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# Self-esteem, body image, and associated factors among female and male university students: A cross-sectional study

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## Abstract:

**BACKGROUND:** An empirical approach to self-esteem and its associated factors is crucial during youth, when ranking and physical appearance significantly impact self-esteem. Enhancing self-esteem helps students appreciate individual characteristics and maintain a positive body image despite unhealthy exposures. This study aimed to fill the gap on self-esteem in Moroccan university students, considering sex-specific differences and associated factors.

**MATERIALS AND METHODS:** A cross-sectional study was conducted among 654 students from various Moroccan universities. An online questionnaire was used including questions about sociodemographic factors, such as age and sex, body image figure scale to measure body image perception and satisfaction, and the Rosenberg scale of self-esteem.

**RESULTS:** Females were observed to be more satisfied with their body shape and weight compared to males. Males were significantly more dissatisfied with their weight due to their desire to be heavier, while females generally wanted to lose weight. Additionally, we found a significant correlation between marital status, socioeconomic status, and place of residency during studies in relation to self-esteem. Single students with low socioeconomic status and those living in university housing had lower self-esteem than their counterparts. Overall, male students desired to gain weight, whereas female students wanted to lose weight.

**CONCLUSION:** Females were more satisfied with their bodies than males, who wanted to be heavier, while females wanted to lose weight. Lower self-esteem was linked to being single, having low socioeconomic status, and living in university housing. Innovative strategies are required to ensure better appreciation of the actual body size and promote healthy self-esteem.

## Keywords:

Body size satisfaction, gender difference, Rosenberg scale, self-esteem, university student

## Introduction

Self-esteem is a crucial element that significantly impacts a person's mental health and well-being.<sup>[1]</sup> How we perceive ourselves emotionally significantly impacts how we judge ourselves and our lives.<sup>[2,3]</sup> Self-esteem is considered a protective factor for our physical health as an important

psychological resource. However, in today's society, where social media and advertising frequently present unrealistic beauty standards, self-esteem and body image have become increasingly critical issues that affect both men and women of all ages.<sup>[4]</sup>

Self-esteem strongly relates to an individual's overall evaluation of their

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value and self-worth.<sup>[5]</sup> The concept involves the beliefs, emotions, and attitudes that a person holds about themselves, and it can be influenced by a variety of factors, including personal experiences, relationships, and societal expectations.<sup>[3,6]</sup> Youth and adolescence are seen as a crucial time in life to address these emotional characteristics, social and physiological that impact their development, since higher levels of happiness, lower rates of disease, and improved emotional well-being are all associated with life satisfaction.<sup>[7]</sup>

The concepts of self, self-esteem, and perception of self are interdependent and condition the lifestyle and health habits of individuals, especially adolescents.<sup>[7]</sup> Self-esteem plays an important role in maintaining college students as a youth, normal psychological status.<sup>[8,9]</sup> Research indicates that self-esteem is influenced by several factors, including personal experiences, relationships, and societal expectations. Higher self-esteem is linked to positive emotions, such as joy, optimism, and relaxation, which help mitigate stress and enhance physical health. Additionally, individuals with high self-esteem tend to have healthier relationships and greater life satisfaction.

Despite extensive research on self-esteem, gaps remain, particularly regarding gender-specific differences in university students. Previous studies have shown that self-esteem levels and their associated factors can vary significantly between males and females due to differing societal pressures and expectations.<sup>[10-12]</sup> For instance, males may experience pressure to conform to ideals of strength and dominance, while females often face unrealistic beauty standards.

This study aims to fill this gap by investigating the relationship between self-esteem and its associated factors in both female and male university students in Morocco. This research is essential for developing targeted interventions to enhance self-esteem and overall well-being among university students, a population particularly vulnerable to societal pressures and unhealthy exposures. By examining sex-specific differences, we can better understand how to support students in maintaining positive self-esteem and body image, ultimately promoting healthier lifestyles and improved mental health outcomes.<sup>[13,14]</sup>

## Materials and Methods

### Study design and setting

According to the cultural context of our country, our study population is composed of people who identify themselves in gender based on the biological sex assigned at birth (male and female). A cross-sectional study was conducted from April 5, 2023, to June 10, 2023. The sample was recruited to participate in a virtual

French language survey. All participants who gave consent subsequently responded anonymously to the questionnaire.

