TITULO

Abstract

The health authorities implicit assumption on people desires to be within the healthy BMI parameters defined by WHO is analyzed. A sample of 512 college students was collected from January to May 2016 (230 female). The survey consisted in interviews conducted at Universidad Autónoma Metropolitana (UAM) in Cuajimalpa, Mexico City, habits on food intake, opinions on self image and health, concern on body weight and family background on obesity were assessed. Body weight, muscle, body fat and visceral fat percentages were measured using a Tanita BC 533 Body Composition Monitor. Participants high were also recorded. Self concern on body weight and overweight and obesity prevalence are reported. Overweight prevalence was 29.13% in women and 30.14% in men. Obesity prevalence was 6.08% in women and 9.93% in men. 55.26% of women expressed concern on their body weight as 61.92% of men did. Although a 40.09% of participants were not interested in their body weight, concern on body weight was associated with overweight and obesity.

**Keywords:** body weight concern, behavior, overweight, obesity, students.

-Overweight and obesity are the cause of diabetes, high blood pressure and more

-Overweight and obesity depends on several factors

The energy imbalance between calories consumed and expended proposed by the World Health Organization (WHO) as the fundamental cause of overweight and obesity has several biological explanations. Zhang et al. (2008), suggests that the gut microbiota affects nutrient acquisition and energy regulation, Dimeglio and Mattes (2000), proposes that liquid carbohydrate promotes positive energy balance, for Raben et al. (2002), sucrose consumption increases body weight, Avena et al. (2008) document that rats can become sugar dependent, Cassin and von Ranson (2007) suggest that to a some degree binge eating is experienced as an addiction. And many others. The preferences on body weight are not discussed in this literature.

Social analysis also provides several explanations to the energy imbalance The body weight of each individual is determined by lifestyles and cultural determinants that have a significant impact on the prevalence of obesity and overweight worldwide (Dehgan, et al. 2005). Personal preferences on body weight are frequently included. Philipson and Posner (2003) argue that the effect of income on obesity changes from positive to negative with economic development, and that it implies that technological change may not continue to raise weight. Komlos, et al (2004) proposes for developed countries that an increase in individual impatience causes people to prefer more current satisfaction from eating, instead of future wellbeing from better health.

Aesthetic preferences and other believes on physical appearance have effects on body weight.

Hoyos and Clarke (1987) found that 18.7% of participants in a survey in Barbados associated obesity with good health, 29.9% with wealth and 36.6% with happiness.

Goodman et al. (2000) report a significant association between high social status and consumption of soft drinks such as Coca Cola in developing countries. Renzaho (2004) presents a summary of the literature showing various ethnic groups in the United States that have preference for larger bodies.

People desire to be within the healthy weight BMI parameters defined by WHO depend first, on the reference group socioeconomic and cultural characteristics and second, on the individuals knowledge of her own body weight.

This is important because to be effective, public policies established to counter the condition of overweight and obesity need the explicit peoples concern on their body weight.

(Rubén, hay una abundante literature que habla de overweight misperceptions que habría que mencionar aquí on en otra parte, por ejemplo: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3804101/ )

Materials and methods

Survey

The database used in this work is part of a larger study that will conclude in 2017. It consisted in an interview to 512 students from the UAM Cuajimalpa from January to may 2016 where consumption of different foods were collected, the weight, and height, were recorded to determine BMI, and other practices as exercise and consumption of sugar and salt. Perceptions of health (are you a healthy person?) and body structure (are you satisfied with your body structure?) of participants and other measurements, such as percentages of muscle and fat, were also recorded. To asses the participants concern on their own body weight they were asked if they knew their body weight, if the answer was “no”, no concern was recorded, if the answer was “yes”, the declared weight was recorded and later compared to actual weight measured. If the difference was larger than one standard deviation (4.15 kg) no concern was recorded.

Students were randomly asked to participate but professors, university workers and visitors who wanted to participate were also incorporated (54 non students). Food products with higher consumption were fruit, 4.99 times per week, tortillas, 4.44 times per week on average; milk 3.6 times a week, and cooked vegetables 3.51 times. The foods least consumed were fish, 1.31 times a week; pork meat, 1.51 times a week, and soft drinks, 1.95 times a week. Moderate consumption of foods rich in carbohydrates and fats is observed: soda consumption is 2.27 times a week, fried snacks, 2.18; local snacks (tacos, tamales, pambazos, etc.), 2.25; cakes, 3.11; and sweets and candies, 2.93.

A prevalence of overweight in women of 29.13% and 30.14% in men was found, whereas the prevalence of obesity was. 6.08% for women and 9.92% for men. At the same time it is observed that the mean BMI for women (23.79) is lower than for men (24.54) and both lower than the national average.

