



Inadequacies of iron dietary intake of normal- and overweight young university students from Leicester, England.

Peña-Fernández A. ^{*1,2}, Higuera M. ³, Segura E. ³, Evans MD. ², Peña MA. ⁴

¹ Faculty of Medicine and Health Sciences, University of Alcalá, Ctra. Madrid-Barcelona, Km. 33.600, 28871 Alcalá de Henares, Spain.

² Leicester School of Allied Health Sciences, De Montfort University, Leicester, LE1 9BH, UK.

³ Scientific Computation & Technological Innovation Center (SCoTIC), Universidad de La Rioja, Logroño, Spain.

⁴ Faculty of Pharmacy, Universidad de Alcalá, Ctra. Madrid-Barcelona Km, 33.6, 28871 Alcalá de Henares, Spain.

Email: antonio.penafer@uah.es

SUMMARY

There is global concern regarding micronutrient malnutrition as this can affect different organ systems and development in humans, and can influence academic performance in young adults. Iron (Fe) deficiency is a public health concern in Western countries, including the United Kingdom (UK), being common in young women.

Aim: to assess the dietary intake of Fe in young adults at De Montfort University (DMU, UK), and the potential effect of ethnic background and body weight in the intake of this mineral.

POPULATION & STUDY DESIGN

Nutrient intake was collected from **111 (20.45 ± 1.17 yrs-old; 78 female)** DMU students from different ethnic backgrounds (**41 Asia, 41 Africa, 27 Europe**), using a validated variant of the Nutrition Norfolk Food Frequency Questionnaire.

BMI was appropriately measured.

OUTCOMES

- The dietary intake of Fe was significantly higher in male participants (17.700 vs. 13.634 mg/day; p-value=0.0023)**, which could be attributed to the significantly higher intake of foods rich in bioavailable iron, specifically meat (271.553 vs. 193.063 g/day; p-value=0.016) in males.
- Moreover, the **dietary intakes of Fe did not show statistical differences according to BMI** [underweight (11.684) < obese (12.953) < overweight (15.276) < normal weight (15.405), p-value=0.546] **or ethnic background** [African (13.888) < European (14.724) Asian (15.837), p-value=0.249; all in mg/day], which might be attributed to the low/different number of responses.
- However, the results would be logical as they reflect higher dietary intakes of this essential mineral in those groups with healthy food intake and would be related to the increased consumption of high-energy foods with low-micronutrient content.

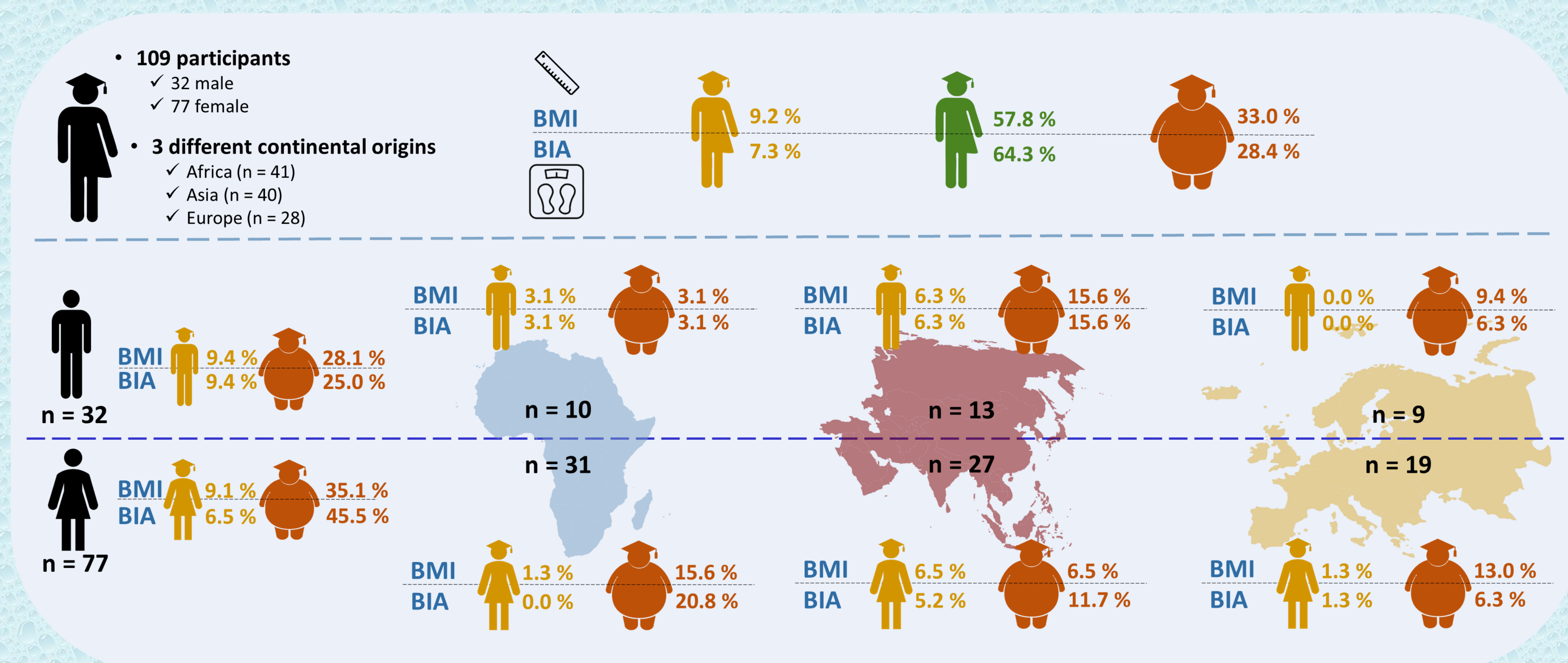


Figure 1. Underweight and overweight individuals in a sample of **young adults (18 to 22 years-old)** studying at De Montfort University (UK) based on their BMI and body fat percentage (BIA), depending on their ethnic background (continental origin)

CONCLUSIONS

The dietary intakes of Fe recorded were higher than the reference nutrient intake (RNI) established for male (8.7, range=6.257-43.809) and female (14.7, range=4.748-40.693; all in mg/day) population in the UK for most of the participants. Our results are in agreement with a similar study carried out in young university students from Liverpool (England), which observed a deficit of 6.18 mg compared with RNI in female counterparts (Farhat et al., 2019).