### Study participants and sampling

A summary of the purpose of the study and informed consent were provided to the respondents on the front page of the questionnaire. Participants were assured that their participation was voluntary and anonymous. Access to the questionnaire was allowed only to participants who provided their consent by checking a box, made for this purpose, on the questionnaire. A total of 654 students from various Moroccan universities voluntarily participated.

The survey consisted of three sections. The first section was related to general characteristic data, including information about sociodemographic characteristics (age, sex, marital status, transportation, socioeconomic status, and living during school years). The second section corresponded to the French version of the Figure Rating Scale (FRS) to measure body image satisfaction, and the third section was about the French version of the Rosenberg Self-Esteem Scale (RSES) related to self-esteem. The reliability of the questionnaires was also checked using Cronbach's alpha test, and a value of 0.95 was obtained, which exhibited a very good validity.

Participants were Moroccan female and male students aged between 18 and 30 years, and without psychiatric and/or chronic physiological disease or physical appearance-related disease. To estimate the sample size, we used the formula of two independent samples for a comparative cross-sectional study:

$$n = \frac{\sigma^2 \left( Z_{1-\beta} + Z_{\frac{1-\alpha}{2}} \right)^2}{\Delta^2}$$

Based on previous findings, the average self-esteem difference between females and males was about  $\Delta = 1.1$  with a standard deviation around  $\sigma^2 = 72$ .<sup>[15,16]</sup> With a study design of a ratio of female to male equal to 1, and for a 95% confidence interval ( $\alpha = 0.05$ ) and statistical power of 80% ( $\beta = 0.2$ ) and a minimum difference to be detected of  $\Delta = 1.0$ , the minimum number of students to interview in each group (female and male) was  $n = 278$ . With an expected proportion (30%) of incomplete responses, the maximum number of target participants was 722 (361 females and 361 males).

### Data collection tools and technique

#### Body image perception

Body image perception was assessed by the FRS developed by Stunkard *et al.*<sup>[17]</sup> FRS consisted of nine silhouettes presenting body shape images ranging

from 1 to 9 where 1 is the thinnest body type and 9 is the fattest. Students were asked to mark the figure they resemble (perceived body size), and then, the figure they would want to look like (ideal body size). To examine student's body satisfaction, we used the protocol of Lynch and their colleagues.<sup>[18]</sup> Categorical variable was created based on the difference between self-body size and ideal body size: too small (self-ideal  $\leq -1$ ), satisfied (self = ideal), a bit too large (self-ideal = 1), and much too large (self-ideal  $> 1$ ). Body mass index (BMI) is a measure of body fat based on height and weight. It was calculated for participants through the formula (bodyweight in kilograms divided by height in meters squared), and the BMI results were categorized as follows<sup>[19]</sup>: (BMI  $< 18.5$ , underweight; 18.5–24.9, normal weight; 25–29.9, overweight; and  $\geq 30$ , obesity).

### Self-esteem tool

To measure self-esteem, the RSES was used.<sup>[20]</sup> The RSES comprises 10 items assessing the positive (five items) and negative (five items) aspects of self-esteem. Answers were made using a 4-point Likert scale ranging from “strongly agree”<sup>[3]</sup> to “strongly disagree” (0). Negatively worded items were recoded, so that higher scores reflected more positive self-esteem. The total score was calculated by summing the individual item scores; higher scores (0–30) indicated higher self-esteem. The RSES is widely used and has high internal reliability ( $\alpha = 0.96$ ) and validity.<sup>[12]</sup> Regarding the common way of interpreting the results of the RSS, the global score, that is, the total score, after summing the points corresponding to all the items in the scale, guides us to 3 possible levels of self-esteem: Values between 15 and 25 are considered normal, and values below 15 and above 25 are indicative of low and high self-esteem, respectively.<sup>[20,21]</sup>

### Data analysis

Data analysis was performed using the Software Statistical Package for the Social Science (SPSS) version 23.0. Variables used to measure the general characteristics of the study sample were summarized by frequency and percentages. Students' body size satisfaction variables were summarized by percentages and means (standard deviation), respectively. The comparison between the groups' means was conducted using the Student and analysis of variance (ANOVA) tests. The association between the self-esteem independent variable and the independent variables (general characteristics and body size satisfaction) was using multiple linear regression. All statistical tests were conducted at a significance level  $\alpha = 0.05$ .

