹.

Despite the growing concern with body image dissatisfaction and its determining factors in young people and university students¹¹⁻¹⁵, few national studies have investigated the relationship between social networks in individuals in the health area in Brazil¹⁶⁻¹⁸. Understanding the relationship between dissatisfaction with body image and the use of social networks in this community can help generate subsidies for possible interventions among individuals vulnerable to social networks' influence on body image and contribute to the Brazilian scientific literature on the subject. Thus, in this study, it is hypothesized that social networks can interfere with the symptoms of dissatisfaction with body image in undergraduate healthcare students. Therefore, this study aimed to investigate the relationship between dissatisfaction with body image and the use of social networks among undergraduate healthcare students.

METHODS

A descriptive-correlational study was carried out. The inclusion criteria for this research were individuals between 18 and 40 years of age studying at a higher education institution in healthcare. Volunteers under the age of 18 and over the age of 40 were omitted since they were not the focus of this study. Those who did not complete the questionnaire were excluded from the sample. A total of 207 responses were collected. However, four were excluded for the reasons mentioned above. Thus, the sample of this study consisted of 203 participants.

The research was disseminated over the internet through networks and social media (Instagram®, Facebook®, and E-mail) and in person at Centro Universitário São Camilo. Data was collected between July and Oc-

tober 2019 through the Google Forms® online platform. A questionnaire produced by the authors was applied to identify personal data such as age, enrolled undergraduate course, higher education institution (public or private), semester, weight, height, presence of diseases, and medication use.

The descriptive characteristics of the sample are presented in Table 1. It was possible to observe that 85.7% of the participants were women and 14.3% of men. The most frequent family income observed was between 4 and 10 minimum wages (39.4%). Most of the sample, around 93.1%, attended private educational institutions. Of the total number of interviewees, 39.4% were undergraduate students of the nutrition course, and 60.4% were part of other courses

in the healthcare field (nursing, psychology, biomedicine, medicine, physiotherapy, and pharmacy). Around 20.2% and 17.7% were in their course's second and sixth semesters, respectively, comprising the largest groups of respondents.

Regarding the presence of diseases, it was found that 7.4% reported depression, 4.9% anxiety, 3% eating disorders, 1.5% bipolarity, and 0.5% panic disorder. About 47.8% of respondents mentioned using some type of psychotropic medication.

Table 1 – Socio-demographic and health characteristics of undergraduate healthcare students. Sao Paulo-SP, 2019.

	n	%
Sex		
Female	174	85.7
Male	29	14.3
Family income		
Up to 2 minimum wages	9	4.4
From 2 to 4 minimum wages	33	16.3
From 4 to 10 minimum wages	80	39.4
From 10 to 20 minimum wages	46	22.7
More than 20 minimum wages	35	17.2
Educational institution		
Private	189	93.1
Public	14	6.9
Undergraduate course		
Nutrition	80	39.4
Medicine	44	21.7
Biomedicine	29	14.3
Psychology	23	11.3
Nursing	14	6.9
Physiotherapy	9	4.4
Pharmacy	4	2.0
Semester		
1	5	2.5
2	41	20.2
3	10	4.9
4	31	15.3
5	11	5.4
6	36	17.7
7	23	11.3
8	29	14.3
9	2	1.0
10	14	6.9
Reported illnesses		
Depression	15	7.4
Anxiety	10	4.9

to be continued...

...continuation table 1

	n	%
Eating disorder	6	3.0
Bipolarity	3	1.5
Panic Syndrome	1	0.5
Use of Psychotropic Medication		
No	106	52.2
Yes	97	47.8

%- data presented in percentage frequency, n- absolute number.

The Body Shape Questionnaire (BSQ) was applied to investigate body image dissatisfaction. This instrument was created by Cooper *et al.* (1987)¹⁹, adapted and validated for the Brazilian population by DiPietro and Silveira (2009)²⁰, with internal consistency assessed by Cronbach's alpha coefficient of 0.97. This questionnaire consists of 34 questions, with the following answers ranging from 1 to 6: never (1); rarely (2); sometimes (3); often (4); almost always (5); and always (6). The total score was obtained by adding all responses. The higher the score, the greater the degree of dissatisfaction with body image was considered. The body image dissatisfaction score can be categorized into no body image dissatisfaction (≤ 110 points); Mild dissatisfaction (≥ 111 to ≤ 138 points); Moderate dissatisfaction (≥ 139 to ≤ 167 points); and Severe dissatisfaction (≥ 168 points).

