Applied nutritional investigation

Body mass index through self-reported data and body image perception in Spanish adults attending dietary consultation

Paula Acevedo Ph.D. [a], Noemí López-Ejeda M.S. [b,c], Irene Alférez-García M.S. [d],
Jesús R. Martínez-Álvarez Ph.D. [b,c], Antonio Villarino Ph.D. [b,c],
M. Dolores Cabañas M.D. [b], M. Dolores Marrodán Ph.D. [b,c,*]

[a] Faculty of Science, Department of Biology, Autonomous University of Madrid, Madrid, Spain
[b] Research Group EPINUT, Faculty of Medicine, Complutense University of Madrid, Madrid, Spain
[c] Spanish Society of Dietetics and Food Sciences (SEDCA), Madrid, Spain
[d] Arkopharma Pharmaceutical Laboratories, Madrid, Spain

A R T I C L E   I N F O

A B S T R A C T

Objectives: The aim of this study was to explore, based on sex and age, knowledge regarding weight, height, and the perception of body shape in Spanish adults who attend dietary consultation. We also wanted to determine the participants' desired body shapes and what they considered their best health status.
Methods: The sample consisted of 8100 women and 1220 men from Spain. They were between the ages of 18 and 75 y. Weight (kg) and height (cm) were measured and body mass index (BMI) was calculated. Participants were nutritionally classified following the cutoffs proposed by the World Health Organization. Each individual was asked about his or her weight and height and self-reported BMI was calculated. They also answered a test of body image perception through drawings of human silhouettes that corresponded to an exact BMI. With this, perceived BMI, desired BMI, and BMI considered healthy were estimated. Parametric statistic tests for contrast of mean and percentages were applied.
Results: Self-reported and perceived BMI underestimate the BMI obtained through anthropometry. Differences between measured and self-reported BMI are lower in women and increase with age in both sexes. The same result was obtained when comparing measured BMI with perceived BMI through silhouette test. On average, desired BMI and healthy BMI were in the limits of normal weight for all ages and both sexes. However, the difference between them was also lower in women.
Conclusion: Age and sex influence the perception of excess weight and body image. This could condition the demand of dietary treatment to improve the nutritional status.

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Introduction

Being overweight has been recognized as a major cause of chronic non-communicable diseases that affect human population. In general, excess weight is related to an increase in mortality from all causes [1] and is well known its role in the development of hypertension, type 2 diabetes, and certain types of cancer is well known [2,3]. Obesity also affects self-esteem and decreases the quality of life of the obese individual [4].

Thus, most public health interventions are focused on the treatment and prevention of obesity at different levels. However, their success largely depends on subjective aspects such as individual perception of health status or the understanding of the pathologic meaning of having excess weight. In order to treat obese patients it is necessary that they take the initiative and start recognizing themselves as obese, and for this, it is imperative that they have an actual and conscious perception of their own body.
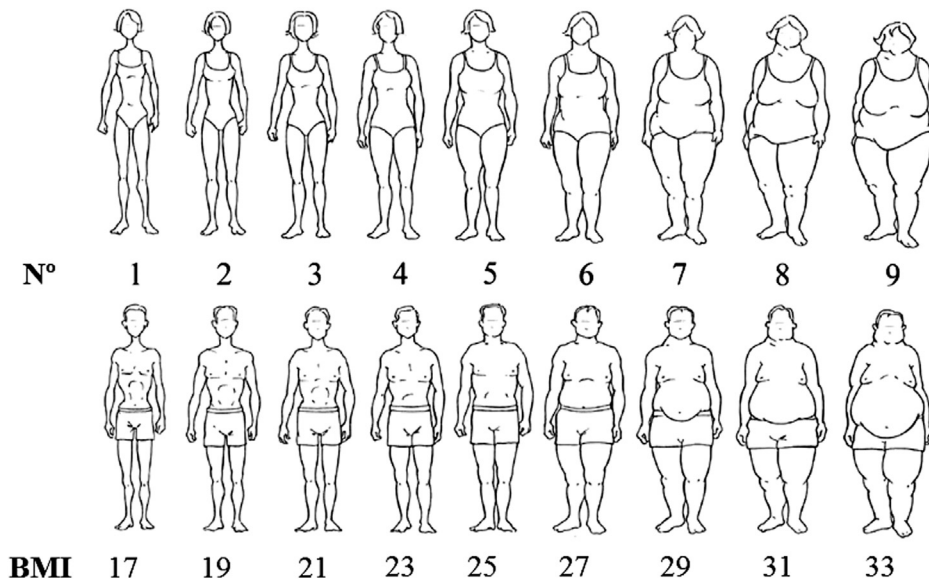
Fig. 1. Epinut Test for the analysis of self-image perception through silhouettes corresponding to different body mass index (BMI; kg/m^2).

