



Original article

Sociodemographic characteristics as risk factors for obesity and overweight in Spanish adult population[☆]



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ABSTRACT

Objective: To analyze the adult Spanish sociodemographic characteristics associated with a higher risk of excess weight and obesity. As a second aim, we analyze if there are gender differences regarding the development of overweight and obesity in different age groups.

Material and methods: Transversal study of the National Health Survey of 2012. Body mass index was calculated and a number of sociodemographic variables were analyzed. An analysis of multinomial logistic regression was conducted.

Results: In 2012 the prevalence of obesity in Spain was 18.5% for obesity and 39.0% for being overweight. The greatest risk of being overweight or obese versus being of normal weight corresponded to men, married, between 65 and 74 years old, in social classes where unskilled work is performed, in the autonomous city of Ceuta, and the autonomous communities of Extremadura and Andalucía, and in municipalities with fewer than 10,000 inhabitants. On the other hand, obesity risk is 2 times higher in men versus women between 25 and 64 years while overweight risk is higher in all age groups.

Conclusions: The sociodemographic characteristics associated with a higher risk of being overweight or obese in Spain have changed compared to those published previously. In the year 2012, obesity was more common in males, the maximum peak was between 65 and 74 years and the area with the highest prevalence of obesity was the autonomous city of Ceuta.

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Características sociodemográficas como factores de riesgo para la obesidad y el sobrepeso en la población adulta española

RESUMEN

Objetivo: Analizar las características sociodemográficas de la población adulta española que suponen un mayor riesgo de sobrepeso y obesidad. Por otro lado, analizar las diferencias por sexo en cuanto a la presencia de sobrepeso y obesidad en las diferentes franjas de edad.

Material y métodos: Estudio transversal de la Encuesta Nacional de Salud del año 2012. Se calculó el índice de masa corporal y se analizaron una serie de variables sociodemográficas. Se llevó a cabo un análisis de regresión logística multinomial.

Resultados: En el año 2012 la prevalencia de obesidad en España fue del 18,5% y la de sobrepeso fue del 39,0%. El mayor riesgo de sobrepeso y obesidad frente al peso normal correspondió a varones, casados, entre los 65 y los 74 años, en las clases sociales en que se realizan trabajos no cualificados, en la ciudad autónoma de Ceuta y las comunidades autónomas de Extremadura y Andalucía, y en los municipios de menos de 10.000 habitantes. Por otro lado, el riesgo de obesidad frente a normopeso fue de más del doble en varones respecto a mujeres entre los 25 y los 64 años y el riesgo de sobrepeso fue muy superior en todos los grupos de edad.

Palabras clave:

Obesidad

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Conclusiones: Las características sociodemográficas asociadas a un mayor riesgo de sobrepeso y obesidad en España han cambiado con respecto a lo publicado anteriormente. En el año 2012, la obesidad es más frecuente en varones, el pico máximo se encuentra entre los 65 y los 74 años para luego estabilizarse, y la zona con mayor prevalencia de obesidad es la ciudad autónoma de Ceuta.

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Introduction

The relationship between obesity and the development of certain chronic diseases such as ischemic heart disease, hypertension, diabetes, dyslipidaemia and certain types of cancer and its impact on premature mortality, decreased quality of life and increased health spending makes obesity a major public health problem, aggravated by the fact that its increasing prevalence has reached epidemic numbers. A report published by the Organisation for Economic Co-operation and Development in 2010 examined the characteristics of the current obesity epidemic and its main consequences, noting that obese people die 8–10 years earlier than those with normal weight, and that spending on healthcare for people with obesity is 25% higher than that of normal-weight people.¹

According to a report by the World Health Organization (WHO), in 2008 the world had 310 million obese and 1700 million overweight people.² In 2014 these figures increased, reaching 600 million people in the case of obesity and 1900 million for overweight.³ In Europe, the trend is similar, noting increasing levels in the prevalence of obesity in different countries in the period between 1975 and 2005.⁴ In Spain, in 1987, the prevalence of obesity in adults over the age of 20 was 7.7% according to data from the National Health Survey (NHS), a figure that doubled in 2001, reaching 13.6%.⁵ In 2006, the prevalence of obesity was 15.6% according to data from the National Statistics Institute based on that year's National Health Survey.