Participants' access to social networks and their influence on lifestyle was investigated using a questionnaire previously prepared by Lira *et al.*²¹ since there are no specific and validated instruments for this type of evaluation of this particular audience. This questionnaire included questions that investigated the social networks that the volunteers had, as well as the frequency of access to each one of them (daily, weekly, monthly, and not accessed). To assess the influence of social networks on lifestyle, the six questions that investigated its impact

1) on the practice of physical exercise were considered; 2) as a source of information about food and diet; 3) as a source of information about a healthy body; 4) on food recommendations; 5) on daily food choices; and 6) on perception and relationship with the body. Each question had five response options with scores ranging from 0 to 4 points (0 = never; 1 = rarely; 2 = sometimes; 3 = often; 4 = always). Adding the answers to these questions a total media influence score was generated²¹.

This study was approved by the Research Ethics Committee (CEP) of Centro Universitário Sao Camilo under approval number 3.393.375. All volunteers agreed to participate in the research with the Informed Consent Form (ICF) available online.

Statistical analysis was performed considering the significance level of $p \leq 0.05$. The distribution of variables was verified using the Kolmogorov-Smirnov test, considering the Lilliefors correction. Descriptive analyses used mean and standard deviation for numerical variables and absolute and relative values for categorical data. The chi-square test was applied with Fisher's correction when necessary, and simple and multiple linear regression was used to assess the association between variables. The t-student test for an independent sample and the Levene test was applied to determine the equality of variances of variables between groups.

RESULTS

Table 2 presents the anthropometric characteristics, the body image dissatisfaction score, and the media influence score in the total sample and according to gender. Through the independent t test, it was noted that men had significantly greater weight ($t(201)=5.55$; $p<0.001$; Effect size= -1.11, CI=-1.52 - 0.701) and height ($t(201)=-10.3$; $p<0.001$; Effect size=-2.06, CI=-2.51 - -1.61). Conversely, women presented a higher body image dissatisfaction score ($t(201)=2.94$; $p=0.004$; Effect size=0.59, CI=0.192 - 0.988). There was no significant difference in the media influence score between men and women ($t(201)=1.48$; $p=0.140$).

Regarding the classification of nutritional status, it was noted that 58.1% of the total sample was eutrophic, while 25.1% were overweight, followed by 11.8% being obese and 4.9% being underweight (Table 2). Regarding women, 59.2% were eutrophic, 25.9% overweight, 9.8% obese, and 5.2% underweight. Among men, 51.7% were eutrophic, 24.1% obese, 20.7% overweight, and 3.4% underweight. However, there was no significant association between gender and nutritional status using the chi-square test ($\chi^2(3)=4.99$; $p=0.200$).

In the total sample, it was noted that 37.9% were not dissatisfied with their body image, 21.2% had mild dissatisfaction, 18.7% had moderate dissatisfaction, and 22.2% had severe dissatisfaction (Table 2). According to gender, 58.6% of men did not present any degree of dissatisfaction with body image, while in women it was 34.5%. In women, it was noted that 20.1% had a moderate degree, and 24.1% had a severe degree of dissatisfaction with body image. In men, 10.3% had moderate and severe dissatisfaction. Using the chi-square test, there was no significant association between the degree of body image dissatisfaction and gender ($\chi^2(3)=7.22$; $p=0.078$).

Table 3 describes the profile of the use of

social networks and frequency of access. It was found that 10.8% of the volunteers had only one social network account, 58.6% had two social networks, 23.6% had three social networks, and 6.9% had four social networks. Among the investigated social networks, Instagram® was the most used by participants (94.1%), followed by Facebook® (93.1%). The frequency of access to Instagram® and Facebook® by most participants was daily, at 92.6% and 82.3%, respectively.

Table 4 presents questions related to the influence of the media and social networks on physical exercise, nutrition, and body image. It was observed that 29.6% said that they sometimes follow social networks that talk about physical activity, and 25.1% said that they often do. Regarding social networks as sources of information about food and diets, 34.5% say they do not follow them, and 27.6% say they sometimes do. Moreover, concerning social networks as sources of information about a healthy body, it was noted that 47.3% of respondents answered “no” and 26.1% “yes, rarely.” When asked about following a diet or dietary recommendations posted on social networks, it was noted that 57.6% denied this type of adherence. Regarding the influence of social networks on daily food choices, 41.4% answered “no,” but 58.6% answered “yes.” Regarding the impact of social networks on the perception and relationship with the body, it was noted that 14.8% indicated “no,” but the majority stated “yes.”

