

The Concern of Overweight among the Adult Population in Contemporary Spain: Results from the National Health Surveys

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Extended abstract

Background

Spain is currently (and noticeably) experiencing a common paradox that affects a good part of Western society: the deterioration of certain types of health-related behaviour within an affluent society. These include changing food consumption patterns (e.g. increasing fat intake) and the decline in physical activity that has led to more sedentary lives (World Health Organization, WHO, 2004). As a consequence, overweight and obesity have become a major concern for Spanish health authorities that has led to the Ministry of Health and Consumption to coordinate and implement an action plan (the NAOS strategy) aiming to change and improve nutrition habits and promote physical exercise in the whole population (Ministry of Health and Consumption, MHC, 2005).

Figures are particularly worrying for the young. 13.9% of those aged 2-24 are obese and 26.3% are overweight (MHC, 2005). Comparing with what has been observed in regional Spanish studies for the latter two decades of the 20th century (Moreno et al., 2001) it appears that the increasing prevalence rates of overweight among young people has accelerated during the last years. For these reasons current trends among infants and adolescents have received much of the media attention as well as previous academic studies on overweight. However, the problem is not exclusively confined to young people but almost affects the entire population even including older ages. Only a few studies have dealt with the adult population (Gutiérrez Fisac et al., 2004), which is why we think that they should deserve more attention.

The Spanish case is particularly interesting because the onset and consolidation of being an affluent society took place in a relatively short period of time and affected most of the cohorts that are alive today. The majority of the Spanish population did not attain a proper food intake level until the 1950s (considered to be between 2500-3000 kcal per person per day; FAO, 1965). In 1970 the average intake was estimated at 2734 kcal (29 per cent coming from fats) among the population over 20. In 2001 it had risen to 3422 kcal (40 per cent coming from fats) for the same group (HCM, 2005b). When observing these data it is not surprising that the prevalence of adult obesity (Body Mass Index > 30 kg m²) also increased during the latter part of the 20th century (for instance, according to Martínez et al. 2004 estimated obesity rose from 8% to 13% between 1987 and 2001 and as our paper will show, the situation with regard to overweight is even more concerning).

By applying a type of age-time-cohort approach the objective of this study is to ascertain the extent of overweight among the population and to identify which birth-cohorts and age-groups are particularly affected.

Data and methodology

The NHS is the only representative source for the entire Spanish population over a long period of time. Since 1987 Spain has had a number of these surveys that were aimed at providing information on the health status of a large part of the population that is not registered by the health care system, such data on perceived health and health care use from the personal experiences of those interviewed, as well as life style habits and socioeconomic characteristics that may influence health. Although there is a lack of panel data in Spain, a 20-year time-span since the first edition of the NHS nevertheless provides the possibility to aggregate the different surveys into one database and, consequently, to analyse both changes in health and health-related behaviour over time as well as within and between

birth cohorts. However, prior to this the comparability and continuity of the questions, response categories, coding practises and results between each survey had to be assured.

After aggregating the data files of each survey into one large database we obtained a total sample of 106.217 respondents aged 16 and over. These were subsequently designated to different cohorts in function of when the survey was held and the age of the respondent at the time of the interview. Due to an increasing interest in the elderly population, older ages (65+) were over-represented at the cost of young adults (16-29 years) after the 1997 survey. This bias, together with a territorial one (several Autonomous Regions were clearly overrepresented in one or several of the samples), has been corrected through a standard weighing system based on official data on age, sex and the geographical distribution of the population for the years matching each survey edition. Data were also checked for errors and omissions with respect to the variables age, sex, region of residence, height and weight. Especially the 1987 survey was affected by this, as only two digits were provided for weight. Given that only persons older than 16 years were interviewed, this seemed to be coding errors or errors made by the interviewer. After checking the respondent's weight and reported (i.e. not calculated) body mass index category, one meter was added to the subject's height or the case was deleted. Similar problems were found for weight (that ranged between 2 kilos and 695 kilos). Nonetheless, the aggregated and screened database still contained more than 90.000 cases (see Table 1). It should be acknowledged, however, that the data are single observations only. This is to say that there is no information about the weight history of each individual.

However, height had been previously analysed as a way to assess the reliability and validity of the different Spanish National Health Surveys (Spijker, Pérez and Cámara, 2007). This is because height is a physical attribute that remains about equal after one reaches adulthood. As a consequence, the average height of a birth-cohort should remain approximately the same across different surveys, which it did.

We further increased the reliability of the sample by calculating 10-year birth cohorts and aggregating single ages into 10-year age groups, thereby discarding the age-cohort combinations with few respondents, but maintaining a large sample that allowed for cohort analysis (more than 2000 cases in most age-sex-cohort combinations).

