

# Body and Health Perception for Obesity in Young Adults

ORIGINAL

Raquel Sampaio Florêncio<sup>1</sup>, Ana Caroline Andrade Oliveira<sup>2</sup>,  
Jênifa Cavalcante dos Santos Santiago<sup>3</sup>,  
Danilo Cunha Ribeiro<sup>4</sup>, Ítalo Lennon Sales de Almeida<sup>5</sup>,  
Vera Lúcia Mendes de Paula Pessoa<sup>6</sup>,  
Thereza Maria Magalhães Moreira<sup>7</sup>

- 1 Nurse. Performing Doctor at State University of Ceará.
- 2 Graduation Student at State University of Ceará.
- 3 Nurse. Doctor in Clinical Care in Health and Nursing at State University of Ceará. Professor of the Department of Nursing of the Federal University of Ceará.
- 4 Physical Education Professional. Professor of the Social Service of Commerce.
- 5 Nurse. Performing Master in Public Health at State University of Ceará.
- 6 Nurse. Performing PhD in Nursing at Federal University of Ceará. Professor of the Department of Nursing of the State University of Ceará.
- 7 Nurse. PhD in Public Health at University of São Paulo (USP). Professor of the Department of Nursing of the State University of Ceará.

## Abstract

**Background:** To identify the body and health perception and its relationship with obesity in a group of young adults.

**Methods:** This is an analytical study performed on 1,073 young adults from Fortaleza, Ceará, Brazil, through a questionnaire whose data were analyzed by descriptive statistics and logistic regression. The Ethics Committee approved the study under opinion n° 263.271/ 2013.

**Results:** Results showed that women with obesity tended to perceive their condition more and evidenced greater body dissatisfaction than men. In addition, they were associated with obesity, self-perception of overweight and body satisfaction.

**Conclusion:** Young people with obesity perceive their condition and are dissatisfied with it.

## Contact information:

**Raquel Sampaio Florêncio.**

**Address:** Universidade Estadual do Ceará. Avenida Silas Munguba, 1700. Fortaleza, CE, Brasil.

✉ [raquelsampy@hotmail.com](mailto:raquelsampy@hotmail.com)

## Keywords

Obesity; Body Image; Young Adult.

## Introduction

The world population started to face several daily changes with the advent of modernization and this process resulted in a set of facilities for all. However, this reflected negatively in eating habits, practice of

physical activity and propitiated the development of daily stress-related psychological problems, ensuing serious public health issues.

These changes have transformed the nutritional and life profile of countries around the world, including Brazil. The overview of the nutritional development of the Brazilian population also followed these modifications, that is, while the prevalence of obesity in children and adults has increased at a fast pace, the occurrence of malnutrition declined [1].

Overweight is already recognized as a global epidemic and its estimates have grown especially in developing countries and at an earlier age. According to the Brazilian Association for the Study of Obesity, the projection is that by 2025, about 2.3 billion adults shall be overweight and over 700 million obese. The number of overweight and obese children in the world could reach 75 million if nothing is done [2].

In Brazil, the prevalence of obesity exceeds 15% in children and adolescents [3, 4]. Regarding adults, a study by the Surveillance of Risk Factors and Protection for Chronic Diseases by Telephone Inquiry (VIGITEL) showed that this prevalence reached 17.9% [5]. More specifically, within this population, 9.4% of young adults are already obese [6].

As seen, its prevalence is high and worrying, becoming evident in the scenario of epidemiological and political discussions, mainly because it presents as a trigger for several other chronic, noninfectious diseases (CNID) [7]. Concern over the prevention of these diseases and body image has led people to increase their physical activity, to consume low-fat foods, indicating that the population is seeking healthier habits.

However, dissatisfaction with body self-image and/or changes in self-perception of health have given rise to some harmful effects and have been associated with eating disorders [8]. In those who are already overweight, this condition can lead to psychological changes and cause a distorted self-

image, causing the individual to overestimate or underestimate their weight.