Through simple regression analysis, it was noted that the body image dissatisfaction score was associated with weight [$\beta=0.32$; CI 95%:0.53 -1.31, $p<0.001$], BMI [$\beta=0.40$; 95% CI: 2.58 -4.99, $p<0.001$], number of social networks [$\beta=0.14$; CI 95%:0.01 -15.62, $p<0.050$], and total media influence score [$\beta=0.62$; 95% CI: 4.97-7.07, $p<0.001$] (Table 5).

Multiple regression analysis revealed that

regardless of age, the variables for gender, BMI, number of social networks, and media influence score were positively associated with the body image dissatisfaction score, elucidating an important variation in this score ($[R^2=0.257, p<0.001$ (Model 1)] $[R^2=0.512, p<0.01$ (Model 2)] $[R^2=0.515, p<0.001$ (Model 3)) (Ta-

ble 6). When the multiple regression model was adjusted for the total media influence score, it was noted that this was positively associated with the body image dissatisfaction score. When adjusting the model for the type of undergraduate course, no significant association was reported.

Table 2 – Anthropometric data, dissatisfaction with body image, and media influence score in undergraduate healthcare students, according to gender. Sao Paulo, SP, 2019.

	Everyone n=203		Womans n=174		Mens n=29		p*
	Average	SD	Average	SD	Average	SD	
Age years)	21.7	3.6	21.6	3.7	22.7	2.8	0.14
Weight (kg)	65.7	14.3	63.6	13.1	78.4	14.8	<0.001
Height (m)	1.6	0.1	1.6	0.1	1.8	0.1	<0.001
BMI (kg/m ²)	24.2	4.5	24.0	4.4	25.4	4.6	0.14
Body image dissatisfaction score	102	42.1	105.5	41.6	81.1	39.7	0.004
Media influence score on lifestyle	9.2	4.4	9.4	4.3	8.1	4.7	0.14
Nutritional status	N	%	N	%	N	%	p**
Underweight	10	4.9	9	5.2	1	3.4	0.200
Eutrophic	118	58.1	103	59.2	15	51.7	
Overweight	51	25.1	45	25.9	6	20.7	
Obesity	24	11.8	17	9.8	7	24.1	
Body image	n	%	n	%	n	%	p**
None	77	37.9	60	34.5	17	58.6	0.078
Light	43	21.2	37	21.3	6	20.7	
Moderate	38	18.7	35	20.1	3	10.3	
Severe	45	22.2	42	24.1	3	10.3	

*Independent t test to compare men and women; ** Chi-square test. Significant value $p<0.05$; SD, standard deviation.

Table 3 – Social networks and frequency of access reported by undergraduate healthcare students. Sao Paulo, SP, 2019.

	n	%
Number of Social Networks		
1	22	10.8

to be continued...

...continuation table 3

	n	%
2	119	58.6
3	48	23.6
4	14	6.9
Instagram®		
Yes	191	94.1
No	12	5.9
Frequency of Access		
Daily	188	92.6
Weekly	7	3.4
Monthly	1	0.5
Annually	7	3.4
Facebook®		
Yes	189	93.1
No	14	6.9
Frequency of Access		
Daily	167	82.3
Weekly	19	9.4
Monthly	5	2.5
Does not access	12	5.9
Twitter®		
Yes	50	24.6
No	153	75.4
Frequency of Access		
Daily	37	18.2
Weekly	19	9.4
Monthly	4	2.0
Annually	143	70.4
Snapchat®		
Yes	30	14.8
No	173	85.2
Frequency of Access		
Daily	12	5.9
Weekly	18	8.9
Monthly	20	9.9
Annually	153	75.4

Table 4 – Influence of the media and social networks on the lifestyle and perception of body image in undergraduate healthcare students. Sao Paulo, SP, 2019.

	No		Yes, rarely		Yes, sometimes		Yes, often		Yes, always	
	n	%	n	%	n	%	n	%	n	%
Follow social network accounts that talk about physical exercise.	55	27.1	37	18.2	60	29.6	51	25.1	0	0

to be continued...

...continuation table 4

	No		Yes, rarely		Yes, sometimes		Yes, often		Yes, always	
	n	%	n	%	n	%	n	%	n	%
Social networks as sources of information about food and diets	70	34.5	54	26.6	56	27.6	23	11.3	0	0
Social networks as sources of information about what a healthy body is	96	47.3	53	26.1	39	19.2	15	7.4	0	0
Followed a diet or other recommendation about food made by social networks	117	57.6	40	19.7	29	14.3	14	6.9	3	1.5
Influence of social media on your daily food choices	84	41.4	47	23.2	50	24.6	16	7.9	6	3
Influence of social networks on your perception and relationship with your body	30	14.8	28	13.8	53	26.1	40	19.7	52	25.6

Table 5 – Simple regression for determinants of undergraduate healthcare students' body image dissatisfaction score. Sao Paulo, SP, 2019.