To check for selection bias we compare the distributions of weight, chart 2 and height, chart 3. For both, men and women, the right tail on the weight distribution is larger than on the left tail. For the height distribution the same situation is observed only for women.

Statistical methods

We found one subject with missing values for measured weight and height. We calculated BMI (1) add reference for the WHO with the formula height / measured weight 2, where height is in meters and measured weights are in kg. We defined (1) low weight, normal, overweight and obese when the BMI is less or equal to 18.5, 18.5 to less than 25, 25 to less than 30, and 30 or more respectively.

We performed residual analysis for the regression model measured weight vs known weight and BMI, we also conducted …

Results

Comparing weights between the groups that know and do not know their weight, we noticed that those who knew their weights had an accurate knowledge of their own weight and that 209 (41%) of all the subjects did not know their weight:

|  | | **N** | **Min** | **25th percentile** | **Median** | **Mean** | **75th percentile** | **Max** | **Std (sqrt(Var))** | **CV=100\* (Std/Mean)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Knows own weight (y/n)** |  | 209 | 40.9 | 57.0 | 64.5 | 66.8 | 74.4 | 121.3 | 13.5 | 20.2 |
| **No** | **Measured weight** |
| **Yes** | **Measured weight** | 300 | 41.1 | 57.3 | 67.5 | 68.0 | 75.7 | 120.7 | 13.8 | 20.2 |
| **Known weight** | 300 | 39.0 | 56.5 | 67.0 | 67.4 | 75.0 | 116.0 | 13.6 | 20.2 |

Table A. Statistics known or not own weight

We also noticed that knowing or not their own weight, 57% and 59% respectively, are in the normal weight range.

|  | **Knows own weight (y/n)** | | | | **Column Totals** | |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | | **Yes** | |
| **N** | **Col %** | **N** | **Col %** | **N** | **Col %** |
| **BMI** | 6 | 3 | 16 | 5 | 22 | 4 |
| **Low weight** |
| **Normal weight** | 123 | 59 | 171 | 57 | 294 | 58 |
| **Overweight** | 66 | 32 | 86 | 29 | 152 | 30 |
| **Obese** | 14 | 7 | 27 | 9 | 41 | 8 |
| **Column Totals** | 209 | 100 | 300 | 100 | 509 | 100 |

Table B. Compare BMI within groups who know and don’t know their weight

Discussion

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***(Falta editar las siguientes referencias: autores, año, journal, paginas)***

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gener dif = 0

. replace dif = (peso\_n - autopeso\_num)

(506 real changes made, 3 to missing)

. bysort autopeso\_yes: sum dif

. bysort

autopeso\_yes = 0

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

dif | 209 66.76555 13.50242 40.9 121.3

-------------------------------------------------------------------------

-> autopeso\_yes = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

-------------------------------------------------------------------------

dif | 300 .588 4.152501 -22.6 22.7

-------------------------------------------------------------------------

. bysort autopeso\_yes: sum imc25 imc30

----------------------------------------------------------------------------------------------------------------

-> autopeso\_yes = 0

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

imc25 | 209 .3110048 .4640162 0 1

imc30 | 209 .0669856 .2505974 0 1

> autopeso\_yes = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

imc25 | 300 .2833333 .4513698 0 1

imc30 | 300 .09 .2866599 0 1

-------------------------------------------------------------------------

. bysort autopeso\_yes: sum genero2

-------------------------------------------------------------------------

-> autopeso\_yes = 0

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

genero2 | 209 .5119617 .501057 0 1

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-> autopeso\_yes = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

genero2 | 300 .58 .4943832 0 1

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bysort autopeso\_yes: sum sana2 obesfam2 estructura2

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-> autopeso\_yes = 0

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

sana2 | 209 .5454545 .4991251 0 1

obesfam2 | 209 .5215311 .5007356 0 1

estructura2 | 209 .5645933 .4970006 0 1

-------------------------------------------------------------------------

-> autopeso\_yes = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

sana2 | 300 .6266667 .4844977 0 1

obesfam2 | 300 .5333333 .4997212 0 1

estructura2 | 300 .5866667 .4932544 0 1

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bysort genero2: sum imc25 imc30

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-> genero2 = 0

Variable | Obs Mean Std. Dev. Min Max

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imc25 | 230 .2913043 .4553544 0 1

imc30 | 230 .0608696 .2396124 0 1

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-> genero2 = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

imc25 | 282 .3014184 .4596898 0 1

imc30 | 282 .0992908 .2995837 0 1

bysort genero2: sum imc

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-> genero2 = 0

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

imc | 229 23.78868 3.804443 16.02469 43.86719

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-> genero2 = 1

Variable | Obs Mean Std. Dev. Min Max

-------------+--------------------------------------------------------

imc | 282 24.53826 4.748015 13.40611 63.58634