Distortions can influence the pursuit of strategies that may potentially undermine the health of overweight people, for example, the development of other eating disorders, especially among the younger population. This situation could be corroborated in a study with young adults, where young adults' self-perception of overweight suffered distortions in relation to the real body situation [6], characterizing a health vulnerability. Authors who study the subject [9] stated that the exaggerated preoccupation with weight and body image induces a body goal idealized by improper methods, opting for overly restrictive and harmful health diets.

In many cases, the hindrances of losing weight are not only linked to eating disorders, but are also related to psychic issues. The possible psychological changes in the group of people with obesity have been object of scientific interest. However, there was no consensus regarding a profile [10].

Thus, we understand that the identification of these image distortions and positive self-perception of health in a disease situation or not may lead the health professional to formulate care strategies that seek to minimize conditions that make health vulnerable. Therefore, this study aimed to identify health and body perception and their relationship with obesity in a group of young adults.

## Methods

This is a quantitative analytical study conducted in state schools in Fortaleza, Ceará, Brazil. The universe consisted of young adult students in the municipality, that is, those between the ages of 20 and 24, according to the World Health Organization (WHO) and the Brazilian legal framework that contextualizes the Statute of the Child and Adolescent) in the area of adolescent and youth health [11]. Considering that the number of students was unknown, we decided to define the sample based on the cal-

ulation for infinite populations, according to the following formula:  $n = (z^2_{5\%} \times P \times Q)/e^2$ .

Where:  $n$  is the sample;  $t$  is the Student  $t$  distribution value or significance level ( $t = 1.96$ );  $P$  is the prevalence of the phenomenon (considered here at 50%, since it is unknown in the age group under study);  $Q$  is the complementary percentage of  $P$  ( $Q = 100 - P$ ); and " $e$ " is the sample error (here considered at 3%). Based on the result of the calculation, we obtained an initial sample of 1,067 young adult students and a final sample of 1073. We considered the addition of six youngsters in the last school, because they fitted the study profile, accepted to participate in the study and could cater for possible losses after building the database.

Bearing in mind the number of students participating, the sample plan was organized in sample units (UA): Primary sampling unit (regional administrative districts), secondary sampling unit (30% draw of schools) and tertiary sampling unit (selection of students for convenience). In the primary sampling unit, we considered six of the seven regional administrative districts of Fortaleza (CE), Brazil. With regard to the secondary units, a previous draw of 30% of the schools of each regional district was established, reaching a total of 52 schools.

The proportion of the secondary unit was established after the realization that the number of viable schools for visitation in the period of one week would be two institutions, considering time required to contact school managers and raising awareness for the study.

Subsequently, we counted feasible weeks of class for the researchers from October 2013 to October 2014, considering holidays, bi-monthly assessments and Soccer World Cup. In all, there were 26 weeks and consequently 52 schools visited and study participants, or 30% of all schools. Once the percentage was determined, institutions were drawn. We selected youngsters based on convenience sampling, because the lists of students in the study age range were not made available in a timely manner, making

a random sample and stratified sampling unfeasible.

We used a questionnaire to collect data on sociodemographic variables, verification of anthropometric measures and variables related to health and body perception. We performed anthropometric measurements in a standardized way. For height, subjects remained standing with their feet together and arms extended along the body and without shoes, using inextensible tape measure adhered to a wall without skirting. We determined weight with an electric or anthropometric adult scale, with the participant standing with arms next to the body with the least weight of clothes possible and without shoes.

As soon as collected, we used data of the three phases to construct the database in a specific software. We initially calculated measures of descriptive statistics: simple frequency and proportion of qualitative variables. Then, we employed bivariate and multivariate analytical statistics in variables' crossover, with statistical tests according to the type of variable.

In the bivariate analysis, we performed Pearson's chi-square test for the categorical variables, considering the level of statistical significance of 5%. We calculated the odds ratio (OR) with a 95% confidence interval to estimate the strength of association.