	Body image dissatisfaction score				
	Beta	R ²	P	-95.00%	+95.00%
				Cnf.Lmt	Cnf.Lmt
Weight	0.32	0.098	<0.001	0.53	1.31
BMI	0.40	0.160	<0.001	2.58	4.99
Number social networks	0.14	0.019	0.050	0.01	15.62
Total media influence score	0.62	0.389	<0.001	4.97	7.07

Table 6 – Multiple regression for determinants of body image dissatisfaction in undergraduate healthcare students. Sao Paulo, SP, 2019.

	Body image dissatisfaction score				
	Beta	R ²	P	-95.00%	+95.00%
				Cnf.Lmt	Cnf.Lmt
Model 1	0.507	0.257	<0.001	-43.84	51.569
Sex	-0.23		0.00	-42.71	-13.44
Age	-0.08		0.20	-2.49	0.53
BMI	0.46		0.00	3.15	5.48
Number social networks	0.15		0.02	1.11	15.67
Model 2	0.716	0.512	<0.01	-50.79	26.986
Sex	-0.17		0.00	-32.66	-8.70
Age	-0.06		0.23	-1.98	0.48
BMI	0.33		0.00	2.18	4.12
Number social networks	0.08		0.15	-1.60	10.33
Total media influence score	0.53		0.00	4.09	6.06

to be continued...

...continuation table 6

	Body image dissatisfaction score				
	Beta	R ²	P	-95.00%	+95.00%
				Cnf.Lmt	Cnf.Lmt
Model 3	0.718	0.515	<0.01	-29.87	36.053
Sex	-0.17		0.00	-33.01	-8.91
Age	-0.09		0.10	-2.17	0.18
Undergraduate course	0.04		0.43	-1.38	3.24
BMI	0.33		0.00	2.11	4.06
Total media influence score	0.53		0.00	4.10	6.10

DISCUSSION

Among the findings observed in this study, it was found that the body image dissatisfaction score was significantly higher in women compared to men. Approximately 65.5% of the women had some degree of dissatisfaction with their body image, which ranged from mild to severe. The Longitudinal Study of Adult Health-Brazil (ELSA-Brasil), carried out with 11,477 Brazilian adults, revealed that women more frequently reported body dissatisfaction due to excess weight. However, being overweight was more frequent among men²².

A Brazilian study carried out by Alvarenga *et al.* (2010)¹³, conducted with 2,402 university women from courses in the healthcare field, indicated that 64.4% of the sample wanted to be smaller than they were, which revealed a great magnitude of body dissatisfaction in the assessed group, corroborating our findings. Among Brazilian nursing students, it was observed that even among those who did not have a distorted self-perception of body image, 75.0% were dissatisfied with their body image. However, among those who presented distorted self-perception, the proportion of dissatisfaction was even higher¹⁸.

In a nationally representative sample of 427 Nutrition undergraduates and 318 nutritionists, it was found that more than 50% of women were dissatisfied with their body image,

and severe dissatisfaction was more prevalent among students compared to trained professionals (26.7% versus 16.0%)⁹. Taken together, these findings demonstrate that many individuals, including healthcare students, are dissatisfied with their body image^{9,13,18}.

The multiple regression analysis in the present study showed that the number of social networks, gender, BMI, and the media influence score determined the body image dissatisfaction score among healthcare students regardless of age. To date, no studies were found that observed this same association in undergraduate healthcare students in Brazil, demonstrating one of the most relevant findings of this study. Healthcare students, despite having a greater understanding of the importance of diet, physical exercise, and a healthy lifestyle, are not immune to the influence of social networks on practices related to diet, lifestyle, and perception of body image¹⁵⁻¹⁸.

In a study conducted with a sample of 112 physical education students, a positive association was found between the hours of social networks used each day and their greater use as sources of information about lifestyle¹⁵. Martendal (2020)¹⁷ investigated 238 university students and demonstrated that a notable part spends a large amount of their day on social networks. Surprisingly, it was noted that social networks already influenced 97.4%,

and 86.9% stated that these influence their perception of their body.

The study by Souto *et al.* (2018)²³ found that 82% of the evaluated university students follow or have already followed some dietary recommendation on social networks, with Instagram® and Facebook® being accessed more frequently, as was also observed herein. In the sample of this study, it was found that more than 65% of the participants use social networks as a source of information about food and diets, with more than 40% of the sample having already carried out a diet or adhered to the dietary recommendations published on social networks. It was also observed that 85.2% reported that social networks influence their perception and relationship with their body.

