

PRODUCT AVAILABILITY IN AUTOMATIC VENDING MACHINES

MACHINES IS IT ADJUSTED TO GOVERNMENT RECOMMENDATIONS AND STUDENTS' NEEDS?

Raquel Gouveia¹; Inês Melo¹; Cátia Mateus¹; Cláudia Viegas²; Patrícia Carvalho¹; Vânia Costa²; Rute Borrego²

¹ Nutrition Department – Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Portugal
² H&TRC—Health & Technology Research Center, ESTeSL — Escola Superior de Tecnologia da Saúde, Instituto Politécnico de Lisboa, Portugal
 rute.borrego@estesl.ipl.pt



INTRODUCTION

Nutritional behaviour in college students can be determined by **environmental conditions**, such as food/beverage availability in schools' facilities and their cost (1).



Adjusting food availability
 Healthier eating habits among school communities *can promote*

AIM

- i To audit product availability and cost in vending machines of the Polytechnical Institute of Lisbon
- ii To compare the adequacy of vending machines' products with government legislation.

A CHECKLIST DEVELOPED BY THE UNIVERSITY OF SÃO PAULO (2) WAS USED TO ASSESS AND CHARACTERIZE THE PRODUCTS, WHICH WERE THEN SEPARATED IN TWO CATEGORIES:

HEALTHY (H) AND UNHEALTHY (U)

to access the price, according to an adaptation of despacho n.o 7516-A/2016, in which healthy = allowed and unhealthy = forbidden. Not listed products were divided into H or U, according to their nutritional quality.

FORBIDDEN, ALLOWED AND NOT LISTED

according to despacho n.o 7516-A/2016.

23

Vending machines were accessed

RESULTS

- Food:** Healthy items are 0,18€ more expensive
- Drinks:** Healthy items are 0,16€ cheaper
- General:** Healthy items are 0,06€ more expensive

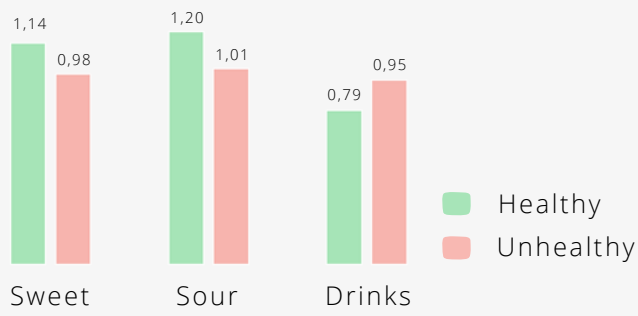


Figure 1 - Healthy and unhealthy products' price

559 products were considered. None of the 23 vending machines were according to the legislation.

- 19/23 Water bottles (mandatory)
- 0/23 Raw fruit, milk or fruit juice (allowed)

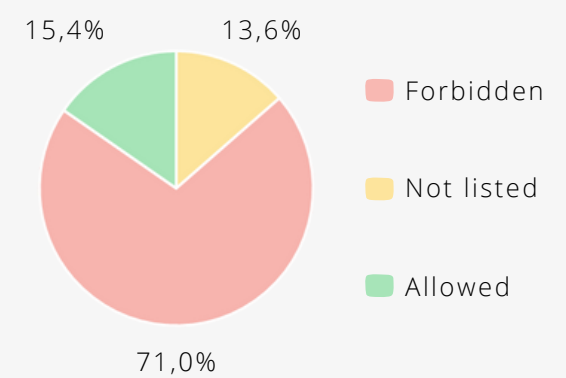


Figure 2 - Product availability according to legislation

DISCUSSION AND CONCLUSION

A study performed in University of Porto (3) with a similar methodology showed identical results regarding the governmental legislation. Other international studies concluded that the products found in universitys' vending machines were:

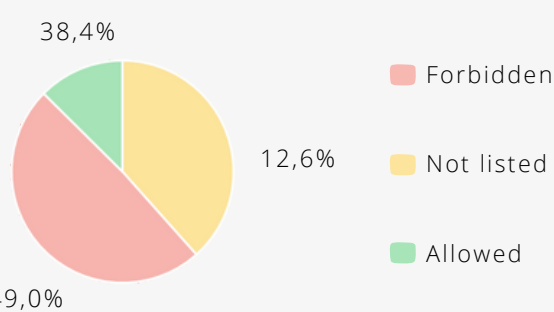


Figure 3 - Product availability according to legislation in University of Porto

- **Highly energetic**
- **Rich in sugars, sodium and saturated fat**
- **Poor in protein, fiber and other nutrients (3,4)**

This is similar to the findings in this study, once all forbidden products can be characterized by a poor nutritional composition.

Creating and implementing strategies to improve vending machine's products' availability and cost is necessary to improve food choices and habits among the students and overall community.

1. Grech A, Allman-Farinelli M. A systematic literature review of nutrition interventions in vending machines that encourage consumers to make healthier choices. 2015;16(12):1030-41;
 2. Franco J, et al. Manual De Aplicação Do Instrumento Para Auditoria De Vending. São Paulo: Universidade de São Paulo; 2019;
 3. Park H, Papadaki A. Nutritional value of foods sold in vending machines in a UK University: Formative, cross-sectional research to inform an environmental intervention. 2016 Jan;96:517-25;
 4. Faris M, et al. Assessment of nutritional quality of snacks and beverages sold in university vending machines: a qualitative assessment. 2021;123(7):2449-60.