In the multivariate analysis, the statistical procedure for adjusting the potential confounding effects was simple logistic regression. For inclusion in the initial regression model, we used the  $p < 0.20$  value obtained in the bivariate analysis. In the next step, the initial hierarchical model, we used  $p$ -value  $< 0.05$  as the inclusion criterion. In addition, data entry method in all phases of the regression was forced entry (enter).

Data were processed and analyzed in the International Business Machines Statistics Package Social Science, version 23.0 (IBM SPSS 18.0). As soon as analyzed, they were shown in boxes, tables and charts in order to make clear the dissemination and organization of the information as proposed by the

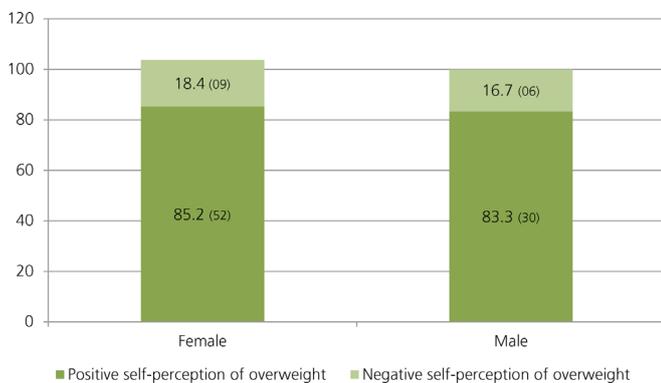
objectives. Subsequent to this presentation, results were discussed according to the literature reviewed and relevant to the subject under study.

The Research Ethics Committee, State University of Ceará, approved this project under protocol number 263.271/2013.

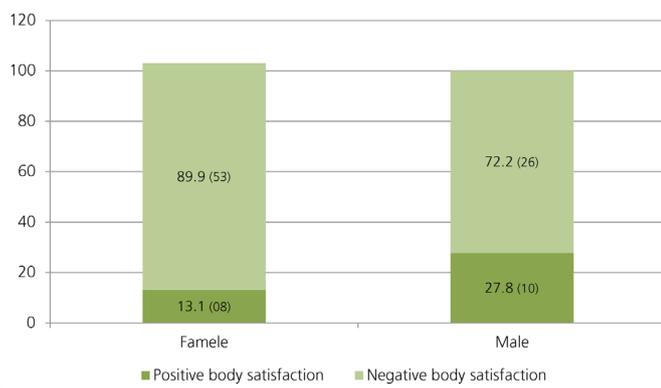
## Results

Based on data analysis, we observed that slightly more than half of youngsters were women (52.7%) and were satisfied with their body (53.1%); most positively self-perceived their health (60.6%) and did not consider themselves overweight (68.3%).

**Figure 1:** Sex and obesity, by self-perception of overweight in young students. Fortaleza, Ceará, Brazil, 2018.



**Figure 2:** Sex and obesity, by body satisfaction in young students. Fortaleza, Ceará, Brasil, 2018.



According to **Figure 1**, women (85.2%) who were obese perceived their condition better when compared to men (83.3%), and this ratio was statistically significant ( $p = 0.000$ ).

In **Figure 2**, we observed that women with obesity (89.9%) were more dissatisfied with the body than men (72.2%), and this ratio was also significant ( $p = 0.000$ ).

When the relationship between health and body perception was correlated with obesity, there was a higher proportion of women, negative self-perception of health, positive self-perception of overweight and body dissatisfaction in the group of obese youths. These relationships were statistically significant as shown in **Table 1**.

In spite of what has been presented, some relevant questions must be considered: as regards self-perception of overweight, we found that young adults with obesity evidenced a distorted body perception, where 15.5% said they did not think they were overweight; in addition, 18.6% said they were satisfied with their body and almost half (47.8%) positive assessed their health.

**Table 1.** Relationship between sex, health perception and body satisfaction according to obesity. Fortaleza, Ceará, Brazil, 2018.