The influence of social networks on body image dissatisfaction has been widely investigated in adolescents and adults^{2,4,7,12,14,24}. Jiotsa *et al.* (2021)² evaluated 1,331 individuals aged between 15 and 35 years and demonstrated that the frequency of comparing their physical appearance with that of people followed on social networks was associated with dissatisfaction with body image and the drive towards thinness.

Confirming this relationship, the systematic review conducted by Revanche *et al.* (2022)¹² robustly showed the association between social networks and altered body image in men and women. The authors highlighted that frequent exposure to content related to appearance is a factor that negatively affects body image, which can be explained by internalizing the idea of thinness and increased social comparison with peers and celebrities¹². Another systematic review of 78 articles (n=39,491 participants) revealed that the internalization of the ideal body is a factor strongly associated with body dissatisfaction in adolescents and young adults⁵. In a meta-analysis conducted by Mingoia *et al.* (2017)²⁵, 1,829 women between 10 and 46 years of age were analyzed. The results also

confirmed the positive association between the use of social networks and the magnitude of internalizing the ideal of a thin body in adolescents and adults.

The present study found that weight and BMI measurements were positively associated with the body image dissatisfaction score, which indicates greater body dissatisfaction in university healthcare students with higher anthropometric measurements. The study carried out by Kapoor *et al.* (2022)³ with 180 university women showed a significantly higher prevalence of body image dissatisfaction among those who were overweight. They showed that social media, nutritional status, and maternal education were determining factors of concern with body image.

The media significantly contributes to disseminating a standard of beauty, influencing a large part of society to seek this idealized physical appearance, which makes many people often feel pressured and dissatisfied with their current body shape, even those who are eutrophic²⁶. The study by Paiva *et al.* (2017)¹⁰, conducted with 90 adult university students and undergraduate students of the Nutrition course, revealed that 42.2% were dissatisfied with the nutritional status of being overweight; however, 40% were dissatisfied with being thin. These results reinforce that even those with weight within the normal range reveal dissatisfaction with their body image since established paradigms for physical ideals and internalization of an ideal appearance may not always be achievable²⁷.

When the sample was questioned about the influence of social networks on perception and relationship with their bodies, 85.2% answered that they are influenced in some way, with Facebook® and Instagram® being the most accessed networks daily. Notably, 92% access Instagram and 82% access Facebook every day. This reveals the frequent presence of these social networks in the participants' routines. The recent work by Alfonso-Fuertes *et al.* (2023)²⁸, which assessed 585

participants aged 18 to 40, indicated that 60.0% use Instagram® for one or more hours daily. Participants who spent more time on Instagram® had higher levels of body dissatisfaction, greater comparisons of physical appearance, and lower self-esteem.

In a sample of 259 young women aged 18 to 29, it was found that the use of Facebook® and Instagram® with a focus on appearance was related to concerns about body image. Greater involvement with photo activities on Facebook® and following accounts or people focusing on body appearance on Instagram® was associated with greater internalization of the ideal thinness and body vigilance. Thus, the authors reinforced the impact of exposure to social networks on the perception of body image in young women²⁹.

In the present study, the number of social networks was associated with the body image dissatisfaction score, which can be explained by the fact that the more networks, the greater the user's exposure time to ideal body images, considered a standard of beauty. Involvement with social networks and exposure to content related to body image can impact weight monitoring behaviors, disordered eating attitudes, adherence to res-

trictive diets, and behaviors that lead to weight loss in an unhealthy way, as well as the development of eating disorders^{24,30-31}.

Although social networks present wide dissemination of health information and stimuli on the adoption of a healthy lifestyle, on the other hand, there is a great facility for communication failures and generation of expectations, which, when poorly managed, produce tendencies towards exaggerated and harmful healthcare behaviors. Frequent social comparisons are related to higher levels of depression and anxiety³². In this study, despite the low reported prevalence of self-reported mood disorders, such as anxiety, depression, panic and bipolarity, and eating disorders, it was noted that 47.8% of participants reported the use of some psychotropic medication, drugs generally used for the treatment of people in psychological distress. In this context, it is essential to point out the complex relationship between depression, anxiety, and changes in body image. A worrying trend is that the negative perception of body image has been associated with increased levels of depression and anxiety in adults, including in samples of university students³²⁻²⁴.