Table 1. Original sample size and distribution by sex and age group (%)

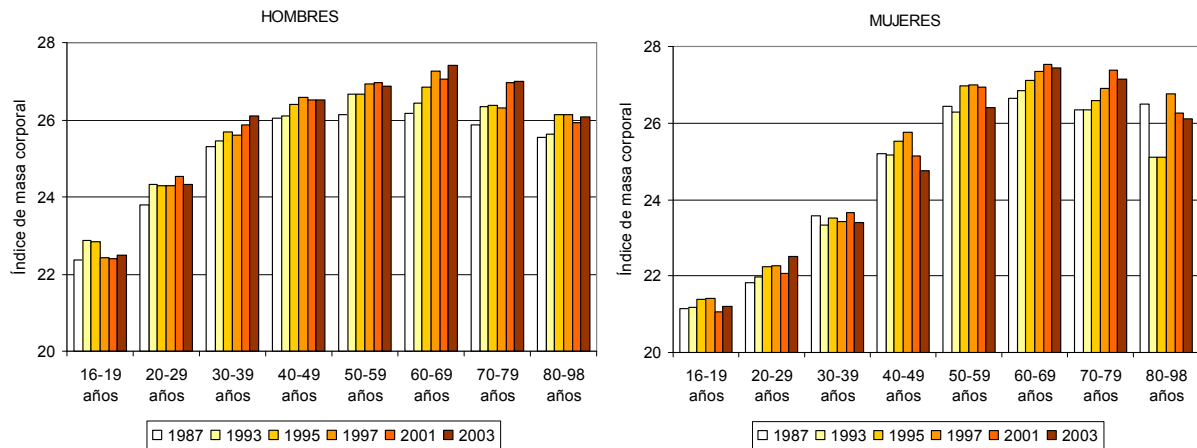
Edition	Sample size	Male	Female	Unk.	Age			
					16-29	30-64	65+	n/c
1987	29647	47.9	52.1	0.0	30.0	53.2	16.6	0.1
1993	21061	48.4	51.4	0.2	28.8	53.3	16.3	1.5
1995	6396	48.3	51.7	0.0	29.3	53.1	17.5	0.1
1997	6396	48.5	51.5	0.0	28.2	54.2	17.4	0.3
2001	21067	48.5	51.5	0.0	25.1	54.3	20.6	0.0
2003	21650	45.6	54.4	0.0	16.4	55.2	28.3	0.0
Total	106217	47.7	52.2	0.0	25.9	53.9	19.8	0.4

Source: ENS microdata (1987-2003)

Results

Results show that the age-trend in average weight is what would be expected from a biological point of view, particularly in the case of males (Figure 1). During a normal male life-cycle, weight increases until the age of 30 after which it starts to decline until age 60. The results that we obtained followed this trend and thus demonstrated the coherence (at least at the aggregated level) of self-reported weight in the ENS.

Figure 1. Body Mass Index by age, sex, and survey year.



Source: ENS microdata (1987-2003)

Results were interesting from both a socio-demographic and historical point of view. For example, due to the improvements in nourishment Spanish males gained in weight partly, but not exclusively due to the gains that were made in height. For example, each successive mature cohort born between 1930 and 1959 whose physical growth had been completed by the time in which the first ENS was held in 1987 got heavier over time and for the same age-groups younger cohorts were heavier than older ones.

After correcting for differences in height, i.e. by calculated the body mass index (BMI), we observed that although the changes and differences attenuated, BMI increases were still observed among men aged 30 to 79 and women between 60 and 79. We subsequently looked at the BMI structure and found that between 1987 and 2003 fewer people had a weight that is considered normal (a BMI of between 18,5 and 24,9). Although also among young adults proportions declined (from 74% to 66% among men and from 77% to 73% among women), the situation among men aged 30-44 remained the worst. In 2003 just 41% of them had a normal weight (48% in 1987), compared to two thirds of women. Although both extremes, being underweight or obese, did not change much over time or explained differences between age groups or between men and women, it seems to be the “move” from being normal to overweight that caused the BMI increases and differences.

As respondents were also asked to provide their opinion on what they considered to be their weight in relation to their height, it was interesting to see that while about the same proportion of men as women gave the classification that corresponded to calculated BMI (although we are aware of the arbitrariness of what is considered to be normal, overweight etc. and that both the respondent’s height and weight was reported by the respondent rather than measured by the interviewer), the perceived weight-height relation of one-third of the men interviewed was lower than their calculated BMI category compared to one out of every 5 women. On the contrary, just 7% of men gave up a higher category than their calculated BMI classification compared to 21% of women (Table 2). It would seem therefore, that men are more optimistic or less preoccupied about their weight than women, which, given the actual observations, should be of major concern to policy makers.

Table 2. The respondent's opinion about his/her weight to height ratio in relation to their calculated Body Mass Index. Aggregated results (absolute numbers and percentages) of the Spanish National Health Surveys held between 1987 and 2003, men and women aged 16+.

Respondent's BMI	Respondent's opinion about their weight in relation to their height			
	Much higher than considered 'normal'	Somewhat higher than considered 'normal'	Normal	Less than considered 'normal'
	Men			
Insufficient weight	4	16	152	323
Normal weight	63	2080	15672	3129
Overweight	1024	9326	8663	193
Obese	1526	2518	761	30
Insufficient weight	0,0%	0,0%	0,3%	0,7%
Normal weight	0,1%	4,6%	34,5%	6,9%
Overweight	2,3%	20,5%	19,0%	0,4%
Obese	3,4%	5,5%	1,7%	0,1%
	Women			
Insufficient weight	7	45	948	851
Normal weight	319	6382	16724	1700
Overweight	1573	7468	3408	77
Obese	2265	2534	502	52
Insufficient weight	0,0%	0,1%	2,1%	1,9%
Normal weight	0,7%	14,2%	37,3%	3,8%
Overweight	3,5%	16,6%	7,6%	0,2%
Obese	5,0%	5,6%	1,1%	0,1%

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