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## **Perceived barriers for healthy eating by university employees at the workplace**

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### **Introduction**

The relationship between obesity, poor eating habits and low level of physical activity is largely recognized for a long time<sup>(1, 2)</sup>.

Because of drastic changes in the population's lifestyle in recent decades, it is remarkable the significant increase in the frequency of meals taken away from home. This tendency has been associated with an increase of high energy density meals and a greater prevalence of overweight and obesity and for this reason an increased risk of developing chronic diseases<sup>(3-6)</sup>.

Several studies concluded that individuals who identified a higher number of barriers for healthier eating habits correspond to those that have worse habits<sup>(1, 2)</sup>. The main factors identified as barriers for healthy eating by consumers were lack of time, lack of cooking skills, food price or lack of healthy choices at food services units<sup>(1, 2, 7, 8)</sup>. Meals eaten at the workplace represent a large contribution for daily energy intake and food pattern at the workplace influences the balance of the diet. The analysis of perceived barriers for

healthier eating habits by workers is critical for the implementation and assessment of possible interventions in these scenarios. The purpose of this study was to identify the perceived barriers for healthy eating at the workplace by workers of the largest university of north region of Portugal.

## **Methods**

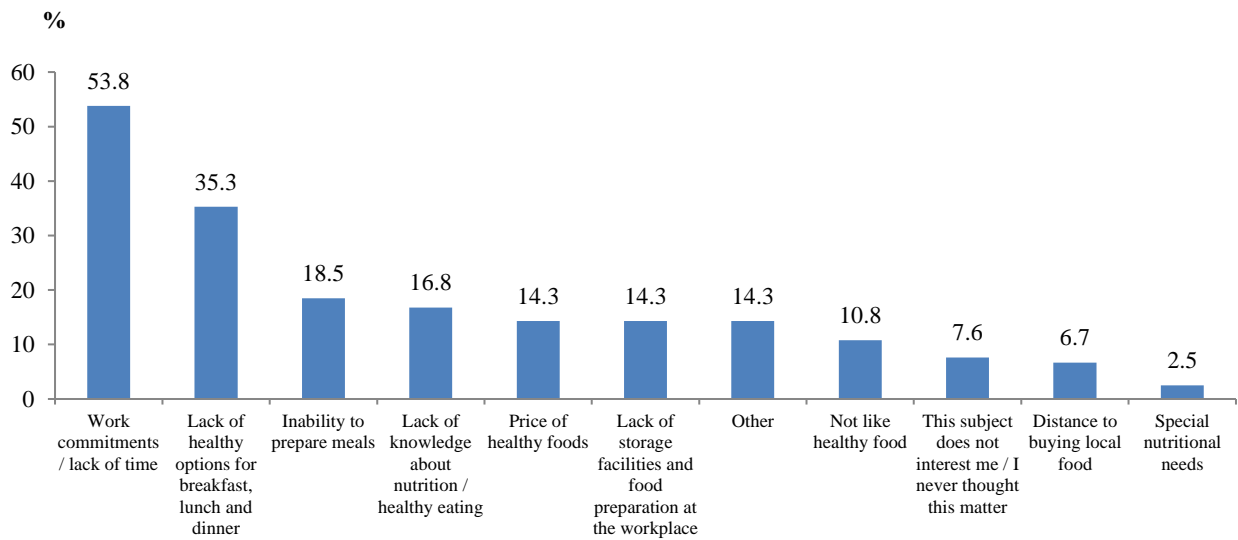
A cross sectional observational study was conducted at the University of Porto. Data collection was performed during labor hours. Participants were randomly selected. Informed consent was obtained and the purpose of the study was individually explained. Data was obtained through the application of a self-administrated questionnaire. The questionnaire included socio-demographic questions and a list of barriers for healthy eating at the workplace. The barriers included in the questionnaire were identified on literature and others were added considering the perception of researchers. Respondents could selected as much options as they wish.

Data analysis was performed using the Statistical Package for Social Sciences<sup>®</sup> version 21.0 for Windows. Cut-off of 0.05 was used as the level of statistical significance.

## **Results**

There were assessed 533 individuals, and 510 valid answers were obtained. The majority of respondents were women (65.5%).

Only 23.1% of respondents reported to follow an unhealthy diet at the workplace. When asked to point out the barriers for having a healthier diet, they referred mostly work commitments and lack of time (Figure 1).



**Figure 1: Perceived barriers for healthy eating at the workplace**

Males respondents identified the barrier for healthy eating "Lack of knowledge about nutrition / healthy eating" more frequently than women ( $p = 0.028$ ) (table 1).