CONCLUSION

The results indicated that an essential part of the participants reported that social networks interfere with the perception of their body and are sources of information about diet and a healthy body. It was found that dissatisfaction with body image was significantly higher in women and positively associated with using social networks and BMI. Thus, this study contributes to the existing literature by highlighting the positive association between the use of social networks and dissatisfaction with body image among university healthcare students. These results reinforce the importance of investigating dissatisfaction with

body image in this population and investigating more details about the profile of social networks and their accessed content.

This study's primary limitation is using a non-validated questionnaire to evaluate access to social networks and their influence on diet, lifestyle, and body image. It is worth mentioning that until the data collection date, no validated questionnaires in Brazil were aimed at the evaluated public, except for adolescents³⁵. The assessment of nutritional status through self-reported weight and height are also limitations of this work since they may not faithfully represent the classifi-

cation of the nutritional status of all participants. Thus, it is proposed that new studies be carried out and directed towards the validation of instruments that investigate the use and content accessed on social networks to

generate further clarification on their impacts on changes in body image, behavior, and mood, which trigger harmful effects on health and quality of life in adult individuals.

Author Statement CREdiT

Conceptualization: Santos, BS; Fernandes, NDV; Masquio, DCL. Methodology: Santos, BS; Fernandes, NDV; Masquio, DCL. Validation: Santos, BS; Fernandes, NDV; Masquio, DCL. Statistical analysis: Masquio, DCL. Formal analysis: Masquio, DCL. Research: Santos, BS; Fernandes, NDV; Masquio, DCL. Resources: Santos, BS; Fernandes, NDV; Masquio, DCL. Preparation of the original draft: Santos, BS; Fernandes, NDV; Masquio, DCL. Writing-revision and editing: Masquio, DCL. Visualization: Santos, BS; Fernandes, NDV; Masquio, DCL. Supervision: Masquio, DCL. Project management: Masquio, DCL.

All authors read and agreed with the published version of the manuscript.

REFERENCES

1. Hosseini SA, Padhy RK. Body Image Distortion. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022. Disponível em: <https://www.ncbi.nlm.nih.gov/books/NBK546582/>
2. Jiotsa B, Naccache B, Duval M, Rocher B, Grall-Bronnec M. Social Media Use and Body Image Disorders: Association between Frequency of Comparing One's Own Physical Appearance to That of People Being Followed on Social Media and Body Dissatisfaction and Drive for Thinness. *Int J Environ Res Public Health* [Internet] 2021; acesso em 28 de outubro de 2022; 18(6):2880. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8001450/>
3. Kapoor A, Upadhyay MK, Saini NK. Prevalence, patterns, and determinants of body image dissatisfaction among female undergraduate students of University of Delhi. *J Family Med Prim Care* [Internet] 2022; acesso em 26 de janeiro de 2023; 11(5):2002-2007. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9254831/>
4. Yang F, Qi L, Liu S, Hu W, Cao Q, Liu Y, et al. Body Dissatisfaction and Disordered Eating Behaviors: The Mediation Role of Smartphone Addiction and Depression. *Nutrients* [Internet] 2022; acesso em 22 de dezembro de 2022; 14(6):1281. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8955505/>
5. Paterna A, Alcaraz-Ibáñez M, Fuller-Tyszkiewicz M, Sicilia Á. Internalization of body shape ideals and body dissatisfaction: A systematic review and meta-analysis. *Int J Eat Disord* [Internet] 2021; acesso em 13 de julho de 2022; 54(9):1575-1600. Disponível em: <https://onlinelibrary.wiley.com/doi/epdf/10.1002/eat.23568>
6. Walker DC, White EK, Srinivasan VJ. A meta-analysis of the relationships between body checking, body image avoidance, body image dissatisfaction, mood, and disordered eating. *Int J Eat Disord* [Internet] 2018; acesso em 23 de novembro de 2021; 51(8):745-770. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/29659039/>
7. Vuong AT, Jarman HK, Doley JR, McLean SA. Social Media Use and Body Dissatisfaction in Adolescents: The Moderating Role of Thin- and Muscular-Ideal Internalisation. *Int J Environ Res Public Health* [Internet] 2021; acesso em 20 de julho de 2022; 18(24):13222. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8701501/>
8. Barreto JTT, Rendeiro LC, Nunes ARM, Ramos EMLS, Ainett WSCO, Lourenco-Costa VV. Fatores associados à insatisfação com a imagem corporal em estudantes dos cursos da área da saúde de Belém-PA. *RBONE* [Internet] 2019; acesso em 12 de julho de 2022; 13(77):120-128. Disponível em: <http://www.rbone.com.br/index.php/rbone/article/view/894>
9. Toral N, Gubert MB, Spaniol AM, Monteiro RA. Eating disorders and body image satisfaction among Brazilian undergraduate nutrition students and dietitians. *Arch Latinoam Nutr* [Internet] 2016; acesso em 25 de julho de 2022; 66(2):129-134. Disponível em: <https://www.alanrevista.org/ediciones/2016/2/art-5/#>
10. Paiva AA, Lopes MAM, Lima SMT, Cruz KJC, Rodrigues GP, Carvalho CMRG. Percepção da imagem corporal e estado nutricional em acadêmicas de nutrição de uma universidade pública. *Demetra* [Internet] 2017; acesso em 20 de maio de 2019; 12(1):193-206. Disponível em: <https://www.e-publicacoes.uerj.br/index.php/demetra/article/view/22483>
11. Souza AC, Alvarenga MS. Insatisfação com a imagem corporal em estudantes universitários: uma revisão integrativa. *J Bras Psiquiatr* [Internet] 2016; acesso em 10 de julho de 2022; 65(3):286-299. Disponível em: <https://www.scielo.br/j/jbpsiq/a/9rqZF8vfjLrQJNXwyPzQN/?format=pdf&lang=pt>
12. Revranche M, Biscond M, Husky MM. Investigating the relationship between social media use and body image among adolescents: A systematic review. *Encephale* [Internet] 2022; acesso em 25 de julho de 2022; 48(2):206-218. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/34801229/>
13. Alvarenga MS, Philippi ST, Lourenço BH, Sato PM, Scagliusi FB. Insatisfação com a imagem corporal em universitárias brasileiras. *J Bras Psiquiatr* [Internet] 2010; acesso em 25 de julho de 2022; 59(1):44-51. Disponível em: <https://doi.org/10.1590/S0047-20852010000100007>