Variables	Obesity				p
	Yes		No		
	f	(%)	f	(%)	
Gender					
Female	62	63.3)	496	51.7)	0.029
Male	36	36.7)	463	48.3)	
Self-perception of health					
Positive	44	47.8)	598	62.8)	0.005
Negative	48	52.2)	354	37.2)	
Self-perception of overweight					
Yes	82	84.5)	245	25.7)	0.000
No	15	15.5)	708	74.3)	
Body satisfaction					
Negative	79	81.4)	409	43.0)	0.000
Positive	18	18.6)	543	57.0)	

**Table 2.** Stages of logistic regression associating different variables to obesity in young students. Fortaleza, Ceará, Brazil, 2018.

Variables	Obesity					
	ORb	CI 95%	ORa <sup>1</sup>	CI 95%	ORa <sup>2</sup>	CI 95%
Gender						
Female	1.608	1.046-2.471*	1.276	0.775-2.101	-	
Male	1	1	-	48.3		
Self-perception of health						
Positive	0.543	0.353-0.834*	1.004	0.624-1.615	-	
Negative	1	1	-	37.2		
Self-perception of overweight						
Yes	15.798	8.941-27.913*	12.251	6.504-23.073*	11.398	6.227-20.863*
No	1	1	1	74.3		
Body satisfaction						
Negative	5.827	3.437-9.877*	2.295	1.252-4.207*	2.241	1.253-4.005*
Positive	1	1	1	57.0		

\* P-value < 0.05; ORb gross odds ratio; ORa<sup>1</sup> adjusted odds ratio – model 1; ORa<sup>2</sup> adjusted odds ratio – model 2

When assessing the existence of confounding factors, we performed the logistic regression, as shown in **Table 2**.

Based on **Table 2**, self-perception of overweight and body satisfaction remained in the final regression model, that is, self-perceived overweight young adults were 11.398 times more likely of actually being obese, and those who were dissatisfied with their body were 2.241 more likely of showing the complaint at hand, regardless of gender and self-perception of health.

## Discussion

Women were more aware of their overweight condition in this study than in other literature [12, 13] that show women as having the most distorted body perception. There is evidence that women tend to be at increased risk for inappropriate behavior related to body image distortion when compared to men. This difference may be due to the type of population and region where the studies were conducted, showing that this issue has several determinants which need to be explored [14].

Regarding body satisfaction, there seems to be consensus on the fact that women with obesity show greater dissatisfaction than men [15, 16]. This characteristic, resulting from body perception, may reflect negative feelings as seen in a study with obese people followed-up in an outpatient clinic, where sadness, shame and isolation were part of the main reports [17].

Regarding **Table 1**, we observed that a significant portion of young people with obesity stated that they did not feel overweight, identifying an individual self-perception failure, which can lead them to develop several diseases associated with this condition. Self-perception of overweight is distorted in relation to the actual body situation and therefore makes the young adult vulnerable to dysfunctional health conditions [6].

Although there is a portion of this population with a distorted perception of its own weight, most young people with obesity in this study perceive their condition and this makes healthy behaviors more likely, which should be encouraged. In a study on obese people's perception on the body image, while negative body image predominated in the res-

pondents' discourse, some individuals approved of their image and acceptance of their body was strengthened by positive feedback from people in their social context [17]. However, this perception makes young people feel dissatisfied with their body in the face of a culture that idealizes the lean and slim body.

Body image dissatisfaction before overweight exists in most individuals, not only in the nutritional status of overweight and obesity, as expected, but also in a situation of eutrophy [18]. This dissatisfaction is noted in several groups, be they adolescents, university students and young adults. Overweight adolescents, university students and young adults were more likely of feeling body dissatisfaction [6, 19, 20]. This fact corroborates with the results of this study, confirming the need to identify and intervene in these groups.

In view of these observations, health professionals and family members must be aware of the behaviors of these young people, since those who have high body dissatisfaction evidence greater anxiety and depressive symptoms, as well as a greater amount of weight control conducts since the adolescence phase [19].

As brought in the study, obesity generates important repercussions with regard to body image. However, the study was limited to the association, since its cross-sectional nature prevents us from knowing whether obesity caused the body dissatisfaction or vice-versa. We suggest further longitudinal studies on the subject to explain the possible causal relationship.

