



WWJMRD 2025; 11(02): 68-70
www.wwjmr.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017:
5.182 2018: 5.51, (ISI) 2020-
2021: 1.361
E-ISSN: 2454-6615

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Analysis of Body Composition of University Staff

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Abstract

This research aims to analyze body composition through data collected in the form of a questionnaire and body measurements using a stadiometer and scale. When checking the collected data, we found a large number of participants classified as overweight, obesity 1 and 2, and morbid obesity, with a greater amount of morbid obesity and obesity 2 among women, a group that therefore requires greater monitoring. As a form of classification, the BMI classification was used according to the following classifications: Underweight 1, normal, overweight, obesity 1, obesity 2, morbid obesity. Being: Underweight 1: M = 1.63%; normal: F = 43.9%, M = 24.59%; overweight: F = 24.39%, M = 49.18%; obesity 1: F = 9.75%, M = 21.31%; obesity 2: F = 14.63%, M = 1.63%; morbid obesity: F=7.31%, M=1.63%.

Keywords: Body composition, body mass index and university staff.

1. Introduction

Long working hours and high levels of responsibilities, which are common among university workers, influence diet and physical activity, as well as other lifestyle habits related to the health of individuals (GEHRING JUNIOR et al., 2007).

Obesity is a chronic disease with high prevalence worldwide. It is mainly attributed to changes in the population's eating and physical activity habits (GIGANTE et al., 1997).

To assess obesity, the most widely used anthropometric indicator is the body mass index (BMI), which is also a predictor of morbidity and mortality for several chronic diseases related to excess weight. However, controversial results relating BMI to cardiovascular risk have been found, since BMI does not assess the location of fat nor does it distinguish adipose tissue from muscle mass (KOSTER et al., 2008; ROMERO-CORRAL et al., 2006).

2. Materials and methods

This research presents a cross-sectional and correlational study design in which the sample was evaluated at only one point in time and the results were analyzed using statistical tests that relate the variables. The data analyzed were obtained from a cross-sectional study with university agents involved in various types of activities who perform their duties at the Santa Cruz campus and the CEDETEG campus of UNICENTRO.

Permanent workers listed on the list of university agents at the time of data collection were eligible to participate in the research. An anthropometric scale (OMRON HBF-514C) with 100 g precision was used to measure body mass, and a stadiometer (Cardiomed) was used to measure height. Body composition was measured using the same OMRON HBF-514C scale, which assesses the composition of fat percentage using the tetrapolar bioimpedance method. Data analysis was performed using descriptive statistics with mean, minimum and maximum standard deviation, in addition to frequency distribution. All analyses were performed using JASP software.

3. Results & Discussion

Based on the tables below, it can be seen that women have a higher average age (women: 46.29 years, men: 41.41 years), as well as a higher average body fat percentage compared to men (women: 30.85%, men: 24.65%, Table 1).

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Table 1: Descriptive statistics of university staff.

	Age		Body Mass		Stature		BMI		% Fat	
	F	M	F	M	F	M	F	M	F	M
Mean	46.29	41.41	73.71	82.84	1.61	1.73	28.25	27.37	30.85	24.65
Standard Deviation	7.48	9.06	18.77	14.56	0.04	0.07	7.32	4.43	6.97	5.94
Minimum	28	23	45.70	45.90	1.52	1.53	19.02	18.29	18.60	7.40
Maximum	65	65	126.30	126	1.73	1.92	51.23	46.28	45.40	40.60

When analyzing the BMI classification (Table 2), we see a greater number of men classified as overweight and obesity 1 (30 and 13) compared to women (10 and 4), however, we

found among women a greater number of classifications as morbid obesity and obesity 2 (3 and 6), against men classified as morbid obesity and obesity 2 (1 and 1).

Table 2: Frequencies of BMI classification.

	BMI	Frequency	Percentage
Female	Low Weight 1	0	0.00%
	Normal	18	43.90%
	Overweight	10	24.39%
	Obesity 1	4	9.75%
	Obesity 2	6	14.63%
	Morbid Obesity	3	7.31%
Male	Low Weight 1	1	1.63%
	Normal	15	24.59%
	Overweight	30	49.18%
	Obesity 1	13	21.31%
	Obesity 2	1	1.63%
	Morbid Obesity	1	1.63%

Based on the data cited above, it can be seen that, due to the higher rate of women with worse body fat percentage classifications and worse BMI classifications, a health and

physical activity monitoring system could be developed for employees, with greater attention to women.

Table 3: Frequency of body fat percentage classification.

	% Fat	Frequency	Percentage
Female	Very Poor	17	41.46%
	Poor	7	17.07%
	Below Average	8	19.51%
	Average	3	7.31%
	Above Average	3	7.31%
	Good	2	4.87%
	Excellent	0	0.00%
Male	Very Poor	8	13.11%
	Poor	15	24.59%
	Below Average	12	19.67%
	Average	12	19.67%
	Above Average	5	8.19%
	Good	4	6.55%
	Excellent	4	6.55%

When checking the data on the fat percentage classification described in Table 3, it can be seen that there is a greater number of women classified as “very poor” compared to men (17 and 8). Regarding the “poor” classification, there is a greater predominance among men, being (15) and women (7).

A similar result is also described by Duarte et al., (2009), which presents as results 6.3% of women classified as obesity 2, and 1.6% classified as obesity 3, while men present percentages of 4.6% for obesity 2, and 0% for obesity 3.

8. Conclusions

At the end of the data analysis, it can be seen that women present a greater health risk, as they have a higher percentage of participants classified as obesity 2 and

morbid obesity compared to men. Women also have a worse classification in terms of fat percentage when compared to men.

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