14. Hogue JV, Mills JS. The effects of active social media engagement with peers on body image in young women. *Body Image* [Internet] 2019; acesso em 26 de fevereiro de 2022. 28:1-5. Disponível em: <https://www.sciencedirect.com/science/article/pii/S174014451730517X?via%3Dihub>
15. Santos MS, Gonçalves VO. Uso das redes sociais, imagem corporal e influência da mídia em acadêmicos dos cursos de educação física. *Itinerarius Reflectionis* [Internet] 2020; acesso em 25 de julho de 2022; 16(3): 1-18. Disponível em: <https://revistas.ufg.br/rir/article/view/58815>
16. Lustosa BF, Silva BGM. A influência das redes sociais na prática de exercícios físicos e na autoimagem de estudantes universitários da área de saúde: uma revisão integrativa. Brasília: Centro Universitário do Planalto Central Aparecido dos Santos (RIUniceplac), 2020. Trabalho de Conclusão de Curso em Educação Física.
17. Martendal FK. Influência das redes sociais na (in) satisfação da imagem corporal em universitários de uma instituição comunitária. Palhoça: Universidade do Sul de Santa Catarina, 2020. Trabalho de Conclusão de Curso em Nutrição.
18. Duarte LS, Chinen MNK, Fujimori E. Auto percepção distorcida e insatisfação com a imagem corporal entre estudantes de enfermagem. *Rev Esc Enferm* [Internet] 2021; acesso em 15 de julho de 2022; 55:e03665. Disponível em: <https://www.scielo.br/j/reusp/a/PSQXdvK5Chgqbcdr7P65TMG/?lang=pt&format=pdf>
19. Cooper PJ, Taylor MJ, Cooper Z, Fairburn CG. The development and validation of the body shape questionnaire. *Int J Eat Disord* [Internet] 1987; acesso em 20 de maio de 2019; 6(4):485-494. Disponível em: <https://onlinelibrary.wiley.com/doi/10.1002/1098-108X%28198707%296%3A4%3C485%3A%3AAID-EAT2260060405%3E3.0.CO%3B2-O>
20. Di Pietro M, Silveira DX. Internal validity, dimensionality and performance of the Body Shape Questionnaire in a group of Brazilian college students. *Rev Bras Psiquiatr* [Internet] 2009; acesso em 20 de maio de 2019; 31(1):21-24. Disponível em: <https://www.scielo.br/j/rbpa/a/4kBR3JN9qYGMsrS3KBjJ5LN/?format=pdf&lang=en>
21. Lira AG, Ganen AP, Lodi AS, Alvarenga MS. Uso de redes sociais, influência da mídia e insatisfação com a imagem corporal de adolescentes brasileiras. *J Bras Psiquiatr* [Internet] 2017; acesso em 17 de dezembro de 2019; 66(3):164-171. Disponível em: <https://www.scielo.br/j/jbpsiq/a/6NrPypcRchnc35RH9GLSYwK/#>
22. Albuquerque LS, Griep RH, Aquino EML, Cardoso LO, Chor D, Fonseca MJM. Fatores associados à insatisfação com a Imagem Corporal em adultos: análise seccional do ELSA-Brasil. *Ciênc Saúde Coletiva* [Internet] 2021; acesso em 12 de julho de 2022; 26(5):1941-1954. Disponível em: <https://www.scielo.br/j/csc/a/tZJKPZxvzWPMsWsDBTjQJ3h/?format=pdf&lang=pt>
23. Souto GG. A influência das redes sociais na alimentação de universitários do UniCEUB. Brasília: Centro Universitário de Brasília, 2018. Trabalho de Conclusão de Curso em Nutrição.
24. Rounsefell K, Gibson S, McLean S, Blair M, Molenaar A, Brennan L et al. Social media, body image and food choices in healthy young adults: A mixed methods systematic review. *Nutr Diet* [Internet] 2020; acesso em 12 de julho de 2022; 77(1):19-40. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7384161/>