Several studies have focused on evaluating the knowledge that individuals have about their actual height and weight [5–7]. Other similar studies have analyzed the perception that people have of their body through self-identification with silhouettes that represent different body mass indexes (BMIs) [8–10]. The results of these studies demonstrated a mismatch between the reality and the perception with a tendency is to underestimate weight and to overestimate height, although young people tended to be more accurate than older individuals and women more than men [11–13].

In this context, the aim of this study was to explore the knowledge of the weight, height, and body image perceptions of Spanish adults who were participating in a dietary consultation program. We also wanted to determine what body silhouette they desired and what they identified as representing the best health status. We assessed differences based on sex and age.

Materials and methods

The study was conducted in the framework of the cooperation between Arkopharma Pharmaceutical laboratories and EPINUT Research Group of the Complutense University of Madrid (reference 920325) and with the collaboration of the Spanish Society of Dietetics and Food Sciences. The data were collected in 46 of the 50 Spanish provinces between February and November 2011 in nutrition consultations located in pharmacies. The sample consisted of 9320 individuals of whom 86.9% were women (n = 8100) and 13.1% were men (n = 1220) between the ages of 18 and 75 y (mean, 45 y; SD 13.5 and mean, 43.5; SD 3.6, respectively). The Declaration of Helsinki [14] and Spanish Law 15/99 of December 13 for Protection of Personal Data were respected and the informed consent of all participants was collected.

All participants were asked about their weight and height and participated in a test of body image perception by silhouettes with a previously developed method [15] based on the Stunkard and Stellar method [16]. This test shows silhouettes ranked from 1 to 9 representing BMI values in the range of 17 to 33 kg/m^2 (Fig. 1). Participants did not know the BMI category corresponding to each figure and only had a drawing as reference. The individuals had to choose the silhouette they considered closest to their own image (perceived BMI), the one that they wanted to have (desired BMI), and the one that they deemed representative of a better health status (healthy BMI). Subsequently, the actual height and weight were taken using a balance and a stadiometer, both approved for this type of study and using the techniques described in the protocol of the International Society for the Advancement of Kineanthropometry [17]. Using these measures, the actual BMI (measured BMI) was calculated.

World Health Organization criteria was used for classification of nutritional status: Underweight is considered BMI < 18.5 kg/m^2; normal weight 18.5 to 24.9
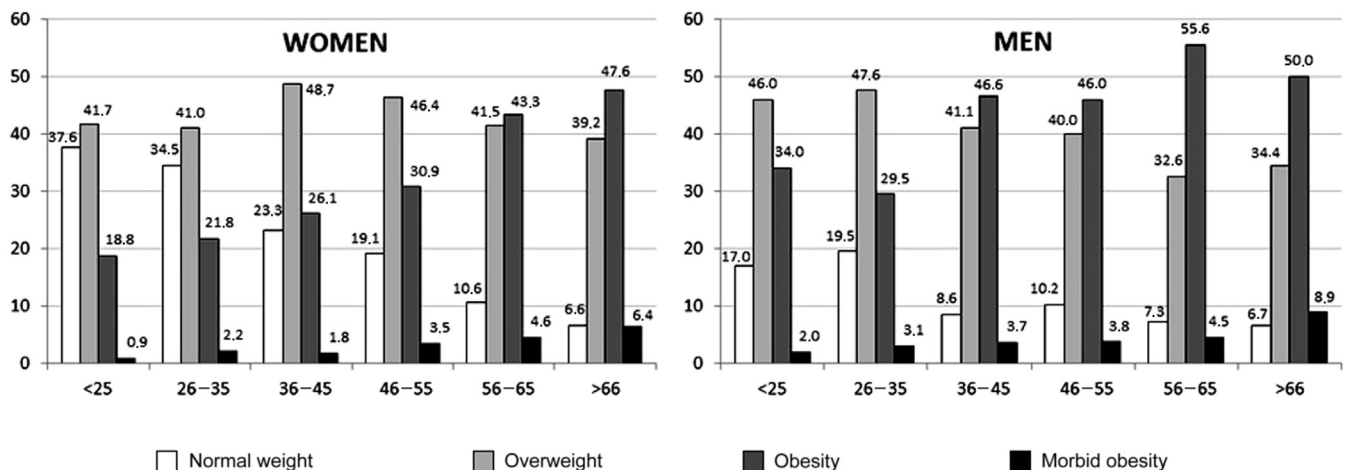

Fig. 2. Nutritional categories distribution (%) derived by the anthropometric body mass index, by age group and sex.