Between 2000 and 2006, an ecological study of 105 countries was conducted by analysing the prevalence of overweight and its relationship to the human development index, a tool developed by the United Nations in 1999, finding that a higher GDP, a politically stable situation, a higher educational level and ease of access to food is directly associated with a higher prevalence of overweight.⁶

In Spain, the ERICE⁷ study found in 2008 a higher prevalence of obesity in the southeast of the country and in women and this increased with age up to 65 years, where it was stabilized. The DARIOS⁸ study in 2011 established differences in the prevalence of obesity among the different autonomous communities (ACs), placing Canary Islands, Extremadura and Andalusia as areas of higher prevalence.

The main objective of this paper is to analyze a number of socio-demographic characteristics (sex, age, marital status, occupational social class, autonomous community and size of the municipality) and determine which of them behave as a risk factor for the development of overweight and obesity in the Spanish adult population through data obtained from the last National Health Survey published. A secondary objective is to check whether the presence of overweight and obesity in different ages follows the same profile in men and women.

Materials and methods

It is a cross-sectional study based on the National Health Survey in 2012,^{9,10} which was conducted on a sample of 21,007 adults aged 15 or above. It was a stratified multistage sampling, distributed evenly and proportionally between autonomous communities, according to their size. The selection within each stratum was carried out with probability proportional to size and with equal probability by systematic sampling with random start. This

method leads to self-weighting samples. Until 2001 the selection of people to interview was conducted by non-probability sampling techniques (by age and sex quotas); however, since 2003, the selection is made randomly from the population frame that defines the Population Census.

The body mass index (BMI) was calculated and related to 6 independent sociodemographic variables: gender, age, marital status, occupational social class, autonomous community and size of the municipality.

People selected for this study were grouped into 3 categories considering their BMIs, which is the method recommended by WHO since 1998¹¹ to identify overweight and obesity. The following formula was applied for its calculation:

$$IMC = \text{peso (kg)} / \text{talla (m}^2\text{)}$$

The data obtained were grouped as follows: low weight (BMI < 18.5), normal weight (BMI = 18.5–24.9), overweight (BMI = 25–29.9), type I obesity (BMI = 30–34.9), type II obesity (BMI = 35–39.9), type III obesity (BMI ≥ 40).

The social class variable is obtained from the classification proposed in 2012 by the Determinants Working Group of the Spanish Society of Epidemiology, adapted for the National Health Survey 2012. It is a grouping of occupations, current or former, coded according to the National Classification of Occupations which entered into force in 2011.¹² The 6 social classes used in the National Health Survey 2012 are: social class I (directors and managers of companies with 10 or more employees and professionals traditionally associated to university degrees); social class II (directors and managers of companies with fewer than 10 employees traditionally associated to university diplomas and other technical support professionals. Athletes and artists); social class III (intermediate occupations and self-employed); social class IV (supervisors and workers in skilled technical occupations); social class V (primary sector workers and other semi-skilled workers); social class VI (unskilled workers).

The size of the municipality was divided into: more than 500,000 inhabitants, capital of the province/county (except the above), more than 100,000 inhabitants, 50,000–100,000 inhabitants, 20,000–50,000 inhabitants, 10,000–20,000 inhabitants, less than 10,000.

A multinomial logistic regression analysis was performed¹³ using SPSS[®] 23.0 in order to study the possibility of risk rates (*odds ratio*) of obesity and overweight versus normal weight (reference category) according to 6 independent sociodemographic variables: sex, age, marital status, occupational social class, autonomous community and size of the municipality. All variables were categorical with the exception of age; however, it was decided to divide the age in 7 intervals just in case the risk of overweight and obesity was not linear over the years. Age ranges were: 18–24, 25–34, 35–44, 45–54, 55–64, 65–74 and over 74 years.

Results

17,861 subjects were selected for this study between 18 and 90 years of age ($M=52$, $SD=18.23$) and were divided into 3 categories considering their BMI values following the WHO criteria. 42.5% (95% CI 41.8–43.3) had normal weight, 39.0% (95% CI 38.2–39.7) overweight and 18.5% (95% CI 17, 9–19.1) obesity

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