25. Mingoia J, Hutchinson AD, Wilson C, Gleaves DH. The Relationship between Social Networking Site Use and the Internalization of a Thin Ideal in Females: A Meta-Analytic Review. *Front Psychol* [Internet] 2017; acesso em 20 maio 2019; 8:1351. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5545754/>
26. Rodgers RF, Rousseau A. Social media and body image: Modulating effects of social identities and user characteristics. *Body Image* [Internet] 2022; acesso em 28 de Janeiro de 2023; 41:284-291. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/35358754/>
27. Jankauskiene R, Baceviciene M. Media Pressures, Internalization of Appearance Ideals and Disordered Eating among Adolescent Girls and Boys: Testing the Moderating Role of Body Appreciation. *Nutrients* [Internet] 2022; acesso em 12 julho 2022; 14(11):2227. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9182577/>
28. Alfonso-Fuertes I, Alvarez-Mon MA, Sanchez Del Hoyo R, Ortega MA, Alvarez-Mon M, Molina-Ruiz RM. Time Spent on Instagram and Body Image, Self-esteem, and Physical Comparison Among Young Adults in Spain: Observational Study. *JMIR Form Res* [Internet] 2023; acesso em 15 de maio de 2023; 7:e42207. Disponível em: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10131713/>
29. Cohen R, Newton-John T, Slater A. The relationship between Facebook and Instagram appearance-focused activities and body image concerns in young women. *Body Image* [Internet] 2017; acesso em 15 de maio de 2023; 23:183-187. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/29055773/>
30. Rodgers RF, Rousseau A. Social media and body image: Modulating effects of social identities and user characteristics. *Body Image* [Internet] 2022; acesso em 15 de maio de 2023; 41:284-291. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/35358754/>
31. Holland G, Tiggemann M. A systematic review of the impact of the use of social networking sites on body image and disordered eating outcomes. *Body Image* [Internet]. 2016; acesso em 15 de maio de 2023; 17:100-110. Disponível em: <https://pubmed.ncbi.nlm.nih.gov/26995158/>
32. Seabrook EM, Kern ML, Rickard NS. Social Networking Sites, Depression, and Anxiety: A Systematic Review. *JMIR Ment Health* [Internet] 2016; acesso em 20 de maio de 2019; 3(4):e50. Disponível em: <https://mental.jmir.org/2016/4/e50/>
33. Han B, Du G, Yang Y, Chen J, Sun G. Relationships between physical activity, body image, BMI, depression and anxiety in Chinese college students during the COVID-19 pandemic. *BMC Public Health* [Internet] 2023; acesso em 15 de maio de 2023; 23(1):24. Disponível em: <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-022-14917-9>
34. Silva D, Ferriani L, Viana MC. Depression, anthropometric parameters, and body image in adults: a systematic review. *Rev Assoc Med Bras* [Internet] 2019; acesso em 15 de maio de 2023; 65(5):731-8. Disponível em: <https://doi.org/10.1590/1806-9282.65.5.731>
35. Amaral ACS, Conti MA, Ferreira MEC, Meirelles JFF. Avaliação Psicométrica do Questionário de Atitudes Socioculturais em Relação à Aparência-3 (SATAQ-3) para Adolescentes. *Psic: Teor e Pesq* [Internet] 2015; acesso em 13 de julho de 2023; 31(4): 471-479. Disponível em: <https://www.scielo.br/j/ptp/a/KSFpscC6rX58N3NqsGWFZyf/?format=pdf&lang=pt>

Received: 26 July 2022.

Accepted: 27 June 2023.

Published: 06 September 2023.