**Table 1: Perceived barriers for healthy eating at the workplace by gender**

	Female (%)	Male (%)	<i>p</i>
<b>Dislike healthy food</b>	7,3	3,7	0,365
<b>Price of healthy foods</b>	6,5	8,3	0,364
<b>Lack of hability for preparing meals</b>	8,9	10,2	0,453
<b>Lack of knowledge about nutrition/ healthy eating</b>	5,6	12,0	0,028
<b>Distance for buying local food</b>	1,6	5,6	0,057
<b>Work commitments/ lack of time</b>	32,3	22,2	0,203
<b>Lack of storage facilities and food preparation at the workplace</b>	8,9	5,6	0,496
<b>Lack of healthy options for breakfast, lunch and dinner</b>	16,9	19,4	0,245
<b>Special nutritional needs</b>	1,6	0,9	0,736
<b>Lack of interest about this matter or subjet</b>	3,2	4,6	0,423
<b>Others</b>	7,3	7,4	0,705

The educational level of respondents influenced their identification of the price as a determinant for having a healthier diet ( $p = 0.001$ ), indicating that this is the most important factor for the less educated respondents.

Comparing, academic either non-academic there were found significant differences for three distinct barriers. It seems that food price is a prohibitive factor for having a healthy diet, essentially for academic staff in relation to others individuals ( $p = 0.019$ ). Also, the lack of areas to prepare and store food at the workplace was referred differently by non-academic staff ( $p = 0.002$ ).

The lack of healthy options for breakfast, lunch and dinner was the last barrier identified as inhibitory factor, to practice a healthy eating at the workplace perceived significantly different by teachers ( $p = 0.013$ ). (Table 3).

**Table 3: Perceived barriers for healthy eating at the workplace by professional occupation**

	Academic (%)	Non-academic (%)	Academic and Non-Academic (%)	<i>p</i>
<b>Dislike healthy food</b>	3,5	6,6	10,0	0,412
<b>Price of healthy foods</b>	1,2	10,9	10,0	0,019
<b>Lack of hability for preparing meals</b>	7,1	10,9	10,0	0,618
<b>Lack of knowledge about nutrition/ healthy eating</b>	5,9	10,2	10,0	0,503
<b>Distance for buying local food</b>	5,9	2,2	0,0	0,261
<b>Work commitments/ lack of time</b>	32,9	24,8	20,0	0,174
<b>Lack of storage facilities and food preparation at the workplace</b>	5,9	6,6	30,0	0,002
<b>Lack of healthy options for breakfast, lunch and dinner</b>	25,9	14,6	0,0	0,013
<b>Special nutritional needs</b>	1,2	1,5	0,0	0,937
<b>Lack of interest about this matter or sujet</b>	5,9	2,9	0,0	0,415
<b>Others</b>	4,7	8,8	10,0	0,454

Concerning others parameters assessed, ranges of age, marital status and place of work did not seem to affect the barriers for adopting healthy eating at the workplace.

## **Discussion**

University workers, namely teachers, have a high level of work and responsibilities, most of them extra classes, which contributes to work commitments and lack of time to stop, prepare and have healthy meals.

Attending to this concern, the availability of healthy options at the workplace, namely in cafeterias, is very important. Food availability at the workplace was not identified by workers as a barrier for healthy eating. This barrier was significantly more identified by academic staff than other respondents.

On the other hand, non-academics reported a higher concern, and identified it as a barrier, the lack of storage facilities and food preparation areas at the workplace. This parallelism on identified barriers could indicate that academics use more frequently university cafeterias and non-academics brought foods from home and use storage and preparation facilities when available at the workplace more frequently. These results are in line with the identification of a third barrier, significantly different between professional occupation. Effectively, non-academics identified more frequently the price of healthy food options as a barrier for healthy eating, contrary to academics. Differences on salary between them, could explain this result. The perception of these factors could influence the choice of place for having meals – cafeterias or storage and preparation facilities.

Attending to the higher availability of information about healthy eating, it's worrisome the number of respondents that identify as a barrier the lack of knowledge about nutrition or healthy eating. Men identified this barrier more frequently than women, which are in accordance with the results found by Yahia in university students<sup>(9)</sup>.

The inability to prepare meals was also identified as a barrier for healthy eating, reason for what cooking skills should be developed, namely included in school curriculum, once at the workplace, due to work commitments and lack of time, hardly it is possible improve them, contributing to adequacy of healthy eating.

In accordance with other studies, only a proportion of respondents perceived barriers for adoption of a healthier lifestyle<sup>(7, 8)</sup>, favoring the creation of an environment more propitious to the emergence of chronic diseases such as obesity<sup>(1)</sup>. However, of all variables tested only the price factors and lack of knowledge about nutrition / healthy eating showed significant differences between respondents. Some studies have shown that people that identify a higher number of barriers are those that follow unhealthy eating

habits<sup>(1, 2)</sup>. This fact is reflected in low intake of fruit and vegetables and high consumption of sugary and high fat products<sup>(1, 2)</sup>.

More studies are necessary in order to realize in what extent these barriers affect the choice consumer's, contributing to the development of new intervention strategies to the promotion of healthy habits.

### **Conclusion**

This work allowed to identify lack of time/work commitments and lack of healthy options for having meals at the workplace as main barriers for healthy eating, in general.

The educational level, professional occupation and gender were the socio-economic characteristics evaluated that influenced the perception of barriers for healthy eating.

Different strategies are needed for different target groups to reduce barriers once they are perceived differently for them.

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