## Conclusion

Young people who are obese realize their condition. However, they are dissatisfied with it. This characteristic should be considered when health professionals plan health promotion activities. Health professionals must be sensitive to identify this condition, intervene as much as possible and refer specific

cases. In addition, approaching young people must be established in several settings always with active listening, since the population in this age group tends not to seek health services.

## Acknowledgements

To the directors, coordinators, teachers and students of the public schools who received us in their schools, thank you very much.

## Financing

The study was funded by the National Council for Scientific and Technological Development, linked to the Ministry of Science, Technology, Innovation and Communications of Brazil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Rodrigues RSN, Cavalcanti AMTS, Silva TM. Nursing diagnoses in overweight adolescents. *Rev. Rene.* 2013; 14(1):187-198. Available from: <http://www.revistarene.ufc.br/revista/index.php/revista/article/view/801/pdf>
2. Brazilian Association for the Study of Obesity. Obesity map. São Paulo, 2014. Available from: <http://www.abeso.org.br/atidade-saudavel/mapa-obesidade>.
3. Aiello AM, Marques de Mello L, Souza Nunes M; Soares da Silva A; Nunes Altaçílio. Prevalence of obesity in children and adolescents in Brazil: a meta-analysis of cross-sectional studies. *Curr. Pediatr. Rev.* 2015; 11(1):36-42. Available from: [https://www.researchgate.net/publication/275835070\\_Prevalence\\_of\\_Obesity\\_in\\_Children\\_and\\_Adolescents\\_in\\_Brazil\\_a\\_Meta-Analysis\\_of\\_Cross-Sectional\\_Studies](https://www.researchgate.net/publication/275835070_Prevalence_of_Obesity_in_Children_and_Adolescents_in_Brazil_a_Meta-Analysis_of_Cross-Sectional_Studies)
4. Araújo VC, Konrad LM, Rabacow FM, Graup S, Amboni R, Farias Júnior JC. Prevalence of overweight among Brazilian adolescents: a systematic review study. *Rev Bras Ativ. Fis. Saúde.* 2007; 12(3):79-87. Available from: <https://periodicos.ufpel.edu.br/ojs2/index.php/RBAFS/article/view/825/832>
5. Malta DC, Stopa SR, Iser BPM, Bernal RTI, Claro RM, Nardi ACF et al. Risk factors and protection for chronic diseases by telephone survey in Brazilian capitals, Vigitel 2014. *Rev. Bras. Epidemiol.* [internet]. 2015; 18(suppl 2):238-255. Available from: [http://www.scielo.org/scielo.php?script=sci\\_arttext&pid=s1415-790x2015000700238&lng=en](http://www.scielo.org/scielo.php?script=sci_arttext&pid=s1415-790x2015000700238&lng=en).