### Ethics statement

This study was approved by the local committee of the institutional review board of Hassan First University according to Moroccan law 28\13-art. 2, and met the

intent and requirements of the Helsinki Declaration of Ethics.

## Results

The final sample size was 654 university students (363 females and 291 males) [Table 1]. The majority of male and female students were aged between 18 and 25 years (76.29% and 74.11%, respectively). More than half of the students had a medium socioeconomic status (89.53% for females and 80.41% for males). Concerning marital status, 87.28% of male students were single versus 72.18% of females. Regarding transportation, 51.88% of male students and 47.95% of females went to university by bus or taxi, and 27.82% of female students versus 24.74% of males went by car or carpooling. About half of males (46.54%) and 67.50% of females lived with their families.

To examine the student's body satisfaction, categorical variable was created based on the difference between self-body size and ideal body size: too small (self-ideal  $\leq -1$ ), satisfied (self = ideal), a bit too large (self-ideal = 1), and much too large (self-ideal  $> 1$ ). Overall, we found that 35.02% of students were feeling too small; then, 31.65% were satisfied with their body size. Likewise, 38.02% of females were feeling a bit too large and much too large; conversely, 46.39% of males were feeling too small. In addition, a good correlation was observed between the BMI and the body size satisfaction. Students with the lowest BMI were feeling too small and those with the highest BMI were feeling a bit or much too large [Table 2].

Regarding self-esteem, the mean score was 23.50 with a standard deviation of 4.8, and this score was classified

**Table 1: General characteristics of the study sample (n=654)**

Variables		Gender n (%)	
		F	M
Age	18-25	269 (74.11)	222 (76.29)
	26-30	94 (25.89)	69 (23.71)
Socioeconomic status	Low	27 (7.43)	35 (12.03)
	Medium	325 (89.53)	234 (80.41)
	High	11 (3.04)	22 (7.56)
Marital status	Single	262 (72.18)	254 (87.28)
	Married	101 (27.82)	37 (12.72)
Mean of transport	On foot	63 (17.36)	45 (15.46)
	Moto/bicycle	25 (6.89)	23 (7.90)
	Car/carpooling	101 (27.82)	72 (24.74)
	Taxi	78 (21.50)	48 (16.49)
	Bus	95 (26.45)	103 (35.39)
Living during scholarly years	University residency	13 (3.58)	45 (15.46)
	Collocation	105 (28.93)	110 (37.80)
	Family residency	245 (67.50)	136 (46.74)

**Table 2: Students' body size satisfaction**

Body size satisfaction	Overall		Female		Male	
	<i>n</i> (%)	BMI Mean (SD)	<i>n</i> (%)	BMI Mean (SD)	<i>n</i> (%)	BMI Mean (SD)
Too small	229 (35.02)	20.73 (2.56)	94 (25.90)	20.10 (2.70)	135 (46.39)	21.17 (2.37)
Satisfied	207 (31.65)	22.81 (3.55)	131 (36.08)	22.95 (3.78)	76 (26.12)	22.55 (3.11)
A bit too large	112 (17.13)	26.60 (11.53)	73 (20.11)	25.84 (2.83)	39 (13.40)	28.02 (19.23)
Much too large	106 (16.20)	27.12 (4.28)	65 (17.91)	28.26 (3.89)	41 (14.09)	25.32 (4.31)

as normal. Generally, students with normal self-esteem were satisfied with their body image, and students with the lowest scores of self-esteem were feeling too small or much too large. Also, we observed that male students had less self-esteem than females. Table 3 shows that general characteristics and body perception were related to self-esteem and sex. Indeed, socioeconomic level, marital status, and students' place of residence during scholarly years were significantly associated with self-esteem and sex [Table 3]. Male students with low socioeconomic level, single students, and students who were living in university residency had less self-esteem than others.

