THE EPIDEMIC OF THE TWENTY-FIRST CENTURY: OBESITY. KEYS TO FACE IT

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Abstract

One of the biggest problems of the society in which we live is obesity. In fact, it is the most prevalent cardiometabolic disease in the world [1].

It is estimated that by the year 2025, one-fifth of the world's population will be obese.

In the last 15 years, the rate of obesity in Spain has increased by 9% in children and young people reaching a historical percentage of 22.8%. In addition, 4.7% of the population is morbidly obese.

It is important to highlight the link between of various diseases with obesity and overweight, such as diabetes, hypercholesterolemia, hypertension and various coronary diseases that are closely related.

It is worth noting the worsening of the quality of life, even creating limitations and provoking an increase in the care burden.

Due to this incidence, the authors have carried out a deep study of the curricula of different health-science degrees [2] and Masters in Andalusia looking for those subjects related to health and nutrition habits, in order to determine if health professionals finish their studies with a suitable profile to combat those epidemic maladies.

It seems that graduates from health sciences do not have the skills to face these food-related diseases. Consequently, in this study we propose some interventions to minimize their impact in society such as the launch of some specific training courses about nutrition, sports and health. Similarly, we also propose the development of dissemination sessions about these topics to ensure the right formation of this kind of students [3, 4].

Keywords: Obesity, Cooperative Group Work, Health Sciences, Teaching Innovation.

1 INTRODUCTION

Obesity is the most important health problem of the 21st century. It is a disorder that begins in childhood and involves genetic and molecular factors, along with a number of circumstances that clearly affect this pathology (sedentary lifestyle, smoking, pre-cooked meals), and gives rise to multiple health problems.

Overweight and obesity are defined as an excessive accumulation of fat that can be harmful to health.

Body mass index (BMI) is a simple indicator of the relationship between weight and height that is frequently used to identify overweight and obesity in adults.

In the case of adults, a BMI equal to or greater than 25 is overweight, whereas a BMI equal to or greater than 30 means obesity.

In Spain, 40% of the population is overweight and 21.6% is obese, with Andalusia being the third autonomous region in the obesity ranking, behind Asturias and Galicia, according to Nutrition Survey of the Spanish Population data (ENPE) that which exceeds 20,000 overweight children (Table 1).
Table 1. Number of young people (6-14 years old) with overweight or childhood obesity

<table>
<thead>
<tr>
<th>Andalusian provinces</th>
<th>Number of preteens and teens with overweight or childhood obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almería</td>
<td>1,201</td>
</tr>
<tr>
<td>Cádiz</td>
<td>1,158</td>
</tr>
<tr>
<td>Córdoba</td>
<td>2,154</td>
</tr>
<tr>
<td>Granada</td>
<td>1,932</td>
</tr>
<tr>
<td>Huelva</td>
<td>340</td>
</tr>
<tr>
<td>Jaén</td>
<td>1,414</td>
</tr>
<tr>
<td>Málaga</td>
<td>2,915</td>
</tr>
<tr>
<td>Sevilla</td>
<td>10,999</td>
</tr>
</tbody>
</table>

As mentioned above, these diseases are related to multiple health problems (Fig. 1). Currently, we have a serious epidemic of chronic non-communicable diseases, mainly cardiovascular diseases, closely related to obesity and overweight. In addition, a high mortality, disability, and deterioration of the quality of life and some cancers have been developed for this reason.

Of all diseases related to obesity and overweight, stand out: hypertension, hypercholesterolemia and diabetes mellitus (Fig. 2).

![Figure 1. Various diseases related to obesity](image)

![Figure 2. Graph of the increase of hypertension, hypercholesterolemia and diabetes in the last few years](image)
With regard to health expenditure, in Spain, 7% of the annual health expenditure went to the treatment of obesity and overweight, approximately 5,000 million euros per year, which would have to be added to the expenditure for other diseases related to them.

In the present work, different Degrees and Masters run in Andalusia are studied to know if health professionals are really prepared to fight this epidemic, and if not, to propose solutions.

2 METHODOLOGY

Due to the increase of these pathologies, a study of the Degrees of Medicine, Nursing, Biomedicine and Pharmacy of Andalusia has been carried out, which concludes that health professionals are not really prepared to combat obesity and overweight and that the launch of dissemination sessions and training courses would improve this problem by a simple method for the students and teachers.

2.1 Degrees of Health Sciences in Andalusia

2.1.1 University of Cádiz (UCA):
UCA teaches the Degrees of health science: Medicine and Nursing. Only in the Degree of Nursing is given one subject called “Food, Nutrition and Dietetics”.

2.1.2 University of Huelva (UHU):
UHU teaches the Degree of Nursing and in this Degree is given one subject called “Food, Nutrition and Dietetics”.

2.1.3 University of Málaga (UMA):
UMA teaches the Degrees: Medicine and Nursing. In the Degree of Nursing only one subject is given called “Dietetics and Nutrition” and in the Degree of Medicine “Obesity: How to fight the epidemic” like a departmental elective course.

2.1.4 University of Seville (US):
US teaches the Degrees: Medicine, Biomedicine, Nursing and Pharmacy. In Medicine only two departmental elective courses “Health promotion” and “Morbid obesity” are given. In Biomedicine only one subject called “Nutrition” and in Pharmacy two subjects, “Nutrition, Dietetics and Diet Therapy” and “Nutrition and Bromatology” one of them like departmental elective courses.

The rest of Andalusian universities do not have any subject related to nutrition or sports in any of their degrees in health sciences.

2.2 The students

This experience has been led to undergraduates from the Universities of Seville, students from the Degree in Biomedicine and Pharmacy, but it may also be of great interest to students from other Degrees in Health Sciences like Nursing or Medicine.

2.3 The program

The main method used in the project was based on search criteria. Participants had to participate in dissemination sessions and training courses about nutrition, sport and health. All the opinions and ideas were exposed and a debate opened. Finally, a survey was conducted to see how satisfied the students are.

3 RESULTS

From this course, the participation has been close to 62% in the degree in Pharmacy and 64% in the Degree in Biomedicine. This is a very high percentage, taking into account that it was a voluntary activity although participation was linked to an increase in the final mark on the subject. 12 groups were constituted.

The students had two weeks for the selection of the topics. Some topics were: nutrition in a classroom, sport and health, or sporting nutrition. After the selection of the topics, a summary was made with a
constructive technical critique, without entering into personal opinions and presented then in an attractive way (poster format). These posters were exhibited in class and a debate was open.

After the topic being exposed and debated, teachers gave them a survey that showed the interest and enthusiasm that this project had caused in students.

Students realized the importance of getting well prepared on these vital issues, so that they would be able to advise society and stop this epidemic.

4 CONCLUSIONS

In conclusion, the evaluation has been positive. The students were very enthusiastic about being able to participate in the project and have shown interest in this topic so closely related to their Degrees in Health Sciences. In addition, they have also improved their ability to defend a topic in public. Therefore, this work should be expanded to other degrees or universities.

ACKNOWLEDGEMENTS

The authors would like to thank the University of Seville (II Plan Propio de Docencia) for financial support.

REFERENCES