6. Florêncio RS, Moreira TMM, Silva MRF, Almeida ILS. Overweight in young adult students: the vulnerability of a distorted self-perception of body image. *Rev. Bras. Enferm.* [internet]. Apr 2016; 69(2):258-265. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=s0034-71672016000200258&lng=pt](http://www.scielo.br/scielo.php?script=sci_arttext&pid=s0034-71672016000200258&lng=pt).
7. Oliveira GMM, Martins WA. The price of obesity. *Rev. Bras. Cardiol.* Jul-Ago 2013; 26(4):238-40. Available from: <http://www.rbconline.org.br/artigo/o-preco-da-obesidade/>
8. Marques RS, Oliveira AP, Assis MR. Prevalence of body image dissatisfaction among physical education students. *Corpus et Scientia.* Jan. 2013; 9(1):65-78. Available from: <http://apl.unisuam.edu.br/revistas/index.php/corpusetscientia/article/view/254/201>
9. Zordão OP, Barbosa A, Parisi TS, Grasseli CSM, Nogueira DA, Silva RR. Association of body image and eating disorders in adolescents in Minas Gerais (Brazil). *Nutr. Clin. Diet. Hosp.* 2015; 35(2):48-56. Available from: <http://revista.nutricion.org/PDF/352pizetta.pdf>
10. Baile JI, González MJ. Comorbilidad psicopatológica en obesidad. *An. Sist. Sanit. Navar.* 2011; 34:253-61. Available from: [http://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S1137-66272011000200011](http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1137-66272011000200011)
11. Ministry of Health (BR). Department of Health Care. Adolescent and Youth Health Area. Legal framework: health, a right of adolescents. Brasília: Ministry of Health, 2007. Available from: [http://bvsms.saude.gov.br/bvs/publicacoes/07\\_0400\\_M.pdf](http://bvsms.saude.gov.br/bvs/publicacoes/07_0400_M.pdf)
12. Lee J, Lee Y. The association of body image distortion with weight control behaviors, diet behaviors, physical activity, sadness, and suicidal ideation among Korean high students: a cross-sectional study. *BMC Public Health.* 2015; 16:39. Available from: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-016-2703-z>
13. Mchiza ZJ, Parker W, Makoe M, Sewpaul R, Kupamupindi T, Labadarios D. Body image and weight control in South Africans 15 years or older: SANHANES-1. *BMC Public Health.* 2015; 15(992):1-11. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4588465/>
14. Nilson G, Pardo ER, Rigo LC, Hallal PC. Mirror, mirror on the wall: a study on body image of university students. *Rev. Bras. Ativ. Fis. e saúde.* 2013; 18(1):112-120. Available from: <https://periodicos.ufpel.edu.br/ojs2/index.php/RBAFS/article/view/2402/pdf49>
15. Serrano SQ, Vasconcelos MGL, Silvia GAP, Cerqueira MMO, Pontes CM. Percepción de los adolescentes obesos respecto de los efectos de la obesidad en su salud. *Rev. Esc. Enferm. USP* [online]. 2010; 44(1):25-31. Available from: <http://www.scielo.br/pdf/reeusp/v44n1/a04v44n1.pdf>.
16. Maruf FA, Akinpelu AO, Nwankwo MJ. Perceived body image and weight: discrepancies and gender differences among University undergraduates. *African Health Sciences.* Dec 2012; 12(4):464-72. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3598287/>
17. Macedo TTS, Portela PP, Palamira CS, Mussi FC. Obese people's perception of their own bodies. *Esc. Anna Nery Jul-Sep.* 2015; 19(3):505-10. Available from: <http://www.scielo.br/pdf/ean/v19n3/1414-8145-ean-19-03-0505.pdf>
18. Santos CC, Poll FA, Molz P. Relationship between nutritional status, body image perception and eating behavior of schoolchildren from Santa Cruz do Sul, RS. *Cinergis.* 2016; 17(4):330-335. Available from: <https://online.unisc.br/seer/index.php/cinergis/article/view/8066/5353>
19. Cruz-Sáez, MS, Jimeno AP, Włodarczyk A, Polo-López R, Odriozola EE. Insatisfacción corporal y conductas de control del peso en chicas adolescentes con sobrepeso: papel mediador de la ansiedad y la depresión. *Nutr. Hosp.* [Internet]. Ago 2016; 33(4):935-940. Available from: [http://scielo.isciii.es/scielo.php?script=sci\\_arttext&pid=S0212-16112016004400226&lng=es](http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S0212-16112016004400226&lng=es).
20. Frank R, Claumann GS, Pinto AA, Cordeiro PC, Felden EPG, Pelegrini A. Factors associated to body image dissatisfaction in Physical Education college students. *J. Bras. Psiquiatr.* [Internet]. Jun 2016; 65(2):161-167. Available from: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0047-20852016000200161&lng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0047-20852016000200161&lng=en)

### Publish in International Archives of Medicine

International Archives of Medicine is an open access journal publishing articles encompassing all aspects of medical science and clinical practice. IAM is considered a megajournal with independent sections on all areas of medicine. IAM is a really international journal with authors and board members from all around the world. The journal is widely indexed and classified Q2 in category Medicine.