

The double burden of malnutrition: food insecurity and overweight in Mexico

Edwin van Gasteren^a
Silvia Urbina Hinojosa^b

^a Centro de Estudios Económicos, El Colegio de México.

^b Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP)

*extended abstract prepared for Sobre México Congreso de Economía
April 27-28, 2017, Universidad Iberoamericana, Mexico City*

Food insecurity, that is, limited access to sufficient quantities of affordable, nutritious food, is one manifestation of malnutrition, while the existence of overweight and obesity is another. Where one is related to undernourishment, the other is linked with overconsumption, suggesting that the existence of one phenomenon rules out the other. Nevertheless, Mexico simultaneously observes both, not only at the national level, but also at regional level, and even within households.

We analyze which factors explain the simultaneous occurrence of the two representations of malnutrition within Mexican households, using data from the 2012 National Health and Nutrition Survey (ENSANUT). The Latin-American and Caribbean Food Security Scale (ELCSA), 15 questions regarding the quality and the quantity of the available nutrients, measures the household's food security. Overall about 30% are classified as 'food secure', that is, without preoccupations about food availability. About 10% are classified as severely food insecure, that is, not everyone could eat every day due to a lack of financial or other resources. In each household, of one adult age 20 or older the height and weight were measured, permitting calculation of the body-mass index (bmi). About 32% of the adult population is obese, and another 39% overweight. Surprisingly, the same levels of overweight and obesity are found at all levels of food insecurity.

In a simple econometric model we find that, among women, a higher level of food insecurity seems to increase the probability to report overweight or obesity, a result that is counterintuitive but in line with the small literature that exists for the USA. Among men, in contrast, food insecurity reduces the overweight probability, which is more in line with the expectations considering the phenomena's links with under and overnourishment, respectively. In a joint model, estimating the household's food insecurity level simultaneously with the selected household member's bmi, it is shown that the apparent explanatory power of food insecurity for bmi levels is largely due to other variables that help to explain both phenomena. In particular, the inclusion of socio-economic characteristics of the household and its members breaks the link between food insecurity and

overweight/obesity. Variables that indicate a lower poverty level, such as a better quality of the house, the possession of goods and assets, a higher income, and also a higher level of education attained, strongly reduce the likelihood to observed food insecurity. At the same time, we find that a higher educational level reduces women's overweight probability while the indicators of the house quality and possessions increase that probability. In urban areas we find clearer indications that, among men, food insecurity goes with lower overweight probabilities, while for women no significant relation is found. In rural areas we find almost no significant effects.

Our results imply that poverty reduction programs, that are intended and expected to reduce food insecurity, may have unexpected or even undesired effects on bmi levels, due to the complicated interaction between food security, poverty, and overweight. Separate policies are required to address food insecurity and overweight problems.

Keywords: Malnourishment; Food security; Overweight; Obesity; Poverty; ELCSA scale, Mexico.