The results of the univariate analysis for the association between self-esteem scores and both sociodemographic and body image perception characteristics among students showed that sex, transport, and BMI class were not statistically associated with self-esteem. Therefore, these variables were examined in the multivariable analysis. Multiple linear regression showed that age, socioeconomic level, marital status, living during scholarly years, and body image perception were the most important predictors of self-esteem [Table 4].

## Discussion

This study was undertaken to highlight the relation between self-esteem and body size satisfaction taking into account the sex differences.

Considering the body size satisfaction, the perception was in the opposite direction for male versus female students. We found that male students were feeling "too small" and female students were feeling "too large." This indicates that women would wish to lose weight and men would wish to be larger. Lynch *et al.*<sup>[18]</sup> found the same findings where 88% of the men answering body size perception hoped to be larger. In another study, Lynch *et al.*<sup>[18]</sup> showed that men who felt too small gained more weight than those satisfied by their body size. Probably, culture, upbringing, societal stature, and media may be some predominant factors behind body image perception; in many societies, thinness is often associated with beauty and desirability for women. This may be reinforced by media and cultural norms that promote thinness as an ideal body type, leading some women to feel pressure to conform to this standard.<sup>[22,23]</sup>

However, men are often encouraged to be larger and more muscular, which can be seen as a sign of physical strength and virility. This can be reinforced by cultural ideals of masculinity that value physical prowess and muscularity.<sup>[24]</sup>

The findings of the RSES demonstrated that the mean score of self-esteem was 23.50 (sd = 4.8), and this score was classified as the normal range.<sup>[21]</sup> A healthy level of self-esteem can promote academic achievement, social skills, and overall well-being. However, low self-esteem can lead to negative outcomes, such as academic underachievement, social withdrawal, and mental health issues. Another study demonstrated that high self-esteem is reported as an important protective factor for well-being.<sup>[6]</sup>

Previous studies have affirmed the correlation between self-esteem and body appreciation parameters in several countries, China's undergraduate students,<sup>[25]</sup> and Oman.<sup>[14]</sup> Our results showed that there was no significant difference between self-esteem and body size satisfaction in relation to gender difference, and the same constant was observed in a sample of students from the United States.<sup>[5]</sup>

Results were generally consistent with previous research indicating that females reported higher levels of self-esteem than males.<sup>[26,27]</sup> Conversely, in studies conducted in Canada and Pakistan, the researchers found that females have lower scores of self-esteem than males.<sup>[28,29]</sup> Likewise, the results of the study are in line with a research team from Pakistan, they proved that there is a positive association between self-esteem and marital status among students,<sup>[30]</sup> and the same finding was observed among women in Iran.<sup>[31]</sup> Improving self-esteem among university students should be considered an important mental health problem not only by parents, university professors, and principals but also by policymakers in the education and health sectors in Morocco.

Several other factors conditioned the development of self-esteem. Our results confirm the findings of previous studies,<sup>[32]</sup> namely, that socioeconomic and marital status were significantly associated with self-esteem taking into account sex differences. Low socioeconomic level, single status, and university residency were



**Table 3: Association between self-esteem and general characteristics and body size satisfaction in relation to gender**

Variables	Self-esteem Mean (SD)		
	Male	Female	P*
Age			
18-25	18.66 (4.51)	20.00 (4.90)	0.680
26-30	18.71 (4.52)	20.40 (4.82)	
Socioeconomic status			
Low	15.22 (3.70)	19.89 (3.95)	<b>0.005<sup>a</sup></b>
Medium	19.21 (4.35)	20.05 (5.01)	
High	19.32 (5.10)	22.18 (2.36)	
Marital status			
Single	18.79 (4.47)	19.68 (4.99)	<b>0.029<sup>b</sup></b>
Married	18.29 (4.77)	21.21 (4.40)	
Mean of transport			
On foot	18.15 (4.64)	19.74 (4.51)	0.180
Moto/bicycle	19.76 (4.11)	20.12 (5.63)	
Car/carpooling	19.56 (4.74)	21.54 (4.42)	
Taxi	19.54 (4.21)	19.10 (4.93)	
Bus	17.70 (4.34)	19.52 (5.08)	
Living during scholarly years			
University residency	15.35 (3.09)	19.15 (7.04)	<b>0.049<sup>c</sup></b>
Collocation	19.46 (4.51)	20.26 (4.41)	
Family residency	19.13 (4.52)	20.09 (4.95)	
Self-ideal			
Too small	19.25 (4.43)	20.10 (4.86)	0.747
Satisfied	18.76 (4.08)	19.91 (5.25)	
A bit too large	19.51 (4.32)	20.58 (4.52)	
Much too large	17.89 (4.90)	25.00 (1.41)	
BMI classifications			
<18.5	19.67 (4.63)	19.36 (4.48)	0.167
18.5-24.9	19.36 (4.11)	20.27 (4.95)	
25-29.9	18.47 (5.04)	18.33 (4.57)	
>30	17.21 (3.39)	25.00 (1.41)	

