

ABSTRACTS



Overweight, central obesity and abdominal obesity in middle-age adults in an inland region of Northeast Portuguese: a pilot study

José Eduardo Teixeira (Centro de Investigação em Desporto, Saúde e Desenvolvimento Humano (CIDESD), Vila Real, Portugal & Departamento de Desporto e Educação Física, Instituto Politécnico de Bragança, Bragança, Portugal), **José A. Bragada** (Centro de Investigação em Desporto, Saúde e Desenvolvimento Humano (CIDESD), Vila Real, Portugal & Departamento de Desporto e Educação Física, Instituto Politécnico de Bragança, Bragança, Portugal), **João P. Bragada** (Unidade Local de Saúde do Nordeste – Unidade de Saúde de Santa Maria, Bragança, Portugal), **Joana P. Coelho** (Unidade Local de Saúde do Nordeste – Unidade de Saúde de Santa Maria, Bragança, Portugal), **Isabel G. Pinto** (Unidade Local de Saúde do Nordeste – Unidade de Saúde de Santa Maria, Bragança, Portugal), **Luís P. Reis** (Unidade Local de Saúde do Nordeste – Unidade de Saúde de Santa Maria, Bragança, Portugal), **Pedro M. Magalhães** (Departamento de Desporto e Educação Física, Instituto Politécnico de Bragança, Bragança, Portugal)

Background: The prevalence of central and abdominal obesity has been increasing over last decades in developed countries. As well, the high prevalence of obesity in Portugal has already been documented, however it is need to better understand the prevalence in each region of the country. Thus, the aim of this study was to evaluate the prevalence of the overweight, central obesity and abdominal obesity in middle-age in an inland region of Northeast Portuguese.

Methods: A descriptive and cross-sectional community sample was collected from two Portuguese primary health care centres between January 2019 and December 2020. A total of 673 individuals aged 40–65 years were included for analysis, among which 400 women (53.34 ± 7.33 years) and 273 men (53.01 ± 7.20 years). Prevalence of overweight, central obesity and abdominal obesity were analysed across sexes using body mass index and waist circumference. Categorical variables were expressed by counts and proportions with a 95% confidence interval (CI). Chi-squared test or fisher exact test were applied whenever appropriate. To compare continuous variables independent sample t-test or Mann-Whitney U test were used. Statistical significance was set at $p < 0.05$.

Results: The prevalence of overweight, central obesity and abdominal obesity in this cross-sectorial sample were 41.01%, 30.61% and 67.20%, respectively. Significant differences among men and women were found for abdominal obesity ($p < 0.001$). Women presented a higher prevalence of abdominal obesity (67.5%). Men have higher prevalence of overweight (48.72%) and central obesity (31.14%) than women (35.75% and 30.25%, respectively). However, differences were not statistically significant between sexes for overweight and central obesity ($p \geq 0.05$).

Conclusion: A higher prevalence of overweight, central obesity and abdominal obesity was reported for middle-age adults in this inland region of Northeast Portuguese. Our data suggest a higher prevalence of all three clinical conditions, comparing previous Portuguese epidemiological studies. Current report provides the study pilot for a more detailed epidemiological research. Also, preliminary findings emphasise the importance of implementing physical activity programmes and promoting healthy lifestyles to tackling this growing public health problem.

Acknowledgements: This article is a result of the project “GreenHealth – Digital strategies in biological assets to improve well-being and promote green health” (Norte-01-0145-FEDER-000042), supported by North Portugal Regional Operational Programme (NORTE 2020), under the PORTUGAL 2020 Partnership Agreement, through the European Regional Development Fund (ERDF).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. The experimental approach was approved and followed by the local Ethical Committee from North East Local Health Unit (CNPD nº2020/149).

References:

- Alberti, K. G. M. M., Eckel, R. H., Grundy, S. M., Zimmet, P. Z., Cleeman, J. I., Donato, K. A., Fruchart, J.-C., James, W. P. T., Loria, C. M., Smith, S. C., International Diabetes Federation Task Force on Epidemiology and Prevention, National Heart, Lung, and Blood Institute, American Heart Association, World Heart Federation, International Atherosclerosis Society, & International Association for the Study of Obesity. (2009). Harmonizing the metabolic syndrome: A joint interim statement of the International Diabetes Federation Task Force on Epidemiology and Prevention; National Heart, Lung, and Blood Institute; American Heart Association; World Heart Federation; International Atherosclerosis Society; and International Association for the Study of Obesity. *Circulation*, *120*(16), 1640–1645. <https://doi.org/10.1161/CIRCULATIONAHA.109.192644>
- Camões, M., Lopes, C., Oliveira, A., Santos, A. C., & Barros, H. (2010). Overall and central obesity incidence in an urban Portuguese population. *Preventive Medicine*, *50*(1), 50–55. <https://doi.org/10.1016/j.ypmed.2009.11.004>
- Carreira, H., Pereira, M., Azevedo, A., & Lunet, N. (2012). Trends of BMI and prevalence of overweight and obesity in Portugal (1995–2005): A systematic review. *Public Health Nutrition*, *15*(6), 972–981. <https://doi.org/10.1017/S1368980012000559>
- Dicker, D., Bettini, S., Farpour-Lambert, N., Frühbeck, G., Golan, R., Goossens, G., Halford, J., O'Malley, G., Mullerova, D., Ramos Salas, X., Hassapiou, M. N., Sagen, J., Woodward, E., Yumuk, V., & Busetto, L. (2020). Obesity and COVID-19: The Two Sides of the Coin. *Obesity Facts*, *13*(4), 430–438. <https://doi.org/10.1159/00051000>
- Misra, A., Wasir, J. S., & Vikram, N. K. (2005). Waist circumference criteria for the diagnosis of abdominal obesity are not applicable uniformly to all populations and ethnic groups. *Nutrition (Burbank, Los Angeles County, Calif.)*, *21*(9), 969–976. <https://doi.org/10.1016/j.nut.2005.01.007>
- Nevalainen, T., Kananen, L., Marttila, S., Jylhävä, J., Mononen, N., Kähönen, M., Raitakari, O. T., Hervonen, A., Jylhä, M., Lehtimäki, T., & Hurme, M. (2017). Obesity accelerates epigenetic aging in middle-aged but not in elderly individuals. *Clinical Epigenetics*, *9*(1), 20. <https://doi.org/10.1186/s13148-016-0301-7>
- Sardinha, L. B., Santos, D. A., Silva, A. M., Coelho-e-Silva, M. J., Raimundo, A. M., Moreira, H., Santos, R., Vale, S., Baptista, F., & Mota, J. (2012). Prevalence of Overweight, Obesity, and Abdominal Obesity in a Representative Sample of Portuguese Adults. *PLOS ONE*, *7*(10), e47883. <https://doi.org/10.1371/journal.pone.0047883>
- Tsigos, C., Hainer, V., Basdevant, A., Finer, N., Fried, M., Mathus-Vliegen, E., Micic, D., Maislos, M., Roman, G., Schutz, Y., Toplak, H., & Zahorska-Markiewicz, B. (2008). Management of Obesity in Adults: European Clinical Practice Guidelines. *Obesity Facts*, *1*(2), 106–116. <https://doi.org/10.1159/000126822>

Keywords: Obesity, Body Mass Index, Waist Circumference, Regional, Epidemiology