\*ANOVA TWO WAYS. Significant *P* values (*P*<0.05) are bold. <sup>a</sup>low socioeconomic status, <sup>b</sup>married marital status, <sup>c</sup>university residency

**Table 4: Multiple linear regression of the self-esteem on sociodemographic and body image perception characteristics in students (n=654)**

Variables	Self-esteem		
	$\beta$ [95% CI]	<i>t</i>	<i>P</i>
Sex	-0.006 [-0.0750; 0.478]	-0.157	0.876
Age	0.078 [1.1900; 0.459]	2.591	<b>0.010</b>
SES	0.440 [4.431; 0.445]	9.965	<b>0.000</b>
Marital status	0.150 [2.351; 0.526]	4.471	<b>0.000</b>
Living during scholarly years	0.249 [2.351; 0.302]	7.120	<b>0.000</b>
Mean of transport	0.044 [0.243; 0.156]	1.556	0.120
BMI class	0.043 [0.367; 0.330]	1.111	0.267
Body image perception	-0.45 [-0.838; 0.194]	-4.322	<b>0.000</b>

*R*<sup>2</sup>=0.94;  $\beta$  standardized regression coefficient; 95% CI confidence interval. Significant *P* (*P*<0.05) are bold

among the risk factors related to less self-esteem than others. Most likely, students from low socioeconomic backgrounds may face financial stress and have limited access to resources, which can impact their self-esteem and social opportunities. Marital status and an intimate

relationship are of vital importance regarding mental well-being. Many studies have focused specifically on marriage, which has been found to be associated with better mental well-being compared to other relationship statuses, especially among men.<sup>[33]</sup> This is similar to our findings, which demonstrated that married students had high self-esteem.

Finally, self-esteem interventions need to take possible differences between participants (e.g., age, sex, ethnicity, or type of problems) into account. It is important for universities and educators to create a supportive and inclusive environment that promotes positive self-esteem in students. This can include encouraging positive self-talk, providing opportunities for success and recognition, fostering positive relationships, and addressing issues related to bullying and discrimination.

### Limitations

Our study is considered a preliminary study, and our results must be confirmed in a longitudinal design.

### Conclusion

The contribution of gender to the relation between socioeconomic status and self-esteem may have important implications for the design of health promotion programs aimed at the reduction of socioeconomic differences in adverse health behavior. Male students of low socioeconomic status seem to be a more vulnerable group in comparison with their peers of normal and higher socioeconomic status. As well, male students had less self-esteem than others. It is advisable to conduct further longitudinal to determine the determinant factors of self-esteem in relation to direction of the association between the frequency of connections to body dissatisfaction/disordered eating behaviors. Researchers may also consider culturally relevant factors that may differentially influence such behaviors.

### Author contributions

All authors have critically reviewed and approved the final draft and are responsible for the content and similarity index of the manuscript.

### Ethical approval

This study was approved by the local committee of institutional review board of Hassan First University according to Moroccan law 28\13-art. 2, and met the intent and requirements of the Helsinki Declaration of Ethics.

### Informed consent statement

Informed consent was obtained from all subjects involved in the study. The confidentiality of personal data was guaranteed, and all results were processed anonymously.

Participants are assured that the information of the individuals will not be disclosed and the results will be announced only for scientific principles without the names of individuals.

### Data availability statement

Data are available upon request by contacting the corresponding author

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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